

NATIONAL DEFENSE UNIVERSITY „CAROL I”
REGIONAL DEPARTMENT OF DEFENSE RESOURCES
MANAGEMENT STUDIES



**DEFENSE RESOURCES MANAGEMENT IN THE 21ST
CENTURY**

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OF DEFENSE RESOURCES MANAGEMENT STUDIES***

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Military professor, PhD. eng. Daniel SORA

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Military Power + Military Ethics = Information Operations

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Abstract:

Traditionally, nation states, and for that matter non-state actors as well, have used military power as the primary means of furthering their political interests. I argue that the application of military power must be in harmony with one's information narrative. If military and paramilitary personnel violate codes of behavior, then the information message is diminished. If I am correct then perhaps we should reframe and teach military ethics as part of the information campaign.

Key words: states, military power, ethics, politics, leaders.

1. Discussion

Traditionally speaking military power has been defined as the armed forces, both military and paramilitary, of a state. And, throughout history military power has been the primary political instrument nations have used to control and dominate each other.¹ Armed force can be defined as the application of military power to achieve a state's political objectives. This narrow definition of military power, however, is quite outdated. Today insurgent organizations, terrorist groups, and to a lesser degree international organized criminal cartels also have some degree of military power. Clausewitz states that war, or armed conflict, is an act of force by which a state compels an enemy to do its will.² He then goes on to say “that war is not merely an act of policy but a true political instrument, a continuation of political intercourse, carried on by other means.”³ Insurgents, terrorist groups, and organized crime cartels do this as well. The Madrid subway bombing in March 2004 just days before the Spanish elections and the March 2010 suicide bombings by Chechen separatists in Moscow are but two examples. Thomas Schelling, Alexander George, and Robert Pape contend that the mere threat of the use of armed force can coerce an adversary to alter its behavior. Yet, such threats do not satisfactorily apply in today's international environment.⁴

M.V. Frunze, the foremost Soviet military theorist and an admirer of Clausewitz, believed that Clausewitz missed the mark. Frunze believed that the relationship of politics to war (military power) has three aspects. First the employment of military power is not only a continuation of politics, but is dependent upon politics as well. Second, he held that the determining role of politics and that everything pertaining to waging war (employing

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military force) is subordinate to political leadership. Finally, he noted there is an inverse dependence of politics upon war.⁵

This point is easily illustrated with regard to the Korean and Vietnam Conflicts. Frequently US military leaders have stated that if the politicians had let them fight the Korean Conflict the way it should have been fought there would not be a divided Korea today. Other American military leaders have argued that had the politicians allowed the military to fight with ‘their gloves off’ in Vietnam, the US would have won the war. US Air Force officers in particular contend that had the Air Force been allowed to conduct *Operation Linebacker* in 1965 as opposed to *Rolling Thunder*, the Air Force would have single handedly won the war. Such statements not only indicate that military leaders fail to understand that military power is but one instrument of national power.

As just noted military power is not the only instrument of power available to further a government’s foreign policy objectives. Co-equal to military power is diplomatic, informational, and economic power. Even non-traditional actors, such as those mentioned previously, possess and use these powers to further their political objectives. The degree to which these powers vary among the actors is a factor of many variables. Today an argument could be made to include cyber power as a separate category of power rather than to continue housing it under the information domain. The reality is that all these powers interact with each other and if they are not in harmony, problems will arise usually resulting in the failure to achieve the political objectives being sought.

Political leaders of all the previously mentioned entities establish “foreign” policy objectives for dealing with other nation states, organizations, groups, etc. They use their diplomatic, informational, military, and economic powers (DIME), no matter how strong or weak, as conduits for exercising their policies. These four conduits, or five if you consider cyber power as a separate category of power, are not used in a vacuum. They are always used together in some way, shape, or form. All too frequently, however, the leaders of these different “power agencies” fail to remember that they are only one entity in a nation’s overall power structure. When this happens the ability of a nation to successfully pursue its political policy is greatly diminished.

Take for example the reconstruction period after the invasion of Iraq, *Operation Iraqi Freedom*. The inability of Presidential Envoy to Iraq, Paul Bremer the diplomatic leader, and Lieutenant General Ricardo Sanchez, the military leader, is well known. Their combined failure, because of personal issues, to carry out the political objectives of Washington during this post-invasion period was a major factor in the failure of US foreign policy in that country. The repercussions of that failure continue to reverberate today.

James Graham states that “Throughout history military power has been paramount and economic power a luxury.” This has slowly changed to the point that the two roles have been reversed.⁶ This may be true, but I want to suggest that we consider all aspects of the Information instrument of power and how all the other political instruments either enhance or weaken a nation’s application of it. I content that if the other instruments of power are not in harmony with the exercise of information power, the effects on policy objectives can be quite destructive. Ethics, particularly military ethics, I argue, can be a critical information power factor as a nation, insurgent organization, or terrorist group works to further its political objectives.

Military ethics is much more than simply adhering to the rules and customs of armed conflict. For officers and NCOs it extends to taking care of their people as well as

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their families. Military ethics is also an informational tool soldiers can use to alter the behavior of adversaries. Let me now explain each of these three in greater detail.

The misconduct of American soldiers with the mission of guarding prisoners at the Abu Ghraib detention facility in Iraq in 2004 had far reaching adverse effects on US operations in Iraq. Unfortunately, those effects did not end there. Peoples around the world were shocked! Many Americans asked how US soldiers could commit such heinous acts. Senior leaders had failed to properly exercise their supervisory responsibilities. Although it may be an example at the more extreme end of the spectrum, it does illustrate how lack of military ethics, especially when it occurs at many levels simultaneously, can and does damage a nation's information power. The adverse effects of this incident to American foreign policy objectives in Iraq and elsewhere are incalculable. Abu Ghraib continues to be used by Islamist groups in their information campaigns against US interests.

Ethical misconduct can also affect the information campaign of terrorist groups as well. Al-Qaeda used to film and then have televised the beheadings of their enemies. They were seen all around the world and were initially thought to be quite beneficial to that organization's policy objectives. That is until the beheading execution of the American journalist Daniel Pearl. What happened? By the time of this incident the sensitivities of Muslims around the world had been breached and the resulting backlash had a tremendous impact on al-Qaeda's operations and recruitment. In the end it was an information campaign gone bad.

In his book *Divining Victory Airpower in the 2006 Israel-Hezbollah War* William Arkin discusses the information power of competing adversaries. He indicates that the Israelis destroyed significant parts of Lebanon's infrastructure.⁷ Although most of the targets were legitimate under the rules and customs of war, the destruction of some violated the principles of military ethics. Hezbollah was quick to point such incidents out to international media. As a result Israel's information power was eclipsed by that of Hezbollah.

Today the United States is using unmanned aircraft to liquidate terrorist leaders, primarily in Pakistan. These attacks are conducted by pilots operating from remote locations. Sometimes the pilots are in theater but frequently they are at air bases in the continental United States. The cross-border attacks are not coordinated with the host government. All too often innocent men, women, and children are killed as a result of these attacks and are referred to as 'collateral damage'.^{8,9} Military necessity and collateral damage are over used terms used to cover failures of ethical behavior. For a time the government of Pakistan closed down the only land-based resupply route for US and NATO personnel in Afghanistan to protest these attacks.

Soldiers can also use the principles of military ethics to change the behavior of their adversaries. At the 2nd Annual EURO-ISME Conference in Shrivenham, UK French General Benoit Royal told the story of how a French NCO at a checkpoint on one end of a bridge affected the behavior of a rebel commander stationed at the rebel checkpoint at the other end of the same bridge. The issue was a young female family member was detained by the rebels while the rest of her family was allowed to cross the bridge. The French NCO knew he had to do something to convince the rebels to release the young girl. He did this by sending a letter to the commander of the rebel checkpoint reminding him of the ethical responsibilities of professional soldiers.¹⁰

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Consideration

Without boring the reader with endless examples, I trust that I have made my point, specifically that what soldiers do is related to a nation's information power.¹¹ When military ethical standards have been violated it can have a negative effect on a nation's information campaign/power. The adverse, meaning positive effect is obviously true. We must also realize that all nation states as well as other organizations previously mentioned teach their combatants some form of ethics. These ethics, I argue, are culturally, religiously, and politically determined. Even so, the international community directly or indirectly is always an audience when it comes to information operations.

If the reader accepts my argument then perhaps we ought to consider framing the notion of military ethics quite differently. My suggestion is to teach ethics as an information campaign. Walzer notes that all soldiers believe that their cause is right¹² and that they are fighting in accordance with the ethical principles established by their cultural heritage.

My question is: If we teach the principles of just war and military ethics as an element of information operations, would we then reframe the principles we want to convey in a much more understandable format? If my argument is sound then we can ask soldiers to consider their actions from a different perspective such as: 'if someone was to do (such and such) to your community back home how would you feel?' If your answer is that it would tick you off, then maybe you ought to select a different course of action. I am confident that training scenarios can be developed and soldiers trained to consider the implications of their actions on their own communities. I am convinced that even in highly charged situations soldiers would pause long enough to consider the consequences of their actions on a much larger audience such as 'what would my mom think?'

I am convinced that we can reduce the incidence of violations of ethical behavior by taking this approach. What do you think?

¹ VanHise, James. "Military Power" located at <http://www.fragmentsweb.org/fourts/milpowtx.html> and downloaded on 1 August 2012.

² Clausewitz, Carl von (1984). *On War*, ed. and trans. by Michael Howard and Peter Paret. Princeton, NJ: University of Princeton Press. p. 75.

³ *ibid.* p 87.

⁴ Wijk, Rob de (2001). "The Limits of Military Power" located at <http://mitpress.mit.edu/books/chapters/0262621797chapm1.pdf> and downloaded on 16 August 2012.

⁵ Gareev, Col. Gen. Makhmut Akhmetovich (1988). *M.V. Frunze, Military Theorist*. Washington: Pergamon-Brassey's International Defense Publishers, inc. p.86.

⁶ Graham, James (no date). "Military Power vs Economic Power in History". Located at <http://www.historyorb.com/world/power.php> and downloaded on 11 August 2012.

⁷ Arkin, William M. (2006). *Divining Victory Airpower in the 2006 Israel-Hezbollah War*. Maxwell AFB, AL: Air University Press.

⁸ See Sluka, Jeffrey A. "Death from Above UAVs and Losing Hearts and Minds" in *Military Review*, vol. XCI, No. 3, pp. 70-76.

⁹ For an interesting legal discussion see O'Connell, Mary Ellen. "When are drone killings illegal?" Located at <http://www.cnn.com/2012/08/15/opinion/oconnell-targeted-killing/index.html> and downloaded on 16 August 2012.

¹⁰ This is a very interesting story and I am happy to send it to anyone who requests a copy of the story (2 pages). I think it could be used as a case study.

¹¹ See Sidgwick, Henry (2005, originally published in 1891) *The Elements of Politics*. New York: Cosimo Classics. p. 256.

¹² Walzer, Michael (2000). *Just and Unjust Wars*, 3rd ed. New York: Basic Books. p. 127.



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GLOCAL CURRENCIES: A SPECIAL FOCUS ON ITALIAN COMMUNITIES AND EXPERIMENTS

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Abstract:

Glocalization is a term introduced into the sociological literature by Roland Robertson and Zygmunt Bauman to indicate “the simultaneity - the co-presence - of both universalizing and particularizing tendencies”. Indeed, nowadays in a context of financial and economical crisis glocalization appears to be more and more urgent since new kinds of “glocal currencies” (glocal, in the sense of being local but inspired by a global sense of justice and welfare) and “glocal business” could be the key to overcome the hurdles encountered in the common everyday life. In fact new micro-credit based experiments and business, like MyBnk launched by the Italian Lily Lapenna in London or the Italian KivaMap, are becoming more common and widespread. In this contribution we study and analyze examples in Italian communities like new currencies like Sardex, Dropis or Sceec and micro-credit based business. We believe that this is a way to make what John Hicks claimed come true : “money is defined by its functions. . . money is what money does”.

Key words: globalization; glocalization; currencies; economics; sociology.

1. Introduction

Glocalization appeared for the very first time in the nineties in a sociological review carried out by Japanese scholars and later it was brought to the attention of the sociological communities by Roland Robertson and Zygmunt Bauman, who defined it as “the simultaneity - the co-presence - of both universalizing and particularizing tendencies” and “the tampering effects of local conditions on global pressures”. [1-2]

Glocalization is an hybrid blended and creolized approach that considers globalization [3-5] as an irreversible process [6], due to a combination of historical and cultural processes that have gradually “compressed” and “squeezed” the world but at the same time claims that a mere exclusive application of the globalization governance can be dangerous.

Globalization has increased the socio-economic inequalities (favoring the macroeconomic volatility, the spread of capital flows), destroyed some vital forms of differences. Summarizing globalization is having negative effects especially for developing countries. [7-8]

Indeed, nowadays in this context of financial and economical crisis glocalization appears to be more and more urgent since new kinds of “glocal currencies” (glocal, in the sense of being local but inspired by a global sense of justice and welfare) and “glocal

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business” could be the key to overcome the hurdles encountered in the common everyday life.

The very first local currencies were *scrip* circulating in the USA in the 19th century (but they were not of legal tender) [9] and WIR Economic Circle Cooperative or *Wirtschaftsring* born in October 1934 as attempt to overcome the severe Great Depression and financial crisis of 1929 [10-11].

A local currency is usually being traded into a small area, especially during national currency major financial crisis, in order to raise the local economy [12-14].

In this contribution we study and analyze examples in Italian communities like new currencies such as Sardex, Dropis or Scec and micro-credit based business.

2. Micro-credit and glocal currencies

Micro-loans and micro-credit, integrated packages of credit are new words introduced by the Nobelist Muhammad Yunus as solutions to offer credit and possibilities also the poorest portion of population that has never been reached by the conventional credit delivery [15]. While financial trade and capital flows blur the national boundaries of a globalized world, micro-loans and micro-finance are deeply rooted in the local contests and realities. They are thought to foster the development of new micro-enterprises and micro-joint ventures. So micro-credit and glocalization are strongly linked and interwoven [16-19].

Complementary to the concept of micro-credit is the idea of local currency, born observing that countries and nations or communities of states are not an optimum currency area, because of the differences and the inequalities.

3. MyBnk

MyBnk is a new micro-credit based experiments and business, launched by the Italian Lily Lapenna in London and inspired by the bank developed by Mohammad Yunus (the Grameen Bank) [20].

Born in the eighties in London from Italian parents, Lily has worked for an ONG in Zimbabwe and for Brac development organization in Bangladesh where she became acquainted with the revolutionary idea of micro-cred.

"MyBnk is about financial freedom for future generations", she says about her project. Specifically thought for young people aspiring to enter the difficult world of nowadays market and business, MyBnk promotes a novel ethics and ideology.

4. KivaMap

KivaMap is an Italian start-up based application created to monitor the local currencies flows. In fact, the big novelty of the local currencies of the XXI century is their strong link with the new medias (such as Facebook) and the Internet in general, in such a way that the local context and reality can expand thanks to the virtual world and come in contact with other realities [21-23]. By the way Facebook itself has created and launched its own local currency (that is to say, Facebook credits, a virtual payment system used by the Facebooker communities)

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5. Simec

Created in 2000 by Domenico Auriti, living in Guardiagrele in Abruzzo and inspired by the economist Giacinto Auriti, Simec stays for Simbolo econometrico di valore indotto (literally, Econometric symbol of induced value). Simec is the first Italian local currency but it is also the history of a failure: due to legal issues, this experiment abruptly ended few months later.

6. Sardex

Created in the summer of 2006 by Carlo Mancosu, Piero Sanna, Giuseppe and Gabriele Littera, inspired by Wir and by the economist Silvio Gesell, Domenico de Simone (who coined the term FAZ, financially autonomous zone) and Giovanni Acquati (the founder of Ethical Bank), it is a successful local currency characterized by no interest rates. “You cant do money with money, money is only a mean of exchange”, they explain

7.Dropis

Dropis (literally “Drops” in Icelandic language) is a currency realized in 2011 by Sebastiano Scrofina (28 years) and Leonardo Dario Perna (28 years), two computer scientists and software developers that have the ambitious and foolish aim of replacing Euro with Dropis.

Dropis has been thought as the “Skype of the currencies, the peer-to-peer money”, currently available also as an application on Facebook.

8. Scec

Developed by Pierluigi Paoletti inspired by Rob Hopkins (founder of the organization Transition Towns) and recently introduced in Parma by the mayor Federico Pizzarotti, it stays for “Solidarietà ChE Cammina” (Walking solidarity) and it is chiefly based on a discount mechanism.

9. EcoAspromonte

Developed by Antonio Perna, it is the sole Italian local currency institutionally endorsed and supported by the world of the bankers (namely, Ethical Bank of Padua).

10.Other local currencies

Other examples of Italian glocal currencies are: Nauno (Val di Non and Val di Sole, Trentino), Toc (Pordenone), Marrucinum (Chieti), Thyrus (Terni), Tau (Tuscany), Napo (Naples), Kro (Calabria), EcoRoma (Rome) and even Susino (traded only in Val di Susa). Some of these currencies are used in all Italy, others in some regions, others only in some towns.

11.Conclusion.

The world of complementary currencies is extremely complex and heterogeneous like the glocal world itself. Our empirical survey suggest that there are different kinds of glocal currencies and different monetary strategies (exchange, discount, gift, loan and so on) A local currency implies a precise need and a reality. Currencies have fully adapted and integrated into their operating context.

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The keywords for a better understanding of local currencies are monetary networks and monetary actions instead of capital flows. Glocal currency is strictly linked to medium and small enterprise (and in Italy most of companies are in fact of medium and small size, the so-called PMI, Piccole e Medie Imprese).

This has completely challenged the traditional monetary theories: from to Marx and Quesnay to Pigou and Irving Fischer to Patinkin and Wicksell (the theory of interest rate) to Keynes, Schumpeter and Leon Walras (the theory of banks). A new more pragmatical theory has emerged. We believe that local currencies accomplish to make what John Hicks claimed: "money is defined by its functions. . . money is what money does". This is what we call monetary pragmatism.

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GLOCALIZATION: THE NEW ESTABLISHED TREND
AFTER GLOBALIZATION?

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Abstract:

Glocalization is a term introduced into the sociological literature by Roland Robertson and Zygmunt Bauman to indicate “the simultaneity - the co-presence - of both universalizing and particularizing tendencies”. If Coca Cola or McDonald invading Tiennamen square and colliding with Mao have been described as crucial example of the globalization process, now we look at intriguing contamination of these global symbols, a declination of them enveloped by the local atmosphere and culture. So thanks also to Slow Food Movement (inspired by Carlo Petrini) global fast food is served using local ingredients (like McFalafel), in such a way that even if global at the beginning the meal has now become local and to a certain extent unique. In a different field, all global languages (like English, Latin or Esperanto more recently) that have been created or were born in order to dominate all over the world have failed, and new local languages created by single authors are being developed, also to convey micro-meanings or micro-sentences. But glocal currencies and even glocal languages are different faces of the same medal : they represent the intrinsic need of man to rediscover the own Self and to make heard his voice, among many other voices.

Key words: globalization; glocalization; cosmopolitanism; economics; politics; sociology.

1. Introduction

Glocalization appeared for the very first time in the nineties in a sociological review carried out by Japanese scholars, who used the Japanese word *dochakuka*, which originally meant adapting farming technique to one's own local condition. Later it was brought to the attention of the sociological communities by Roland Robertson and Zygmunt Bauman, who defined it as “the simultaneity - the co-presence - of both universalizing and particularizing tendencies” and “the tampering effects of local conditions on global pressures”. [1-2]

Glocalization is an hybrid, blended and creolized approach that considers globalization [3-5] as an irreversible process [6], due to a combination of historical and cultural processes that have gradually “compressed” and “squeezed” the world but at the same time claims that a mere exclusive application of the globalization governance can be dangerous.

Globalization has increased the socio-economic inequalities (favoring the macroeconomic volatility, the spread of capital flows), destroyed some vital forms of differences. Summarizing globalization is having negative effects especially for developing countries. [7-8]

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In this manuscript we want to show with real and concrete examples how glocalization is shaping the new world.

2. Glocalized food

Meal is an important identity and cultural factor. If Coca Cola or McDonald invading Tiennamen square and colliding with Mao's ideology have been described as crucial example of the globalization process (the so-called macdonaldization) [9-12], now we look at intriguing contamination of these global symbols, a declination of them enveloped by the local atmosphere and culture. So thanks also to Slow Food Movement (inspired by Carlo Petrini) global fast food is served using local ingredients (like McRye in Finland introduced for the first time in 1998 [13], McArabia in Morocco and other Arabic countries, McTurco in Turkey, McFalafels in Egypt, Maharaja Mac in India, Greek Mac in Greece, McSpaghetti in the Philippines, Croque Monsieur in France, KiwiBurger in New Zealand and so on), in such a way that even if global at the beginning the meal has now become local and to a certain extent unique.

3. Glocalized marketing, business and brand communication

While globalized marketing is chiefly based upon delocalization and the existence of few big multinational companies, glocalized marketing refers to the phenomenon in which international brands establish and locally adapt their message/products according to the context, leading to a vial contamination process. Big companies can cooperate locally with already existing medium and small firms and attribute cross-cultural meanings to their products, especially items sold to Chinese or Muslim communities. [14-18]

4. Glocalized pharma and medicine

Glocalized e-health is emerging as a promising approach to health care: characterized by the blurring of the conventional national boundaries, it seems to overcome inequity in access, especially in developing countries [19].

Global infectious diseases such as epidemics and pandemics have entered the glocalized sphere and are managed and treated according to local contexts and realities. [20-21]

Another important trend in glocalized medicine is the "glocal drug" [22]: for example, the Berber Viagra and the Lebanese one which apparently and somehow paradoxically are able to blend the well-known chemical molecule prescribed for erectile dysfunctions and the rigorous Muslim view on sexuality. Glocalized vaccine are another successful example of glocalized therapeutics (such as anti-meningococcal vaccines, like MenAfriVac in Africa or others in Chile, Cuba and Norway) that the suggestive cooperation between a pharmaceutical multinational and local drug companies made possible to design and distribute.

5. Glocalized linguistics

While English is the symbol of the global languages, created and developed in order to dominate all over the world, new local languages created by single authors or teams of authors are being developed, also to convey micro-meanings or micro-sentences.

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Contaminating already existing languages with local speeches or designing new languages ad hoc also by borrowing words and dictionaries is made possible by the new medias (like the social networks).

Glocal languages represent the intrinsic need of man to rediscover the own Self and to make heard his voice, among many other voices. [23-30]

6. Glocalized music, sport and culture

Music [31-35] and sport [36] are two important cultural factors that contribute to the shaping of our identity. Ghanaian hiplife which is a mix of American rap and highlife is only one of the possible examples, together with classical rock re-interpreted by the Turkish communities or the local varieties of a well-known global sport like football.

7. Glocalized military defense

New kinds of wars and conflicts, the so-called “globalized local conflicts”, such as those in Palestine-Israel, the Persian Gulf, Somalia, Rwanda-Burundi, Kosovo, Bosnia, Afghanistan, Iraq and Chechen Republic have created increasing forced migrations accompanied by “cultural insecurity” for the immigrants and have challenged the traditional concepts of national security and military defense.

New “glocalized military strategies” have emerged and a new doctrine of the new generation of warfare has been proposed: the so-called 4GW military doctrine (fourth generation warfare). If the 1GW begun after the Peace of Westphalia in 1648 ending the Thirty Years’ War and establishing the State’s need to organize war and it was based on tightly ordered top-down discipline, strong and deeply rooted hierarchy, the 2GW relied on indirect fire while the 3GW strove to bypass and collapse the enemy’s combat forces.

The 4GW is revolutionary because the differences between civilians and soldiers are very subtle, the adopted techniques are complex, the approach is down-top, there is a lack of hierarchical structures and deeply relies on “glocalizing insurgencies” (ie a global-thought mission, with a local coordination). Moreover it exploits intelligent missiles, bombs, drones as well as psychological operations and the new medias like Internet. Al-Qaeda and the Jihad are prominent examples of the new concepts of glocalized challenges that military defense has to face. [37-40]

8. Conclusion.

Globalization is being continuously shaped and re-shaped by the current glocalizing tendencies. Instead of being a homogenous, timeless, constant reality, it is becoming extremely complex and above all citizen-driven and down-top, at the contrary of globalism tendencies. It has positive effects and potential benefits like those to re-discover places that had become meaningful and empty during the globalization process (the so-called non-places [41]) and to give them new values and meaning, but has also dangers, challenges especially as far as the theme of security and military defense is concerned.

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**THE ROLE OF PRIVATE SECURITY COMPANIES IN THE
FIGHT AGAINST ORGANISED CRIME AND MODERN
TERRORISM IN THE AGE OF GLOBALIZATION**

Phd. Candidate Lt. Ergys LLANAJ

Abstract

Nowadays the Industry of Private Security (IPS) has been seen as a very efficient actor in security and has served as a vital relying point for governments all over the world. The present concern on the activities of criminal and terrorist international groups has attributed to the private security companies extra power especially in protecting the interests of those States which are concerned for their internal security. Modern terrorist in the 21st sentry has new aspects and characteristics different from the terrorist in the past years. The aim of this study is to shed some light on the complex link of modern terrorism and organized crime in the age of globalization and the role of this IPS in this big asymmetric war. In order to reach this aim the diverse aspects of globalization and the diametrically opposite approaches dealing with globalization are touched upon in order to understand its complex structure. Which will be the new challenge on the root causes of terrorism, organized crime and the advantages of using IPS, in the 21st century are to be discussed.

Key Words: *Terrorism, Organized Crime, Globalization, Technology, Critical Infrastructure, Multinational, Communications, IPS.*

To the Joseph S. Nye's question, "As a republic and empire Rome lasted 1000 years. Why should we last only 50 years?" Barnett answers: "The war and peace in the 20th century are not going to be the same with that of the 21st century. After the Second World War, America is making war for a new world globalism, that is, for a New World Order. We're not going to be satisfied only with the victory, we, too, have to increase". [1]

1. Introduction

Terrorism has been used as a tool of violence against innocent people throughout history. However the fall of communism and collapse of URSS inflicted an "empty geopolitics space or a black hole" not only the international system, but also its biggest threat "terrorism" has undergone transformation. The major transformation of terrorism explicitly coincides with globalization itself. As an ongoing complex process, globalization possesses some ambiguities not only in definitions but also in future, actors and the way it is heading. In the most part of that there are Turkish states of Middle Asia. To Brezinski, these Asia regions are inhabited with a very heterogeneous population and very predisposed for conflicts. Brezinski calls it as "Balkan – Eurasia" and it is situated from Caucasus, Iran, Afghanistan and Turkish republics in Central Asia. Brezinski gives us very interesting thoughts about Turkey and Iran. "Both of these states exercise expansionist, cultural, religious policies and tend to make profit in the region. Both these countries are powerful neighbors, an ethnic conflict between them exercises a big support for the entire region. Turkey and Iran are not only two geostrategic players; with their inner character they play a very dangerous role for the entire region. [2] A number of emerging and

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developing components impede an easy definition of globalization. Nevertheless, the end of the Cold War, disintegration of the Soviet Union, the swift escalation of capitalism and the thought of the absolute hegemony of Liberalism seem to have been the initiators of globalization. [3] Literature is full of arguments, different definitions over the benefits and drawbacks of globalization in different contexts. Globalization is one of the most ubiquitous terms in diverse arenas, preserves its ambiguity in terms of definitions, dimensions and functions. Besides, transformation particularly in political, cultural, technological and economic areas multiplies this ambiguity. It is a process which ensures the improvement of the quality of life, raising of living standards and bringing people together which, in turn enables different nations to come into harmony and share their cultures. [4] Graham E. Fuller and O. Lesser, in their book "Besieged" (1995) have taken into consideration the process of the conversion to Islam and the West geopolitics in the theme "New geopolitics of Turkey – from Balkan to Western China". They appreciate highly the importance of Turkey within the arch from Morocco to Central Asia. All these plays, manipulations, conspiracies and destructive policies in this book, are quite understandable for us. [5]

Thomas I. M. Barnett in his work "Pentagon's New Map, the War and Peace in the 21 Century" points out the USA new policy.

- The geographical zone consisted of industrialized states is denominated as "active centers".
- The geographical zone consisted of non – industrialized states is denominated as "The empty zone not integrated".
- The states situated between the "active center" and "empty zone not integrated" where Turkey enters are denominated "States of the border".

The Industry of Private Security (IPS) has been seen as a very efficient actor in security and has served as a vital relying point for governments all over the world. The present concern on the activities of criminal and terrorist international groups has attributed to the private security companies extra power especially in protecting the interests of those States which are concerned for their internal security.

All over the world, IPS are being developed very rapidly. When efficient and ready to respond to all challenges in a particular area, it gives a great contribution and help to the States for their national security. But when these private actors are not controlled and are not coordinated, they can be an obstacle in peace construction, in good government and for the development of the countries in transition or after conflicts.

It takes a special importance, considering that during the last decade, private actors have taken more and more over the roles that have traditionally been the responsibility of the State for implementation of national security. The continuous growth of private security industry (IPS) it's not an unexpected issue. Mercenaries and armed groups of non-state have been a common feature of the war in the middle Ages.

2. Defining Terrorism

According to Barnett the terror in the world comes from not-integrated regions and it is spread over the border zones. To the Border States the American policy is very simple: protection of the middle countries by all protective means, letting America to close each window where from terror could penetrate. [6] Against the international terrorism the state of the "Arch of Crisis" as those of South America, South Africa, Balkan-Eurasia, Thailand,

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Malaysia and Turkey are transformed as anti-terror states. As a conclusion, extension of the “active center” and the narrowing through the force of the “Arch of Crisis” according to Barnett is the solution of the problem. [7] The military force of America Barnett compares with mythological figures, confirming that we are **Leviathan force of the World**. [8] By the description of the American military force as an irresistible force to the enemy, regardless powerful it could be, face to face with American Army it will be torn into rags and in this case it will be a lesson to him. Barnett, this way confirms openly great supremacy of the American Army and his confidence on the American force. In the essence, notwithstanding Barnett doesn’t talk openly, in his work “The New World Order, the 21st Century”, he thinks that the New World can be established only through the American military force. [9]

In a different thought Brzezinski says: “America has to prolong her actual World Order for some generations and after the geopolitical conditions for transformation through her force, only then she can change the political order”. [10]

In French “terreur” and in English “terror” are etymologically derived from the Latin origin word called “terrere”. [11] This word was first used in French Revolution, but the meaning of terrorism at that time was completely different from the contemporary usage. It had a positive connotation against the anarchical period of turmoil and upheaval that followed the uprising of 1789. [12]

“Terrorism on behalf of an authority established by individuals or groups, or authority to act against the main victims of a much broader audience, on the maximum level of political demands by creating anxiety and fear on violence intended to impose the use of violence” [13]

However, the meaning of terrorism lost its revolutionary aspect and gained its current connotation after successive conflicts and wars in history. Terrorism as first component has always a political purpose but this does not mean that terrorism is a political act. If a terrorism act has no political purpose it should be defined as a criminal act. [14] The second aspect is the actor, terrorist attacks can be conducted by non-state individuals or groups. The third aspect is related to the use of violence against the innocent.

Sometimes we confuse terrorism acts with criminal acts done by the organized crime because they are so similar from the way of done, the weapons and the method used. In early 1975, the Law Enforcement Assistant Administration in the United States formed the National Advisory Committee on Criminal Justice Standards and Goals. One of the five volumes that the committee wrote was entitled *Disorders and Terrorism*, produced by the Task Force on Disorders and Terrorism under the direction of H.H.A. Cooper, Director of the Task Force staff. [15] The Task Force classified terrorism into six categories.

- **Civil disorder** – A form of collective violence interfering with the peace, security, and normal functioning of the community.
- **Political terrorism** – Violent criminal behavior designed primarily to generate fear in the community, or substantial segment of it, for political purposes.
- **Non-Political terrorism** – Terrorism that is not aimed at political purposes but which exhibits “conscious design to create and maintain a high degree of fear for coercive purposes, but the end is individual or collective gain rather than the achievement of a political objective.”
- **Quasi-terrorism** – The activities incidental to the commission of crimes of violence that are similar in form and method to genuine terrorism but which

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nevertheless lack its essential ingredient. It is not the main purpose of the quasi-terrorists to induce terror in the immediate victim as in the case of genuine terrorism, but the quasi-terrorist uses the modalities and techniques of the genuine terrorist and produces similar consequences and reaction. [16] For example, the fleeing felon who takes hostages is a quasi-terrorist, whose methods are similar to those of the genuine terrorist but whose purposes are quite different.

- **Limited political terrorism** – Genuine political terrorism is characterized by a revolutionary approach; limited political terrorism refers to “acts of terrorism which are committed for ideological or political motives but which are not part of a concerted campaign to capture control of the state. [17]
- **Official or state terrorism** – “referring to nations whose rule is based upon fear and oppression that reach similar to terrorism or such proportions.” It may also be referred to as **Structural Terrorism** defined broadly as terrorist acts carried out by governments in pursuit of political objectives, often as part of their foreign policy. [18]

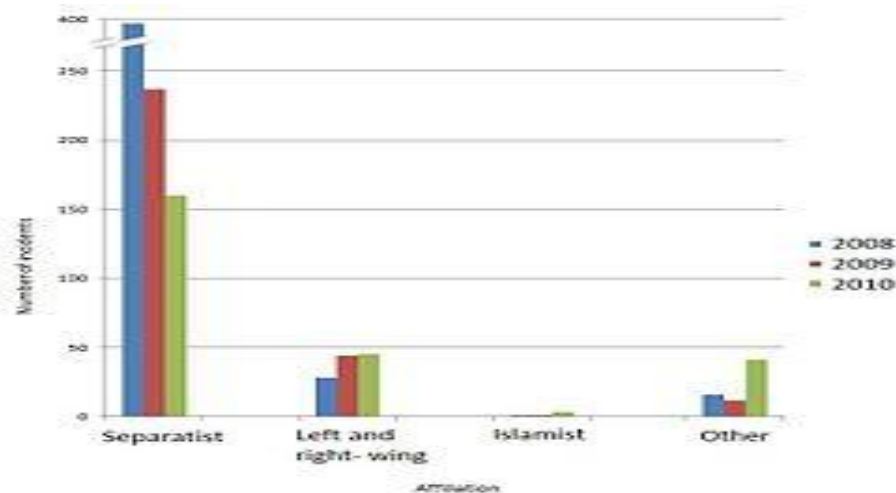


Fig.1. Number of failed, foiled or successful terrorist attacks by year and type within the European Union. Source: Europol. 1 person died in terrorist attacks from a separatist groups in 2010. [19]

3. Defining Organized Crime

Organized crime threatens peace and human security, violates human rights and undermines economic, social, cultural, political and civil development of societies around the world. Transnational organized crime manifests in many forms, including as trafficking in drugs, firearms and even persons. At the same time, organized crime groups exploit human mobility to smuggle migrants and undermine financial systems through money laundering. The vast sums of money involved can compromise legitimate economies and directly impact public processes by 'buying' elections through corruption. It yields high profits for its culprits and results in high risks for individuals who fall victim to it. Every year, countless individuals lose their lives at the hand of criminals involved in organized crime, succumbing to drug-related health problems or injuries inflicted by firearms, or

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losing their lives as a result of the unscrupulous methods and motives of human traffickers and smugglers of migrants. [20]

Organized crime has diversified, gone global and reached macro-economic proportions: illicit goods may be sourced from one continent, trafficked across another, and marketed in a third. Transnational organized crime can permeate government agencies and institutions, fuelling corruption, infiltrating business and politics, and hindering economic and social development. And it is undermining governance and democracy by empowering those who operate outside the law. The transnational nature of organized crime means that criminal networks forge bonds across borders as well as overcome cultural and linguistic differences in the commission of their crime. [21] Organized crime is not stagnant, but adapts as new crimes emerge and as relationships between criminal networks become both more flexible, and more sophisticated, with ever-greater reach around the globe. In short, transnational organized crime transcends cultural, social, linguistic and geographical borders and must be met with a concerted response.

What is transnational organized crime? The UNTOC does not contain a precise definition of 'transnational organized crime'. Nor does it list the kinds of crimes that might constitute it. This lack of definition was intended to allow for a broader applicability of the Organized Crime Convention to new types of crime that emerge constantly as global, regional and local conditions change over time. [22]

The Convention does contain a definition of 'organized criminal group'. In Article 2(a):

- a group of three or more persons that was not randomly formed;
- existing for a period of time;
- acting in concert with the aim of committing at least one crime punishable by at least four years' incarceration;
- in order to obtain, directly or indirectly, a financial or other material benefit.

Since most 'groups' of any sort contain three or more people working in concert and most exist for a period of time, the true defining characteristics of organized crime groups under the Convention are their profit-driven nature and the seriousness of the offences they commit. The UNTOC covers only crimes that are 'transnational', a term cast broadly. The term covers not only offences committed in more than one State, but also those that take place in one State but are planned or controlled in another. Also included are crimes in one State committed by groups that operate in more than one State, and crimes committed in one State that has substantial effects in another State.

The globalization brings nowadays to these organized crime groups a more complicated structure, they are not working only in origin country but they are transnational, they structure is not anymore national as before in old times but is with international participants is not any more homogeneous which make it more complicated and difficult to fight against them. Organized crime groups are providing money laundering, finding financial resources and trafficking arms for terrorist groups, it will be better while fighting against terrorist groups prevention of spread of organized crime. PSC are providing a very good job in these field by monitoring ports, airports with dedication and professionalism. These fact point out that PSC can work as a police or army member at the same level of knowledge and preparation.

4. Defining PSC and MPC

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The Private security sector includes a wide range of actors. Besides a un-official number of illegal operators, such as mercenaries and area civil defense forces, in it will be included illegitimate organization such as: Private Security Companies, Private Army Companies, Homeland Security Sectors and Insurance Non-lethal Services. PSC can work on different national environments. The decree of export control of weapons in USA of year 1968 and the following amendment, treats the export of security services in the same way like the export of other stuff: they declare exactly to whom is being exported the service but not the way how it's going to be used. [23] American companies that offer military services to the foreigners inside or outside the country are forced to have a license from the State Department according to the Rules of International Transportation of Arms (RTNA) that implements the decree of Arms export control. [24] Anyway the process of license it's not a standard procedure. There is not a formal observation after the license is purchased, neither doesn't exist provisions to ensure transparency. Special cases are when a contract value is more than 50 million American dollars, in this cases is required an announcement of congress before it's allowed. [25] The responsibility for the observation of license control for the exported services of PSC is done under the care of officials of embassies outside the country; and custom services are also responsible for guns and other materials.

The efforts to categorize more accurately the private actors in the security sector have been very controversial. A distinction exists between Military Private Companies (MPC) and Private Security Companies (PSC). MPC can be defined as private company that provide offensive service, with military influence, while the PSC as protection services, with the aim to safeguard persons and property. This distinction is problematic especially for two reasons. Firstly, what is called "defensive" in certain circumstances may turn into "offensive" in other ones. Secondly, the immediate short and medium – term demands of business have created the opportunities that companies can adopt new functions and tasks in a very quick time, making the differences between offensive / defensive or active / passive irrelevant or misleading. In order to avoid the distinction between "military" and "security" from now on we will use the term "private security company" (PSC) in order to present all the companies within the industry.

PSC can offer prevention and detection of stealing, lost, misappropriation or concealment of goods, money, financial bonds, stocks, records, documents or value papers securities (custody of monetary values during transport) and the protection of persons (bodyguards) are other activities which are covered easily from this sector. Most of the PSC have corporate structure and usually act as legal entities. Some of them are part of large industrial consortiums which are the richest of the world. They are based on regular financial systems which move easily in the international arena. Services that they provide are non-police functions and they have a wider scope of action. In this case we can mention the prevention and detection of unauthorized activities or threaten of the private property, through patrol, protection of private property, energetic fields (nuclear), military facilities and security into the airports.

PSC – offer to clients the privacy of data and their deposit. They are contracted not only by governments but also from international originations, international media and multinational corporations. These companies are ready to offer latest services of technological devices such as alarm systems, detector services (weapons, drugs, explosive), IP camera, detective sensors etc. It is the aim of PSC what makes them a powerful force in world affairs. Adaptation of PSC with new ways in international security management will be depended

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from the possibility to expand their capacities toward a higher long-term goal which is determined more from politics than economy.

5. PSC, MPC or Army

Can PSC work as an army is one of the most interested questions nowadays? Some analysts think that PSC offer some priorities comparing to army forces. PSC are faster in action, they minimize the public disturbance and they also work as counterweight of local army in the states with weak political institutions.[26] PSC various services nowadays: operational support in combat, military advice and training, logistic support, accommodation, security, crime prevention. PSC while working as army in battle field offer too much possibilities to the ministry of defense of the country who contracted the PSC because of three main concerns. First the country doesn't need to pay "Life Insurance in Battle Field" for the people in the theatre because it is paid from the contractor. Second it is not needed a Pre-Deployment six month training period which has a financial cost for the country according to the actual legislation PSC have the duty to organize at least the standard qualification for the private security armed guards. Third and the most important all logistic support is done from the contractor.

From country to country that participates in PSO "Peace Support Operation" the equipment used in battle field changes. Most of the time it depends on the budget of the country, but for PSC we can put contractual obligations that provide the unification of all PSC Units in the ground. The general financial cost is lower when we use the PSC doing the same job done from the army because most of the time the employers are provided from the region where is operating the PSC or are contractually only for a short period not more than 5 years but the only concern is lack of training mostly for all PSC can be said.

As we know the major parts of PSC are focused on the importance of equipments and technology. The utilization of technology helps for the premises protection, is less expensive avoid the useless static presence of Security Guard. All PSC are capable of internal communications via radio between patrols and main office of the company. PSC keep training the employees which are the best specialists in technology and operational areas. Alarm and detector systems implementations are considered very useful and quite; 100% successful. PSC is facing growing requests for alarm systems and other technologic equipment implementations to avoid the static presence of Security Guard Camera, system implementations presents growing needs by the private sector. There is a common perception for repetitive trainings and very probably organizing special trainings depending on duties. A special attention will take the qualification of arms usage and beagles. As for the professional perspective, the qualification for arms usage should be taken on the same time with the qualification of Security Guard. Before the qualifications, the individuals have to follow the verification procedure determined by the respective institution. The permission from security organs is precondition for the right to be trained and later to use weapons. About this issue is recommended a minimum period of three years of experience. The experience in Iraq and Afghanistan has shown that MPC and PSC are were not well trained, not in good health conditions, not well equipped, bad behaviors in work discipline and some employers have clearance problems in the beginning, but the report of these years shows that they are improving very fast and getting experience in battle field. In both countries MPC provided very good security for the critical

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infrastructure, logistic support movement, base security operations, combat operations and guard services also are providing very good service with latest equipment for their employers to the military regular units that are operating in the same base.

We have the example of Blackwater USA which was formed in 1997, by Erik Prince in North Carolina, to provide training support to military and law enforcement organizations. In explaining Blackwater's purpose, Prince stated that “We are trying to do for the national security apparatus what FedEx did for the Postal Service.[27] After serving SEAL and SWAT teams, Blackwater USA received its first government contract after the bombing of the USS Cole off of the coast of Yemen in October 2000. After winning the bid on the contract, Blackwater was able to train over 100,000 sailors safely, [28] these company is providing various services as maritime security services, United States Training Center, security consulting, aviation worldwide services, employs soldiers for off-shore security work through its affiliate Satelles Solutions, Iraq war involvement which was very successful is the best indicator for all countries to give role to PSC,MPC in these kind of engagements.[29]

6. Conclusions

The capacity of private security sector in order to be legal in the international area is regarded with the capability of states in managing PSC and their adaptation with good government. PSC today are used for information collection from the satellites or sophisticated detectors, also used for translation and testing of results and deliver them into the governmental structure. They are used in the information field using ex- informative agents and electronic terrorism agents also monitoring websites. All over the world, IPS are being developed very rapidly. When efficient and ready to respond to all challenges in a particular area, it gives a great contribution and help to the States for their national security. But when these private actors are not controlled and are not coordinated, they can be an obstacle in peace construction, in good government and for the development of the countries in transition or after conflicts. Nowadays MPC is providing very good security for the critical infrastructure, logistic support movement, base security operations, combat operations and guard services also are providing very good service with latest equipment for their employers to the military regular units that are operating in the same base. These companies are ready to offer latest services of technological devices such as alarm systems, detector services (weapons, drugs, explosive), IP camera, detective sensors etc. It is the aim of PSC what makes them a powerful force in world affairs. Adaptation of PSC with new ways in international security management will be depended from the possibility to expand their capacities toward a higher long-term goal which is determined more from politic than economy.

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**ADDRESSING THE NEED OF QUALIFIED PERSONNEL IN
DEFENSE INDUSTRY: THE TURKISH CASE**

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Abstract:

As it could clearly be seen in previous experiences and studies, having a sophisticated defense industry is essential in order to be ready against unconventional threats. However, it is a well known fact that all kinds of technology, products and services could be imitated in a considerably short span of time. Thus, the importance of qualified human resource gradually gains significance in terms of creating and maintaining strategic superiority in defense industry. The aim of this study is to call attention to the lack of academic publishing in Turkish literature and present both the current situation and necessary steps to be taken for the targeted HR success of the Defense Industry in Turkey, which holds 52% of self sufficiency at present. In order to present that, the legal implementation of the current personnel employment, training processes of Turkish Defense Industry and academic publishing related to this field have been examined. Obtained data is analyzed by using the methods of descriptive analysis, document and discourse analyses. In conclusion part, a training program is tried to be put forth to address the need of qualified personnel in defense sector.

Key words: HR Management in Defense Industry, HR in Turkish Defense Industry, Qualified Personnel, HR Management.

1. Introduction

In today's world, which has been transformed into a global market, investments on technology, research-development and marketing are not sufficient enough to create an authentic industrial difference for a long time [1]. These services could be imitated and/or bought from the rival companies [2]. All products, services or technologies are imitated in a very short span of time in our day. At this point, the significance of human resources emerges as a suggestive approach to create a unique and authentic difference [3]; [4]; [5].

Moreover, the meaning and the source of threat has changed dramatically and thus, providing absolute security of a nation has become a highly controversial question. As it could clearly be seen in previous experiences and studies, having a sophisticated defense industry is essential in order to be ready against unconventional threats [6]; [7]; [8]; [9]; [10]; [11]. Thus, the importance of qualified human resource gradually gains significance in terms

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of creating and maintaining strategic superiority in defense industry as well [12]; [13]; [14]; [15]; [16].

The aim of this study is to call attention to the lack of academic publishing in Turkish literature and present both the current situation and necessary steps to be taken for the targeted HR success of the Defense Industry in Turkey, which holds 52% of self-sufficiency at present [17].

2. The Importance of Human Resources (HR) Management in Defense Industry

It is a well known fact that personnel management has been transformed into human resources management in our day. In this process, employees are considered as strategic assets and for this reason human capital is positioned beyond the work [18]. Therefore, companies are required to retain qualified human capital in order to survive and create advantage. Current technological, economic and social developments lead companies to give more significance to human capital [19]; [20]. As a result, the position of employees has become highly important in terms of preparing more distinct action plans and keeping up with the globalization and information age [21].

Having a qualified human capital is also mentioned in detail within the most current strategic document of Undersecretariat for Turkish Defense Industry, 2012-2016 Strategic Plan. In this plan, employing qualified personnel, providing training and substructures to increase personnel performance and retaining that capital is explained as highly significant. Therefore, the need for an appropriate and applicable human resource management strategy has been arisen [22]. As it could clearly be seen in literature review, the issue of having qualified defense personnel has been dealt seriously by the authorities and supported by the strategic documents but how could these people become qualified and what kinds of trainings they are supposed to receive, still remain as unanswered questions.

3. The Importance of Training Qualified Defense Personnel And Current Implementations in Turkey

Although the global financial crisis and economic collapses experienced in 2008, increase in defense expenditures has continued. However, it is envisioned that the countries which experience serious budget deficit, would cut down on their defense expenditures. For instance; developed countries such as the U.S.A, England, France and Germany has decided to cut down on 30 % of their defense expenditures gradually by 2015. As defense resources are strictly controlled due to public pressure, planning and managing defense resources has become more complicated hence the employed personnel in this field are supposed to have an interdisciplinary training [23]; [17].

In literature review it is pointed out that, globally successful countries have high technology because their university education system is in line with their industry [24]. Consequently, Turkey has founded a number of technology development centers which are directly integrated into defense industry as well. In order to enhance cooperation between universities and defense industry, TUBITAK-MAM (Marmara Research Center), ODTU-BILTIR (Automation-Robotics-Electrical-Electronics Unit), MODSIM (Modeling and Simulation Research and Application Center), Defense Technologies Application and Research Center at Atilim University have been founded [25]. Besides, a master program in defense technology at Istanbul Technical University started to accept graduate students (iris.fbe.itu.edu.tr). However, the targeted success has not been achieved yet [26]; [10].

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In order to produce authentic national technology and dominate technological changes and transformations in defense industry, training of qualified personnel gains significance. In current strategic documents and journals this issue has been mentioned as “training of value driver human capital”[8]; [23], [27]; [28]; [6]. As both the literature and defense experts point out, restructuring an appropriate training program becomes highly significant.

4. Conclusion

In literature review, it is seen that the emphasis is mainly on developing new technologies in defense industry and the dimension of management sciences is generally disregarded in Turkey. Defense Industry and Technology Training Center Command is the leading training institution in Turkey but when its training programs are examined, it is seen that both quotas and training contents are limited. Besides, personnel, who becomes qualified enough to carry complicated executive tasks, may be sent on a different assignment so efficiency rate decreases in direct proportion to it.

In order to prevent that negative situation, based upon the legal strategic documents, a new training program, which is open to civilian student participation, is definitely needed in Turkey. This program should be integrated directly into the defense industry and supported by a legal implementation. Besides, its curriculum should pay extra attention to management sciences. According to current applications and defense expert opinions, the curriculum is tried to be put forth as below:

TERMS	LECTURES
1.Term	Introduction to Economics
	Security and Security Strategies
	Management and Organization
	Introduction to Information Technologies
	Communication Skills Training for Executives & Managers
	Financial Reporting and Analysis
	Managerial Finance and Economic Analysis
2.Term	Strategic Management
	Defense Economy
	Planning and Management of Defense Resources
	Statistics
	Operational Research
	Modeling and Analysis
	Supply Chain Management
	National Security Policy (Elective)
3.Term	Comparative Economic Systems
	Cost Management
	Defense Projects Management
	Contract Management
	International Law and Organizastions

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	Interpersonal Communication Management (Elective)
4. Term	Student Project

Table 1: Defense Resource Management Curriculum for Turkey

This program is constituted as a master program and includes four terms. Students are supposed to take theoretical lectures (and most of these lectures consist applied trainings as well) till the fourth term and they are supposed to prepare a term project at the end of this program. This term projec

It would be prepared according to the needs of defense industry and under the guidance of defense experts.

Furthermore, a shorter version of this training could be integrated into the training programs of the major defense companies and universities conducting researches in defense field. Also it could be extended and developed according to the defense needs. However, if this program is not supported by a legal implementation, the efficiency of the training would become questionable. Creating a research platform on which both civilian and defense experts would come together and giving importance to the outcomes of this platform is very important in terms of efficiency so providing cooperation among the institutions and utilizing concrete outcomes are the key terms for the training of qualified personnel and thus enhancing defense industry in a successful way.

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**MINIMIZING THE DEVIATIONS IN DEFENSE PROJECTS:
THE TURKISH CASE**

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Abstract:

In strategic documents published by Undersecretariat for Defense Industries, it is viewed that Turkey has targeted to have both authenticity and high technology in defense projects since its importance has been clearly defined in previous studies. However, when the official reports have been examined it is also viewed that Turkey has failed to reach its objectives in this field. This study aims to present applicable solutions to minimize deviations in defense projects. In order to do that in an effective way, current projects of Turkish Defense Industry, strategic documents, conferences and academic publishing are examined. Obtained data is analyzed by using the methods of descriptive analysis, document and discourse analyses. Both the ideas of Turkish defense experts and outstanding examples from the world have been taken into consideration and concrete suggestions aiming to minimize deviations in this field are tried to be put forth in conclusion part.

Key Words: Minimizing the Deviation, Defense Projects, Defense Industry, Turkish Defense Projects

1. Introduction

Throughout history it is seen that, if a country's military and/or political power weakens, the possibility of starting a war increases; thus countries may feel obliged to defend themselves [1]. According to De Gaulle; national security heavily depends on a country's military power and its own high authentic and technology oriented national defense industry [2].

Although Turkey targets to have high technology and technological independence within this concept, it has been failed to reach this target. For this reason Turkey has generally preferred to carry out a foreign capital policy which includes forming a kind of multinational consortium with foreign companies in defense industry. As a result, there are not many numbers of projects which include high technology or based on an authentic product, apart from some attempts related to national sources and exceptional cases [3]

- Ignoring the importance of defense industry in a certain period of time,
- Lack of common insight in technological objectives and long term strategical plan,
- Not to develop supply systems in terms of having an authentic technology,
- Because of grants, not to intend developing new products might be listed as the main reasons in this situation [3]

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During the recent years, in order to overcome this negative situation, Turkey has targeted to increase the number of its own national defense systems and determined the coverage ratio of defense needs as 50% within Turkey until the end of 2010 [4]. This objective was reached in 2011 nevertheless [5].

National, authentic and high technology is needed while providing defense systems. In order to have this kind of technology, scientific researches should be built on military needs and provided by research and development. However, most of defense products are produced according to foreign designs and manufacturing technologies [6]

A powerful defense industry could be developed by the projects in which at least the critical components are supplied within a national project. Moreover, marketing of these products to other nations and being economically proactive in international area should be the strategic objective [3].

2. Main Contractors within Defense Industry and Current Projects

Together with the developing technology, Turkish companies have started to undertake different contractor responsibilities in complex and large scale defense projects. These projects both have technological and administrative difficulties in terms of reaching the objectives. These difficulties do not only pertain to Turkey. The average rise of incremental costs is 29% in large scale American defense projects [7]. For instance, although American Air Forces planned to purchase 381 F-22 planes, they were only able to have the budget to purchase 183 [8]. The main reason of supply problems in America was that they could not identify the project needs clearly and started to develop the product before research and development phase [7].

In Turkish Defense Industry, Forward Air Control Plane (Boeing), Maritime Patrol Aircraft (Thales), Mine Hunting Vessel (Abeking Rasmussen-Lurssen Werft), M60 Tank Modernization (IMI), Tank Fire Control System (ASELSAN) projects are could be given as examples in which serious delays have been experienced [7].

3. The Experience of Project Problems of Turkish Defense Industry

FNSS was faced with the problems of insufficient specification, indefinite acceptance conditions, qualification, many numbers of subsystems, inexperienced contractors and customers and developing designs within the contract in its armoured combat vehicle project between 1989-1999 and 2000-2004. However, when the projects conducted with Malaysia has been examined, it is seen that comprehensive technical specification and acceptance conditions are determined in the beginning of the project and technical committee meetings are conducted regularly; thus a limited number of modification have been made in the project [7].

Although ASELSAN company has taken concrete steps in quality management, underexplained tactical and technical needs in contracts, insufficient and wrong predictions of

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time, supply and contract related issues which are not prepared according to the features or maturity level of the project are the main problems in defense projects in Turkey [7].

The main problems that TUSAS company confronts are expressed as not conducting the subcontract in parallel to the main contract, negative changes affecting the programs in terms of time and budget, recurring demands of different departments in project management and reporting [7].

4. The Minimization of Problems of The Projects In Defense Industry

The project performance equals to triple functions consisting of time, budget and technical/quality performance. Any occurring problems in one of them affect the total performance of the project and the problems could not be tolerated with the other advantages in other functions (HAVELSAN, 2007). On the other hand, the internal factors of a successful project are solid substructure, ability to manage substructure (Project management) and executive support. The factors of a solid substructures are quality assurance and testing [7].

4.1. Meeting the expectations: Quality control

“Quality” is defined as no difference between the standards and specifications in the beginning and after the procurement of the project [9]. In our day, quality control has gained significant importance and quality assurance and codification become a part of daily life [3]. In this context, quality certification applications have gained importance for defense industry as well. While aiming to regularly increase the level of meeting the needs of defense industry within the national sources in strategic plans, applying the national and international project standards to these defense projects should not be ignored. This standardization should not be an application which is only based on documents but a dynamic process consisting of periodical examinations and a high level of feedback. These processes should be supported by international military and/or civil authorities [3].

4.2. National test centers

Testing infrastructure and capabilities of public institutions, national and foreign contractors are being used for the current defense procurement projects. Mentioned testing infrastructure and capabilities are considered to be insufficient for authentic national systems projects and verification tests. Therefore gaining capabilities of testing and assessing to be used during and after production process of defense systems produced by the defense industry is one of the priorities [4]

Tests considered to be critical or increasing the effectiveness of expenditure which must be performed nationally in the country are those:

Environmental Test: Scaling of the durability of defense systems to environmental conditions

- Air Platform Test: It will help test manned or unmanned aircrafts for the certification of flightworthiness.
- Land Platform Test: It will help perform the physical tests of land platforms in order to carry out the feasibility studies.
- Naval Platform Test: It will help perform the physical tests of naval platforms in order to carry out the feasibility studies.

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- Firing Test: It will provide testing capabilities of rocket, missile and ordnance.
- Electronic Warfare Test: Electronic warfare systems' performance and effectiveness tests will be done
- Satellite Test: It will provide service to all the current and future satellites will help collect information and develop human resource.
- Software Certification: Software products developed for defence industry will be tested, and product software developments process will be assessed and documented [4].

5. Conclusion And Suggestions

At the present time developed countries decreased their external dependence and had got a corner on the market of international defense industry by using their national resources and technology. Turkey as well has aimed to increase the ratio of national resources in the defense expedition over 50% however succeeded in 2011 [5].

Defense industry has become more complicated as technology and information systems invloved in more defense projects. Therefore in defense projects, all three basic functions (cost, calendar, quality/technic performance) had deviations from objectives. In order to minimize these deviations:

- There should be independent quality inspections in defense industy projects. In order to execute these inspections Turkish Standarts Institute (TSE) and Turkish Accreditation Organization (TÜRKAK) should work in coordination for establishing independent and defense project experted organizations.
- National test centers should be established in order to perform tests in critical defense industry areas. Those centers should also provide support in case of neccesity to test the product in every phase of producing process.

It has been understood in this study that one of the most important issues of the defense industry projects is the lack of personnel specialized in project management, contract management, quality management and law. It is considered that discussing the personnel issue in project perspective will make a major contribution to this study as well as other defense industry studies in Turkey.

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PERFORMANCE-BASED SERVICE ACQUISITION

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Abstract:

The purpose of this paper is to explore and analyze Performance Based Service Contracting (PBSC) and provide a clear description of PBSC to Department of Defense policy-makers. This Paper includes background information about PBSC, benefits and challenge of PBSC and recommendations (based on the findings) to the defense policy-makers for the implementation of PBSC. The ultimate goal of this paper is to serve tax payer by introducing a new contracting method to save money and increase the quality of service that is procured from the private sector.

Key words: PBSC, Service, Acquisition, Contracting, Outsourcing, Procurement Concept

1. Introduction

We live in a commercial world in which most government agencies and commercial firms conduct business with one another. Today, the world is very competitive and no agency or firm can do everything own its own. They usually use outsourcing to perform their mission, and their primary tool for outsourcing is service contracting. These contracts provide a wide range of services that touch upon many or all of a given agency's activities. These include health care, support to intelligence activities, contracting support, and various professional, management and administrative services such as budget and program management. In addition, service contracts provide a wide range of support to U.S. troops in Afghanistan and Iraq, including base support, weapons and equipment maintenance, communication support, interrogators, security, engineering support, and administrative support (United States Government Accountability Office, 2009).

However, it is difficult to ensure that the government gets the best value for the taxpayers' money and obtains quality services in a cost-efficient and effective manner in every service contract. Every contract has risk that the government may receive products or services that are over budget, delivered late or of unacceptable quality. To deal with these kinds of problems, Performance-Based Service Contracting (PBSC) may be a solution for government agencies when procuring services from the private sector. PBSC has been developed and mandated in the United States. "Performance-based contracting methods are intended to ensure that required performance quality levels are achieved and that total payment is related to the degree that services performed meet contract standards. The theory of performance-based service contracting is that it improves the quality of services, results in cost savings, maximizes competition and innovation, and shifts the risk from the government to industry because the contractor is responsible for achieving the objectives" (Department of Defense Inspector General, 2007). In this procurement concept, agencies just describe their needs in terms of what is to be achieved rather than how it is to be performed.

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2. Background and History

With the growth of services contracting, government agencies began to explore new acquisition techniques in order to obtain services in a better way and focus on results rather than processes to get best value. They also wanted to benefit from industry's experience and innovations. Contracting authorities try to find a new way to improve flexibility, increase responsiveness, decrease costs, reduce risk and allow the organization to focus on their primary functions. The pursuit of new acquisition procedure led to the emergence of performance-based contracting. Performance-Based Contracts (PBCs) have been around for more than 20 years and have been used to acquire quality goods and services. In 1991, the federal government mandated that government agencies use them.

PBSA is a kind of performance-based contracting method to acquire service from the private sector. It was pioneered within the Department of Defense and then expanded to the whole government. PBSA officially became a current issue in the Federal procurement environment after Office of Federal Procurement Policy (OFPP) Letter 91-2. With the release of this policy letter, use of performance-based services acquisition has been reinforced at several levels throughout the federal government. PBSA became the prime federal procurement method during the Bush administration, which emphasized performance as a key focus of its management agenda. The President's Management Agenda, announced in summer 2001, has focused on results and made agencies accountable for meeting the goals and delivering the services to the taxpayers they serve (Yabusaki, 2008). That is why, during the Bush administration, PBSA became the preferred method of procuring services from the private sector. The Administration encouraged agencies to use this method. According to the Office of Federal Procurement Policy, agencies increased their PBSA from 26 percent in 2001 to approximately 45 percent of all contracts in 2007 (Newell, 2008).

During the Bush administration, PBSA became the preferred method of procuring services, with yearly Executive Orders setting PBSA performance goals to continue to motivate agencies to use the PBSA strategy on eligible service actions. According to the last order, released on 5 December 2007, the Fiscal Year 2008 Performance-Based Acquisition Performance Goal was increased from 45 percent to 50 percent.

The growth in performance-based acquisitions brought some problems. Some agencies fell behind the initiative's goals due to lack of training. PBSA was very new and totally different from traditional concepts. The acquisition workforce needed training about this new procurement concept. That is why OFPP adopted the Seven Steps Guide as the "official" guide on this issue. This guide was adopted to help agencies reach the goal laid out by the Administration. PBSA has now been used more than 20 years as an effective tool to acquire services in the United States. There are some challenges and problems stemming from implementation and the contract management process. These will be mentioned in following chapters.

3. Implementation in U.S.

The GAO (2008) stated that, "Over the last decade, the use of federal service contracting has increased and now accounts for over 60 percent of federal procurement dollars spent annually" (p. 5). In the DoD, 53 percent of contract spending is for service acquisition. But we cannot say that the Federal government gets the best value in every service contract. In service acquisition, the main objective is to get the right service, at the right time and in the right manner. The services obtained should meet cost, schedule, and performance requirements. If PBSA is successfully implemented it can help improve service acquisition outcomes and ensure that the services obtained meet cost, schedule, and performance requirements.

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The most important part of every system or process is the implementation or operation step. With the help of the implementation and operation process, we can easily identify the pros and cons of the system or the process. An excellent solution in theory may be total failure in practice. This rule is valid for the public procurement process. Sometimes enacted regulation by the parliament or senate is not practicable and causes unpredictable problems. Implementing a system that belongs to another legal system or culture in our own system needs careful study since every country has unique characteristics and regulations that can form obstacles.

PBSA was developed but this acquisition concept has not been fully implemented government-wide for a variety of reasons, including lack of knowledge and cultural resistance to changes. To overcome these problems, OFPP adopted the Seven Steps Guide as the "official" guide on PBSA.

The purpose of this guide is to assist agencies in implementing PBSA. The steps are logical and easy to understand, each building on the previous, and they provide guidance to agencies that enables them to move forward in this new paradigm. This guide describes performance-based service acquisition using seven steps.

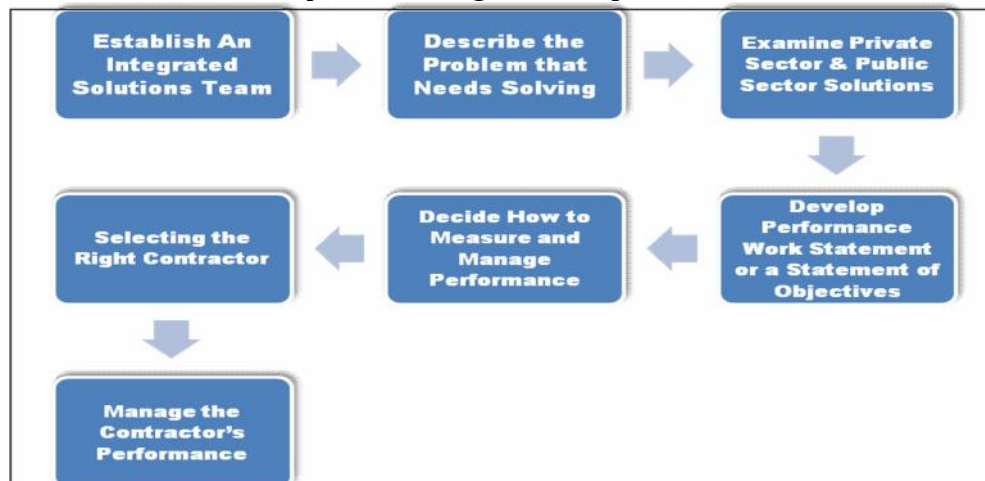


Fig.1 Seven Steps to Performance-Based Service Acquisition

The seven steps are described below:

- **Establish An Integrated Solutions Team:** An Integrated Solution Team must be established. The Integrated Solutions Team is responsible to assure that the acquisition program satisfies legal and regulatory requirements, meets the agency's intended results, is consistent with the agency's strategic goals and remains on schedule and within budget.
- **Describe the Problem that Needs Solving:** The clear description of the problem that needs to be solved should be made in this stage. The Integrated Solutions Team should focus on what outcome is required rather than what resources are required.
- **Examine Private Sector and Public Sector Solutions:** Once the acquisition's intended results have been identified; the Integrated Solutions Team (IST) should begin to examine both private sector and public sector solutions. This is called "market research," and it is a vital means of arming the team with the expertise needed to conduct an effective performance-based acquisition.
- **Develop Performance Work Statement or a Statement of Objectives:** In the previous three steps, the Integrated Solutions Team has determined the agency needs and conducted market research. Now, the Integrated Solutions Team has the knowledge and expertise to state the specification for service acquisition. There are two ways to develop a specification for a performance-based service acquisition.

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One of them is a performance work statement (PWS) and the other one is a statement of objectives (SOO).

- **Decide How to Measure and Manage Performance:** In most cases, the success of an acquisition is based on the management of the contract. To manage a contract successfully, some plan and measurement techniques are essential. It is needed to ensure the government receives the quality of services called for under the contract, and pays only for the acceptable level of services received.
- **Selecting the Right Contractor:** This step involves developing an acquisition strategy that will lead to selection of the right contractor who provides the best value for the desired service. One important factor in selecting the right contractor is to describe the problem that needs to be solved. The other important factor is that all the offerors have adequate information about the requirements and performance-based strategy.
- **Manage the Contractor's Performance:** As stated in GAO's (2006) report, service acquisition differs from product acquisition in several aspects and needs close and detailed control of contractor performance. The success of the acquisition is largely based on the management of the contract. That is why agencies should allocate sufficient resources to ensure the contractor performs in accordance with PWS.

4. Benefits And Challenges

The aim of the service acquisition is to obtain the right service, at the right price, in the right way and from the right supplier. This point is very important today, as the federal government outsources more goods and service to carry out its operations. There are different methods to reach this goal. The Performance-Based Service Acquisition is not a perfect solution but is a preferred acquisition method when getting service in the Federal acquisition environment. It has been used for more than twenty years and mandated for Federal service acquisition. Naturally, as with every system or process, it has benefits and challenges. In some cases, it is a convenient tool to get best value for taxpayer money. But in some cases it is too difficult to implement this acquisition concept.

Scholars have noted that there are many reasons that federal government agencies use PBSA, with its benefits and better solution. The Office of Federal Procurement Policy (1998) study on performance-based contracts for service acquisition showed that benefits including reduced acquisition cost, increased competition for contracts and improved contractors performance had been achieved. One important benefit of PBSA is to enable government to pay contractors based on outcomes and performance rather than the process used to deliver services. It ensures that taxpayers are receiving the best value and contractors are paying for what they performed. Another benefit of the PBSA is allowing greater competition to produce better solutions. PBSA allows contractors to offer their solution and performance measurements. Contractors prepare their solutions by taking into consideration governments' requirements, price and competitive market forces. Contractors seek the best solution that meets the requirements at the lowest cost. Mather and Nelson (2006) stated that government can get good competition, reasonable price, better technical expertise and good QASP from serious and experienced offerors.

When properly structured, PBSA allows government to reduce cost and increase service quality. PBSA offers the Federal government significant gain in cost savings, contractor responsibility, and better performance, while also reducing quality shortcomings and customer satisfaction. FCS Group (2005) identified more benefits in its literature search. The followings are the expectations and benefits of PBSA:

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- Encourages and promotes contractors to be innovative and find cost effective ways of delivering services
- Gives the contractors more flexibility in general to achieve desired results
- Shifts risk to contractors so they are responsible for achieving the objectives
- Maximizes competitions and innovation
- Results in better prices and performance
- Expects contractors to control costs and achieves cost savings
- Encourages contractors and government to work together to provide the best service to customer
- Eliminates day-to-day monitoring
- Allows government workforce to focus on outcomes of the contract

Although more than twenty years have passed and lots of training support has been provided, General Accounting Office reports and OFFP studies show us that there are implementation problems, challenges and unsatisfactory performance results from PBSA. These problems and challenges identified in reports and articles not only affect the government side but also deeply affect the contractors and industry. These challenges and implementation problems affects the government's ability to get best value for the taxpayer dollars spent. Unsuccessful implementations also prevent government from benefiting from the creativity and innovation of private industry. For more than twenty years, agencies have been encouraged to use PBSA but the government has not reached the intended level of progress. PBSA is well suited to those simple and routine service acquisitions that are well defined, but it is difficult and challenging when procuring complex and long-term services that cannot be defined clearly at the outset of acquisition.

FCS Group's (2005) study, "Best Practices and Trends in Performance Based Contracting," is one of the articles that raised concerns related to PBSA and identified a variety of issues and problems when agencies use this acquisition concept. The following are the important problems and challenges:

- Poor requirements and definition of performance measures
- Lack of skilled and trained acquisition workforce
- Lack of coordination between agencies' departments and experts
- Inadequate oversight of contract
- Misunderstanding that PBSA takes more time than traditional methods
- Difficulties of giving up old habits
- The fear of change and resistance against new acquisition approach
- The perception that performance measures are difficult to understand and complicated to implement
- Trying to implement all kinds of service acquisitions
- The shift of emphasis from process to outputs
- Lack of knowledge about performance-based acquisition
- Lack of communication between contractors and government

To this point, the implementation of PBSC has been analyzed; its benefits and its shortfalls were stated. It can be said that this procurement concept has more benefits than its challenges. It has been used successfully in the U.S. But to determine its applicability to any other country it needs to examine current rules and regulations. After that it will be easy to come to a conclusion and reach a clear determination if there is any barrier to implement PBSC in any country.

5. Conclusion

PERFORMANCE-BASED SERVICE ACQUISITION

In service acquisition, the main objective is to get the right service, at the right time and in the right manner. The services obtained should meet cost, schedule, and performance requirements. If PBSA is successfully implemented it can help improve service acquisition outcomes and ensure that the services obtained meet cost, schedule, and performance requirements. This is because PBSA describes outcome-oriented requirements, measurable performance standards, and quality assurance surveillance plan. Some of the other important objectives of PBSA were articulated by the United States Department of Defense (2000). DoD emphasized that, by describing requirements in terms of outcomes, agencies can help achieve the following objectives:

- Maximize Performance
- Maximize Competition and Innovation
- Encourage and Promote the Use of Commercial Services
- Shift in Risk
- Achieve Savings

Although PBSC helps the government side to save money and increase quality, it is difficult to use this procurement concept for the complex services that are not well defined at the early stage of procurement. Unlike the traditional procurement methods, PBSC requires cultural changes and more training. This training and cultural transformation needs time and will be gradual. It is clear that moving to performance-based service contracting may take time, since a major shift in government procurement process and contracts administration is not going to happen immediately.

Based on findings from previous chapters this paper recommended that it is time to consider PBSA as an acquisition solution in the defense environment when procuring services. PBSA is a new concept for the defense acquisition workforce and may cause risks and problems. But if the importance of PBSA is understood, these risks and problems can be solved and solutions can be developed to overcome challenges. The PBSA concept has great potential to facilitate service acquisition activities and increase quality in the defense procurement process.

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AUGMENTED REALITY IN MILITARY TRAINING AND EDUCATION

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Abstract:

In recent years Augmented Reality (AR) has become widespread throughout the world and is used to make world easier. It is the combination of the real world and the virtual world. Augmented reality (AR) is a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data. It enhances one's perception of the world by giving him/her valuable information. In this article we will discuss the applications of AR and its military applications and its advantages in military training and education by using it in military brochures, manuals and in the field.

Key words: Augmented Reality, education, military, training, virtuality.

1. Introduction

In military, it is very hard to simulate military subjects to the people who haven't seen them before. However with help of AR it is very easy, cheap, and quick to explain it all. For example how one can explain mechanized and armor units' movements or tactics to someone who has never seen them before? Likewise some topics can't be easily described. There are two ways. One is to take personnel to the field and take out all units which will carry out the duty and make them to do the job each time. This will be very costly on some occasions. And the other way is to explain it with help of Augmented Reality, which is easier, cheaper and quicker. Then what is Augmented Reality?

2. Definition

Augmented Reality (AR) is a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data[1][2]. As a result, the technology functions by enhancing one's current perception of reality. By contrast, virtual reality replaces the real world with a simulated one[1].

3. Applications of Augmented Reality

AR is widely used by a number of fields in daily life. For an instance a mobile AR application guides you on your touristic travel by showing on the screen of your smart phone when you turn it up, down, leftwards, or rightwards the places to see, eat, entertain,

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and spend the night by determining your location by Global Positioning System(GPS) or Inertial Navigation System (INS).

In movies, special effects or real-animation composed films are created by help of AR, but the difference in movies is that AR applications are made beforehand. Likewise, in news business changing screens in weather maps is a typical product of AR. Reporter stands in front of a blank screen and it is augmented with computer generated maps seen by us[3].

In engineering and architecture AR is being used to see the product in real field before it is constructed. With AR, an architect will be able to see the building he designed if it is suitable for that area, line of sights of each apartment; or even he can show the building and the apartment rooms to the customers who can walk around in an apartment beforehand.

In publishing, the feeling of the reader about a book may be enhanced by putting in it an AR. The application can be effectively used in lessons. Some newspapers use AR in order to communicate more visually with their readers by putting a marker which is perceived by the application is placed on the page, and as it is seen, the application starts automatically and visual and audio related to the news is serviced. Likewise, a reader may able to see the characters and even some scenes of a book in 3-D while reading an novel.

In medical, AR helps the surgeon to compare the imaging such as MRI and CT by showing necessary internal anatomy. In a continuing operation, AR can show where to look, cut, and suture. Neurosurgery is at the forefront when it comes to surgical applications of augmented reality. Since the brain is more complicated than the other parts of the body, the registration of exact coordinates can be achieved by help of AR[4].

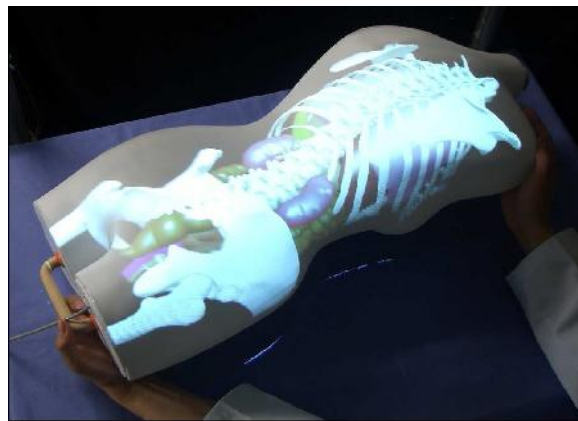


Fig.1 The Virtual Anatomical Model uses real-time adjusted projection of internal organs onto human-shaped surface. Both the viewer's head and the manikin object are tracked in real time, which allows students to handle the display and examine if from different angles [5].

In maintenance and repair, a mechanic can learn how to repair, break and reunite a device or machine without looking up its manual. It is achieved via tablet PCs, smart phones, AR glasses, or by an AR application installed computer [6].

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Fig.2 Augmented Reality in Maintenance and Repair [6].

In museums there are Near Field Communication (NFC) systems which send signal to the mobile device carried by the guests in its vicinity and the device starts an audio application. This system can be applied with AR. In this system NFC system device is to be placed on for example in an area taken place great wars. When an AR application installed tablet PCs, smart phones or AR glasses are gets near to NFC system, the user will be able to the war in 3-D on the real scene. This method will help the guests to comprehend the war thoroughly.

4. Military Applications of Augmented Reality

AR is being widely used in military in order to make the soldier's life in the field easier, to train him, and to get advantage against his current or potential enemies. An AR system mixes computer-generated graphics (or annotations) with the real world. The annotations can provide information aimed at establishing situational awareness or to provide realistic training for such scenarios. The design of the user interface of a mobile AR system presents a unique set of technical challenges. An AR display must be capable of automatically deciding what annotations need to be shown. Or, in the training applications, the virtual opposing forces (OPFOR) must appear and behave realistically[7].

The important thing is to filter the data which will be delivered to the personnel in the field. Filtering must be done by an automatic program which determines the level of the personnel and sends critical data for his/her level.

4.1 AR Applications in Military

4.1.1 Augmented Maps

The most important issue for the headquarters personnel during an ongoing operation is to pursue the intelligence outputs which determine friend and foe units' position on the scene. This subject is important for the commander to visualize the war scene and to decide. 3-D programming is used to produce an augmented map[8]. In order to enhance the situational awareness of the commander, on an AR map, the personnel wearing AR glasses are able to watch the map and the friend and foe units' position in 3-D. It is essential to make a mediator program that sends the updated information immediately. Likewise, it becomes easier to plan an operation with augmented map. Land characteristics, the effect of the seasonal weather on the units' movements can be shown in the augmented map. Thus a realistic vision of the region can be possessed.

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4.1.2 Training

An application in military is trainings, in which soldiers wear AR glasses, and a vest with sensor devices, and takes his training rifle. In a real world and real scene come virtual enemies which he tries to extricate himself from and tries to kill. An INS (Inertial Navigation System) or GPS (Global Positioning System) device is to be installed on the AR glasses in order to determine the position of the soldier. It is essential to determine the exact position of the soldier is when he is standing, crouching, or lying.

Another training method is done as a team or squad. Team/Squad members are being trained as a group member and learn to play his role in his group. This method may be assisted with paintball.



Fig.3 Two Simulated Forces in an Office Environment[9]

4.1.3 Real Operations

In real operations a soldier wears AR glasses will be able to get information of the formation of his team or squad, and position of friend and foe units even if he cannot see them with his own eye. Required information will be delivered by headquarters to the soldier in the field. The soldier will be able to see the images of UAVs (Unmanned Aerial Vehicle) and UGVs (Unmanned Ground Vehicle) as well. It is crucially important for the headquarters to deliver the right information to the right unit on the right time. Here are some assumptions may be useful to overcome this difficulty by Simon Julier and others:

1. Any object of any type can, at any time become sufficiently "important" that it must be highlighted by the system.
2. Certain types of objects (such as the location of enemy forces) are extremely important and should be known by all users all the time.
3. Some objects (such as way points or objectives) are only critical to the mission profile of a particular individual.
4. If an object has no "special properties", it should exhibit the following default behavior. The environment surrounding the user is known in the highest detail possible. As distance increases, the user might want to know progressively less and less information. At a significant distance, might only have the critical landmarks as well as the locations of known friendly and enemy forces [10].

4.1.4 Fighter Planes and Military Vehicles

In fighter planes and military vehicles AR is an excellent aide. The information is shown on the windshield of modern fighter planes or visor of the pilot's helmet[4]. In

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military vehicles the information is shown on the windshield of the vehicle. This information includes the mechanical data of the vehicle and the friend and foe units' positions as well as directions to move.

4.1.5 Military Field Manuals and Brochures

In military, it is not easy for personnel to understand several subjects about operations, logistics, weapons, military vehicles, or services. For an instance, they cannot clearly visualize the tactics unless they see or exercise it. Repetition of all the tactics just for teaching personnel each time requires time, money and labor.

Instead, with an AR application installed on a computer, it will be simple to comprehend the subjects explained in military field manuals and brochures. For example, personnel will be able to watch in 3-D the settlement, tactics, and logistics of the units when they are reading the related page. So, these subjects will be understood thoroughly in a short time in comparison with exercising it in a real scene.

In order to start the application when reading these methods can be used:

1. It is possible to place tags which can be recognized by the application on the related page. In this way, whenever the application sees, it recognizes the tag, will show and tell the explanation written in the manual.

2. Page DNAs can be determined, and each page or a part of a page can be defined as a tag to start the application. It is nearly impossible to face a confusion problem.

3. Page numbers of each manual can be defined as a tag to start the application. A possible problem is that each manual or brochure has the same page number. In order to solve this problem, different applications may be started for each manual or brochure.

In order to put AR applications into practice these methods can be applied:

1. An AR application program may be installed on intranet computers used in military. By this way, with a camera plugged in computer, the program will be able to recognize the tag on the page and display the explanation in 3-D.

2. In headquarters of military units, there can be rooms for computers installed AR applications. Personnel, individually, or in teams and squads, can learn, watch, and listen the subjects written on the manual. Furthermore, he will even plan operations in these rooms on operation maps seen in 3-D.

3. Applications can be installed on smart phones, tablet PCs, and PDAs. With this way personnel will turn the camera of the device to the page and see the AR explanation.

4. With AR glasses, the subjects explained in manuals can be seen even in real scene. GPS (Global Positioning System) and INS (Inertial Navigation System) will detect the position of the personnel and use the real scene to show the explanation.

5. Bionic lenses are being developed. If produced and used widespread, they will be able to wear by the personnel and help them to see the world through AR.

5. Contribution of Augmented Reality to Military Life

In this essay, military applications, especially in military field manuals and brochures, of AR, which has many fields of usage, and its advantages are assessed. Augmented Reality applications have made an innovation in military as they have made in many fields. As the technology improves and AR applications are widely used, a concept is

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going to be constituted and it will made opportunity to the countries which have AR in military effectively in the battlefield.

Surveys show the learning methods of human beings revealed that 79% of learning is via perceiving. With AR, written expressions will be supported by visual objects, and thus understanding level of the personnel of a specific subject will go up. Consequently, personnel will learn and grasp the subjects in shorter time in lower price and lower labor.

But it must be clearly understood that the AR applications are all means to help people to ease their daily life, but cannot solve all the problems of it. For an instance, AR applications help a soldier in the field to train and realize his whereabouts, but do not kill his enemies instead. Likewise it shows the parts of a weapon and how to aim; but doesn't show the feelings when it is grabbed, pulled the trigger; or whether shot exactly in correct way. So, as an aide for life, AR applications are became more widely used.

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**YOUTH POVERTY, VIOLENCE AND SMALL ARMS
PROLIFERATIONS IN NORTHERN NIGERIA: CASE
STUDY OF POLITICAL THUGGERY IN BAUCHI**

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Abstract:

Poverty and violence have eaten deep the polity of Nigeria. This is evident from the fact that economic situation of the country is faced with numerous challenges. The paper is an attempt to investigate whether small arms proliferations in northern Nigeria have economic and political causes. It becomes a fashion among politicians to mobilize unemployed youth for political and socio-religious disturbances in order to actualize their personal gains. Part of the outcomes of the problem is the spread of arms and ammunitions among political thugs which also left majority of the populace in a state of terror. The paper has explained the influence of poverty on youth restiveness in the Northern part of Nigeria, particularly its implications on proliferation of small arms. It is obvious that such phenomenon can be a threat to national security of the Nigerian state. The situation also is becoming worrisome to policy makers. As such, it has been argued by this paper that, systemic improvement in governance is necessary to strategize policy framework to address the menace and reduce possibility of complicating the situation. The essay concludes that Nigeria may have been tends to become more vulnerable to separatist violence and risks of instability like the one we are witnessing in the 21st century north eastern states.

Key words: Youth poverty, proliferation, small arms, thuggery, violence, unemployment, Boko Haram,

1. Introduction

Nigeria is one of the oil producing countries in the world, endowed with both human and material resources for national development. The country like most developing nations of the world is faced with a myriad of developmental challenges, which include poverty, unemployment, conflict and disease. These situations pose great challenges to the very existence of individuals in most of the communities (Sanusi, 2012). Therefore, it is assumed that with democracy, people would be better off in terms of their well being. However, the reality on ground has demonstrated that majority of the people in Nigeria has suffered from abject poverty and severe hardship. In the northern region, the situation of youth poverty and unemployment has become a source of worry to policy makers and stakeholders. Hence, nothing concrete has been done to improve the economic hardship. Odey and Agba (2010), states that, the present democratic dispensation in Nigeria is now a decade, however, Nigerians still do not seem to be enjoying democratic peace as poverty and underdevelopment abound (pp. 147).

The increasing economic marginalization of youth and failure to fulfill the socio-economic needs of the people has led to frustration as well as increasing the high level of social insecurity among the inhabitants of the region, particularly the communities of Bauchi Metropolis. Shehu (2011), states that, the implications are that this army of unemployed could easily be lured into any negative tendencies and are in fact ready to be recruited for any social activity. This paper linked the problem of insecurity in Bauchi

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State with increasing level of youth poverty which led to the formation of armed groups in the name of *Sara Suka* in order to actualize the interest of the ruling class. It is against this background that use of small arms proliferated in conflicts and violent acts perpetrated by the so called political thugs, which really undermine human peace and security in the country. The state of insecurity and lack of social justice had also become source of worry among the inhabitant of the state, considering the fact that government lack political will to bring those perpetrators to justice. Numerous human rights violation and killing of innocent people have been a daily routine in the state metropolis; this has led some groups to engage in and try to influence the political process themselves (Hazem and Horner 2007 pp. 3)

2. Poverty and Unemployment Situation in Northern Nigeria

Nigeria is the most populous country in Africa, “with about 70% of its population lived on less than \$1 dollar per day” (Duggan, 2009 pp. 1). Moreover, it is an established fact that, the northern region is having the largest number of poor people. According to National Bureau of Statistics (NBS) the Nigeria’s relative poverty has increased to 69% (or 112, 518,507 Nigerians). The North-West and North-East geo-political zones recorded the highest poverty rates in the country with 77.7% and 76.3% respectively in 2010.

Table1. Incidence of Poverty by Zones using different poverty measures (%)

Zone	Food Poor	Absolute Poor	Relative Poor	Dollar Per Day
North Central	38.6	59.5	67.5	59.7
North East	51.5	69.0	76.3	69.1
North West	51.8	70.0	77.7	70.4
South East	41.0	58.7	67.0	59.2
South-South	35.5	55.9	63.8	56.1
South west	25.4	49.8	59.1	50.1

(Sources National Bureau of Statistics (NBS) Nigeria Poverty Report Profile 2010)

Based on these indicators, one can insinuated that the poverty level has increases and might have come out with possible repercussion. It is also fundamental to note that, youth poverty in the region is largely as result of high level of unemployment among the youth and lack of good governance. In most cases governments and public institutions operates without consideration to youth unemployment and the existing economic hardship. Economic decline and absence of employment opportunities, especially as inequality grows, likewise drives conflict. As elsewhere in Nigeria, the north suffers from a potent mix of economic malaise and contentious, community-based distribution of public

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resources (International Crisis Group, 2010). But there is also a specifically northern element. Therefore, the situation of growing number of youth unemployment persists with disastrous effects on polity. According to the 2011 unemployment rates released by the National Bureau of Statistics (NBS) Zamfara, Bauchi and Niger states are worst hit by unemployment in the country. And the youth are the most affected considering the fact that about 80% of the active population are jobless, meaning that an estimated 32,504,000 active youths are totally unemployed (Leadership, 2012). This is not only a tragedy to the political system, but a violation of human right and human security. Garba (2010), states, youth unemployment, especially male youth unemployment, makes it profitable to recruit youth combatants and to initiate them into violence (pp, 40).

2.1 Economic Marginalization, Youth Poverty and Violence: A nexus

Studying gangs and violent acts against humanity can no longer be limited to local conditions but must also be related to economic relations internationally. The unprecedented neoliberal economic policies have put states under pressure of free market economy and monetarism. Thus, the process led to the marginalization of others mostly people of youthful ages. That is why disadvantaged groups within societies, and some societies as a whole, especially in developing countries, are excluded from the fruits of globalization (United Nations, 2000). There exists high level of international inequality in world trade and financial markets hereby diminishing potential benefits to the poor nations as well as limiting benefits to the poor.

According to APSA Task Force Report on Difference, Inequality, and Developing Societies international economic inequality enables powerful countries to shape the growth of global markets in ways that limit the benefits globalization might deliver to poor countries. However, hierarchies of status in the unequal globalised economy produce discrimination, marginalization, and outbreaks of violent conflict within developing nations (APSA, 2008).

Scholars argued that neoliberal economic policies and its attendant principles has affected greatly the weaker nation's economy which also resulted to massive socioeconomic upheavals and have created tremendous suffering for people of Africa and other third world countries (Jega 2007, Sanusi 2002, Kwanashie 2002). The Nigerian experiences have shown high level of interface between bad economy and human poverty. Part of the problem is lack of public investment and poor electricity supply, thereby leaving the work force out of jobs. Problems of governance also have contributed to raising poverty level among youth. Through in depth interview, I realized that marginalization of youth from economic activities, directly or indirectly has systematic association with prevalence of poverty among youth that I interviewed. As Garba (2008) show the willingness of young men to participate in crises or conflict situation in some contexts depends on their income earning opportunities. Where this become a mirage while wallowing in unemployment and poverty, they are likely to join rebellion as an alternative way of generating income. Evidence of ethno-religious conflicts, post election violence and Boko Haram insurgency in places like Jos, Kaduna, Maiduguri, Potiskum Damaturu and Mubi demonstrates the challenges youth poverty pose on human security in the northern part of Nigeria. Onuoha states that, the prevalence of poverty, unequal access to resources, large youth populations with limited access to education or jobs, and other socio-political

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factors contribute to conflict and instability in the Niger Delta region, as well as other parts of Nigeria (pp, 113).

Since the return of Nigeria to democracy in 1999, the political system became overheated with competitive partisan political activities through which groups are exploited against opponents. The most common practice is bringing together violent youth gangs and militias to form a group fully armed for violent act and conflict (Jega 2007). It is thus that, the ruling elites were blamed for the present condition the northern region is in, especially in the incremental lost of legitimacy with the ever-increasing hopeless population of youth. In explaining why northern leaders failed, late President of Nigeria, Alhaji Umaru Musa Yaradu'a attributed the backwardness of the north to the failure of its leaders to uphold the legacies and values of qualitative leaders like the first Premier of the then northern region (Shiklam, October 2008). Poor governance, economic inequality, entrenched poverty and social injustice were perceived by many scholars to be the major sources of social tension, violence and crises in northern Nigeria (Lewis 2011, Okafor 2011, Sanusi 2012, Odey and Agba, 2010)

Many anti-social activities such as political thuggery, militancy, restiveness and other social vices evident among the unemployed and joblessness youths are real dangers to the stability of democracy in Nigeria (Okafor 2011). Virtually every state of the federation are affected with this social vices, for instance this groups are identified as ***Sara-Suka*** in Bauchi, ***Yan- Kalare*** in Gombe, ***Ecomog*** in Borno and Yobe, ***Banu-Isreil*** in Taraba, and ***Yan- Shinko*** in Adamawa.

2.2 Use of Small Arms in Youth Restiveness, Violence and Crises

Small arms according to a UN panel of experts refer primarily to rifles, machine guns, hand grenades and other weapons used by an individual combatant. They are the instruments of modern violence, put to use by criminals and group gangs to maim and kill people in both armed conflicts and violent crimes. The prevalence use of small arms and machete in conflict situation and crises has become the source of social tension and instability in Nigeria. It is a well known fact that, political competition among politicians during election campaigns and reckless attitudes of ruling elites over wealth accumulation are the factors that trigger the employment of youth for social disturbances. Though the phenomenon is not only peculiar to one part of Nigeria, but is overwhelmingly concentrated and sustained in the northern part of the country. Krause (2011) illustrated that, trading in illegal arms is endemic all over Nigeria. But ethno-religious conflict in Jos has contributed severely to illegal weapons proliferation within the city of Jos and all over Plateau State as well as the manufacture of significant number of weapons locally. The author further lamented that, arms are not only financed and supplied by ethnic and religious militias, politicians, wealthy individuals, or traditional rulers, but also by local communities via religious groups or cultural and development organizations (pp, 2).

The use of small arms during elections in Nigeria has greater impetus on militaristic tendencies exhibited by the nature of politics in relation to prevalence of armed groups. It has become a fashion for politicians to sponsor these thugs financially and morally in order to achieve their personal political interest. Most a times they mobilize these thugs from beginning to the end of electioneering campaign/election period (Haruna and Jumba, 2011, pp, 111). Once the electioneering process is over, the armed groups popularly known as political thugs will be left with small arms in circulation thereby promoting arms

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proliferation and chances of committing crimes against humanity. It is against this background that former president of Nigeria Olusegun Obasanjo reported to have said that, the availability and wide circulation of small arms and light weapons pose the greatest danger to peace and security, especially in our West African region (Integrated Regional Information Networks (IRIN) 2006, pp 18.). The figure of casualties resulting from the ongoing Boko Haram insurgency in most of the northern states and the age- long ethno religious crises remains evidence for the proliferation of arms and ammunitions in the country.

**3. Political Thuggery, Violence and Small Arms Proliferations in
Bauchi**

Politics in Nigeria could be called the ‘politics of allocation’, through which electoral victory is intimately tied to access to the state as an avenue for wealth accumulation and conferment of status (Hazem and Horner 2007, pp 7). To assume political leadership and control over resources, politicians in the country perceived winning election a do or die affair. In their quest to control public office by all means politicians from different parties uses the disadvantaged groups mostly people of youthful age for political victory. In an interview with Sunday Trust newspaper, the Governor of Bauchi State Mallam Isa Yuguda lamented on the attitudes of politicians by saying that ‘some politicians believe the only way to manage people is to impoverished them (Sunday Trust, 2012 pp 4-5). Perhaps this may be the reason why tackling poverty and unemployment lacks stakeholder’s attention or rather political will in the state. Today as the state reels in social tension and insecurity, the general feeling is that political thuggery and armed groups violence perpetrated by youth have resulted in use of small arms and its proliferation, thereby leading to increase in the rate of crimes against humanity. Sara-Suka syndrome is fundamentally one of the challenges posing security threat both to the government and the governed, ‘losing billions of naira and thousands of personal properties’ (Kukah 2011, pp 16). Part of the criminal act of these thugs is the killing of police men, kidnapping, car snatching, theft and human right violation. Recently, Minister of State for Foreign Affairs expressed his fear over the growing access to light arms, saying that the country is suffering from the negative impact of proliferation of small arms. Pointing out that easy access to small arms and light weapons was the cause of militant activities in the country (Daily Trust September 26, 2012 pp 12).

According to Bauchi State Police Commissioner; the police command arrested over 100 ‘sara suka’ in the state with dangerous weapons (Daily Trust, August 30, 2012). These armed groups were accused of kidnapping top politicians in the state as well as killing innocence people working with them. In the month of September 2012 one former Comptroller General of Prison of was announced death in violent gun shots by unknown gunmen, also killing one of his security men and injuring others (Weekly Trust, September 22, 2012). Another violent act where same group where suspected to have kidnapped Muhammadu Usama a top politician in the state, demanding ransom. The gunmen were reported to kill his security guard and ran away with him.

Another problem that created tension in the national politics was the post election violence in the state where thugs launched attack on the Youth Corps members in some local government areas of which ten Youth Corpsers’ were killed (Shehu 2011 pp 10). Although

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violence and political crises is not new to the north, the killing of these 10 National Youth Corps Members has led to rejection of some states from the North. For fear of insecurity, about 6696 NYSC members reject the North (Daily Trust, October 2, 2012).

4. The Implications of Small Arms Proliferations on Human Security and Sustainable Democracy in Nigeria

The desire to have good government, peace and stability has been the major motivating factors people in the developing countries strived to have democracy as a system of governance. But, the Nigerian experience since 1999 when the country returned to democracy, have demonstrated a different political climate hostile to the environment and the populace. Wide spread of conflicts, politically motivated ethno-religious crises and social insecurity remains the main feature of the Nigerian political landscape. These are clear manifestations of instability and social tension that might have affects sustainable development and democratic peace. Idun (2011) states, democracy that seems to be a dream come true in Nigeria is fast turning to a nightmare (pp. 121). The security of life and property of people in the country is at stake, going by the security threat bedeviling the survival of Nigeria as a country. Parts of the challenges are the *Boko Haram* insurgency in the Northern region of Nigeria, the ethno-religious crisis and the growing number of armed groups using arms and ammunitions to perpetrate crimes and terror against human security. Hazem and Horner (2007) states that:

Armed violence is not a random event. Acts of armed violence in Nigeria are purposeful in intent and directed at key targets, whether economic or political. Armed violence is about more than oil, religion, ethnicity, or politics. In essence, such violence is about access to resources, whether through committing crimes, playing on communal tensions, stealing oil, or winning elections

Since 1999 to date, Nigeria is facing challenges of increasing use of small arms and its proliferation all over the country, violence emanated from a breakdown in governance and was instrumentalized by the diffusion of small arms into the society since the return to constitutional rule three years ago (Musah 2002, 239). The proliferation of small arms and light weapons is an immediate security challenge to individuals, societies, and states around the world and an enormous hurdle to sustainable security and development. Small arms fuel civil wars, organized criminal violence, and terrorist activities (Hogendoorn and Stohl 2010). It is thus that different regions in the country agitated for secession, while in other ends disrupting the socioeconomic life of the society and keeping them out of their productive ventures. With the growing number of violent crises and insecurity, democratic government in Nigeria has shown gross insensitivity in managing this negative development of arms proliferation. While in reality democracy cannot thrive in the atmosphere of insecurity and uncertainty (Gusau 2007 pp).

5. Conclusion

Nigeria in the 21st century have bedeviled with numerous challenges which is largely the result of poor leadership quality and social injustice. To effectively deal with the menace our leaders have to go beyond rhetoric and establishment of committees, but ensure rapid improvement of social infrastructure for job creation. Simply because,

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societies that emphasize meeting the yearning and aspiration of its teeming youth, especially in productive sector of the economy are likely to live in peace and harmony. The proliferation of small arms has trigger the escalation of violent conflicts and spread of armed groups throughout the country. Conflict over resources also brought in bad governance that adversely affects youth and put them out of jobs. Human security is deeply related to income generation, therefore youth issues pertaining to poverty and unemployment is calling for political attention globally in order to reduce global insecurity and terrorism.

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INTRODUCTION OF THE HUNGARIAN UNMANNED AERIAL VEHICLE OPERATOR’S TRAINING COURSE

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Abstract:

In today’s modern army we are facing several unmanned aerial vehicles for various purpose. The Hungarian Defence Forces has gone two different types of UAV¹s into service since 2010. Due to this reason it is essential to have well trained operators to run the UAS² in proper ways. The operator’s training is realized in frame of a military training course. In the article the authors introduce the current training courses, summarize the experience has gained during the training and make suggestions for further studies. The last part of the paper includes a brief insight into an ongoing R & D³ project related sub-area in Hungary.

Keywords: UAV, training course, New Széchenyi Plan, UAS, evaluation,

1. Introduction

In this paper the authors will introduce the various UAV operator training courses held in Hungary in the last years. It is important to clear the definition of UAV: “Once- or multi-useable, wireless controlled, powered aircraft, using aerodynamic forces to fly. Flying remotely controlled, autonomous or using combined management controls function, with the capability to carry lethal or non-lethal cargo.”[1] The goal of the courses was different but also a bit similar to each other. The main idea was to share the experience gained during the course planning and the answers for the different difficulties of the practical evaluation and course subjects.

2. Meteor 3-MA operator training course

At the beginning of 2010 it was clear the HDF will pull-out the L-39 Albatross light training and close support aircraft from the active service due economical reason. With the withdrawal the airplanes some of its main task still existed and it would not be cost-efficient to fulfil this missions with a fighter aircraft. To solve the problem the HDF let invent a UAV called Meteor 3-MA.

1 UAV: Unmanned Aerial Vehicle

2 UAS: Unmanned Aerial System

3 R & D: Research and development

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2.1. Meteor 3MA

The UAVs main task is to provide sacrificial, disposable but reliable targets for military exercises, training and live firing of MISTRAL self-guided surface to air missile system and its associated services without endangering human life, buildings and equipment with high reliability in a harsh military environment. The aerial target is suitable to train, and exercises the GBAD⁴ operators in special conditions [2]. It has the capability to simulate the flight path and the movement of a low flying, slow aircraft.



Fig.1 METEOR 3MA target UAV

2.2. Specification of the Meteor-3 target drone

- Purpose*: artificial air target, carrying special payloads in modular nose cone
- Application*: simulation of target for air defense weapon systems training or on the battlefield to reveal enemy's radar position
- Action radius*: 10 km
- Endurance*: 20 minutes
- Payload*: up to 3 kg
- Max altitude*: 2–3 km
- Flying velocity*: 130–140 km/h
- Wing span*: 2.7 m
- Length*: 1.8 m
- Empty weight*: 11 kg
- Propellant*: internal combustion engine, volume 30 cubic cm
- Fuel*: methanol, castor oil and secret additives
- Control*: PCM RC⁵, optional video and GPS⁶
- Take off*: catapult with winch
- Landing*: special reinforced skid

4 GBAD: Ground Based Air Defence

5 PCM RC: Pulse Code Modulation Radio Control

6 GPS: Global Positioning System

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- Wind speed limit: 40 km/h
- Weather condition: all Hungarian weather conditions, except heavy rain, snow or fog

2.3. Training program for Meteor 3 MA operators

The purpose of the training program was to give over general and specific knowledge to the operators and sufficient practical proficiency which assures the safe operation both on the ground and in the air. The program has been intended according to the 16/1998 DM-HM common decree about aircrews licensing and according to the 5/2003 DM decree about the specialized training of state aviation staff.

2.4. Determination of the curriculum

Based on the operational work on the drone, there are three different working posts: operator I.-UAV (drone) operator, Operator II.-Route planner, Operator III – technical support person. To secure the main goal of the training course we had to select the most important subjects for the different operator positions. There is a basic knowledge section which is compulsory for all the participants. It includes general information about the principles of flight, meteorology and rules of the air.

Subject Group	Subject	Number of lessons	
		Theory	Practice
I. Basics	Aerodynamics	6	
	Aircraft frame and systems	4	
	Engine knowledge	6	
	Control Engineering (automatics)	6	
	Air Traffic Services and procedures	6	
	Orientation in the air, Air Navigation	3	3
	Flight procedures	6	
	Aviation meteorology	5	1
	Aviation medical knowledge	4	
	Aviation law	4	
	Radio- telephony operator basic knowledge	3	3
Altogether:		53	7

Table 1.

The next subject group is meant for Operator I., so called UAV pilot. He is responsible for the safe ground and air operation; he is the one, who controls the special features of the drone. The subject group contains the rules of documentation, flight safety issues and the special on board equipment in 30 lessons.

Subject Group	Subject	Number of lessons	
		Theory	Practice

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II. Device knowledge (Operator I.- UAV pilot)	Aircraft structure & Engine	6	2
	Rules of documentation	2	
	Control system	3	1
	Special on-board systems	3	1
	Flight safety	5	
	Air and ground operation	5	3
Altogether		24	6

Table 2.

The next kind of operator is the route planner. His responsibility is to set up the flight route according to the requested profile of the GBAD training. He has to be familiar with programming, but also with flight safety to ensure the safe operation.

Subject Group	Subject	Number of lessons	
		Theory	Practice
II. Device knowledge (Operator II. – Route planner)	Route planning & Programming	16	2
	Rules of documentation	2	
	Flight safety	5	
	Special settings	4	1
Altogether:		27	3

Table 3.

The third member of the crew is the technician. He repairs the drone if it is needed during the mission and he carries out the pre- and after flight checks.

Subject Group	Subject	Number of lessons	
		Theory	Practice
II. Device knowledge (Operator III. - Technician)	Repairing and refurbishing	4	4
	Quality controlling	4	2
	Flight Safety	2	
	Rules of documentation	5	
	Safe ground operation	4	5
Altogether:		18	12

Table 4.

After the classroom education there are 12 lessons in the field. The different operators have to be work together as a crew using the theory what they did learnt during the classroom training. After the successful theoretical examination the separate operators has to perform a real en route flight to prove their proficiency.

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Subject Group	Subject	Number of lessons	
		Theory	Theory
III. Practice (examination)	Practice and test flight examinations		16
	Theoretical examination (test)	4	
Altogether:		4	16
Overall:		124	46

Table 5.

2.5. Examination and evaluation

The exam is a combined theoretical and practical exam; the received grade is the average of the above mentioned exams.

Parts of the examination:

- Written exam (test);*
- Practical, operational exam.*

2.5.1. Written examination

Subjects of the written exam (test):

- I. Subjects of the Basics;*
- II. Device knowledge (according to the special operator post).*

Timeframe of the written exam: maximum 4 X 45 minutes.

On the written examination the participants have to fill out a combined test, which questions include the material of the lessons and the suggested bibliography.

The question sheet contains answer making, answer completion and multiple choice tasks which ensures the objective knowledge measurement of the participants.

The examination sheet has to contain only the training program related subjects, and it is not allowed to question any other additional subjects.

Evaluation of the written exam:

The written worksheets should be evaluated according to the repair guide. The five-point scale assessment should be based on the following percentages:

- Insufficient (1) — 0 – 50%*
- Sufficient (2) — 51 – 65%*
- Satisfactory (3) — 66 – 75%*
- Good (4) — 76 – 85%*
- Excellent — 86 – 100%*

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2.5.2. Purpose of the practical exam:

To make sure that the course participants are able to apply the theoretical knowledge on a good level this ensures the flight mission preparation, and the safe air and ground operation at the specified operational positions.

The courses requirement of compliance will be considered successful if the test at least adequate (MF). If any of the tests (oral and written) results as failure (fail) the examination results is insufficient.

Content of the practical examination

Operator I. - Pilot: His task is to perform a check flight (proper execution of a traffic circuit), to find solution to an emergency situation: (engine failure during take-off, landing in back wind, landing without airbrake).

Operator II. – Route planner: Planning, programming an autopilot control route in a given map segment including simulation and on-time online flight path change via telemetry.

Operator III. - Technician: His task is to assembly the UAV from its kit-box and dismounting to the box.

2.5.3. Overall Assessment:

The final evaluation is the average of the received practical and written exam grades.

The courses requirement of compliance will be considered successful if the examination at least sufficient (MF). If any of the exams (theory and practical) results as failure (fail) the final examination results is insufficient.

Exemption from the exam should be not given.

To document the examination process there is a need of a registry sheet and upon successful completion, a certificate shall be issued. The successful completion of the training is documented with a certificate, signed by the heads of participating organizations.

2.5.4. Determination of the training terms

Personnel relations of the training course

Instructors are professionals with relevant academic degree and professionals with relevant skills and experience.

Trainees are personnel planned to be operator on the METEROR-3MA unmanned aerial vehicle.

The basic requirement is for the trainees to have at least high school graduation degree. Location of the training course was the campus of ZMNE Bolyai János Military Engineer Faculty, Aviation and Air Defense Department, and the civilian airfield of Bőny.

General and professional supervision of the training course

The program of the training course has been approved by the National Transport Authority's Aviation Directorate in a decree. [3]

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2.6. Firsthand experience

To tell the truth it was the first UAV operator course in the history of our department. We had to select the subject groups and the single subject and lesson numbers to fulfil the requirements of the staff qualification however this special kind of operation does not requires any staff licensing. To start this work we had to find similarities to the special operator post in the manned aviation.

The main problem was the following: there were not any corresponding legal regulations to this issue. The main idea was to establish a specific frame of subjects to ensure safe operation of the UAV operators at least in closed airspaces according to the present legal regulation. The training course seems to be successful because there was not any accident and crash of this kind of UAV up to this day.

3. Skylark 1-LE operator course

It is common sense that in 2008 the Hungarian Defence Forces had obtained some Skylark 1-LE unmanned aerial vehicle manufactured by the Israeli Elbit Systems. The new system provides new capability of air reconnaissance for the troops serving in Afghanistan. There is essential to have well trained operators who run the system in proper way, and are able to carry out the reconnaissance and observation missions. The operators' training is realized in frame of a military training course.

Upon experiences of the first UAV operator training course the National University of Public Service got the task to organise a training course for the operators of the new small UAV system named Skylark 1-LE.

3.1. Skylark 1-LE



Fig.2 Skylark 1 LE SUAV

It is a highly covert UAS enabling intelligence surveillance and reconnaissance (ISR) missions, delivering actionable, high resolution video in real time to its easy to use mini ground control system and to forwardly deployed forces via remote video terminals (RVTs).

The system is man-portable and can be deployed by dismounted teams or in vehicle based mobilization / deployment configurations including on-the-move operation. Skylark® I LE is a highly autonomous system, including a fly-by-camera mode enabling

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day or night detection and tracking of fixed or moving targets and intuitive mission execution with minimal training.

Skylark® I LE is ideal for lower echelons organic beyond-the next-hill reconnaissance, artillery forward observer functions force protection tasks, as well as various HLS⁷ and commercial application missions. [4]

Performance:

- Take-off weight 7.5 kg
- Max Payload 1.1 kg
- Endurance 3 hours
- Service Ceiling 15,000 ft
- Range 20-40 km
- Speed range: 60-120 km/h

As I mentioned the department had already practice setting up training course for UAV operators, however the new task seemed to be more complex. In this case the UAV operation will be executed in operational area and the operation is strict bound to a military task like reconnaissance and online observation of non-friendly troop movements. Before 2010 the Hungarian Defence Forces weaponry did not have contained such kind of technical vehicle, so the training of the operators appears as a new task at the Operational and Training Department of the Defence Ministry of Hungary.

3.2. Requirements of the Skylark 1-LE training courses

During deployment of new weaponry it is extremely important task is to train the operative personnel on high level for a future mission's execution. To ensure the full mission capability and the standardized training of operators, the Operational and Training Department of the Defence Ministry of Hungary determined strict requirement system for the SUAV operator training.

This document is to regulate the main goal of training, the syllabus and the units taking part in the training.

The training is a basic training in a frame of a military training course for annually 10 soldiers. The participants who completed the course have to be able to use the theoretical knowledge in practice to ensure preparation for flight of the device and have to be able to execute a safe ground and air operation to carry out special military tasks.

3.3. Professional requirements

It was a big challenge for the participant to beat the course because the totally divergent subject from their basic knowledge. The personnel had to master the UAV system and the terms and abbreviations used in NATO. It was compulsory to learn the basics of the flight, the aerodynamic of fixed winged aircrafts. According to the area of application, the participants had to learn the basics of meteorology, mainly the low level meteorological formation and its influence on mission fulfilment.

It was the basic idea to use the UAV in international missions so the operators had to learn the usage of domestic and NATO maps, had to be able to convert units according to the safe flight planning. To minimize the danger for other flying vehicles in the vicinity

⁷ HLS: Homeland Security

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of the mission it was necessary to mention some issues of flight safety. Of course the device knowledge was compulsory for all the participants.

The responsible organization to work out the training program was the former Zrínyi Miklós National Defence University, Bolyai János Military Technical Faculty, Aviation and Air defence Institute, Air Traffic Controller and Pilot(Aircrew) Department.

This organization got the task to work out the training course, the subjects groups and the number of the lessons and the method of the final evaluation.

The training document has been approved by department leader of Operational and Training Department of the Defence Ministry of Hungary.

The course contains 420 contact lessons based on four main subject groups.

I. Subject Group Basics	II. Subject Group Device knowledge	III. Subject Group Practice		IV. Subject Group Examination
1-4 weeks	5-10 week	11-19 week		20-21 week
120 lessons	84 Lessons	180 Lessons		36 Lessons
ZMNDU ‘s campus at Szolnok	HDF.5. Bocskai István Infantry Brigade, Debrecen	HDF.5. Bocskai István Infantry Brigade, Training fields at Hajdúhadház		
Theoretical lessons and exam of basics	Theoretical lessons and exam of Device knowledge	Mission training simulator lessons	Mission preparation, training flights, mission evaluation	Final evaluation (theoretical and practical examination)

Table 6.

3.4. Basics

The first part of the training is held in Szolnok, at the Air Traffic Controller and Pilot (Aircrew) Department. The Basic subject group contains 94 theoretical and 26 practice lessons. 80% of the lessons have been granted by the professionals of the Air Traffic controller and Pilot (Aircrew) Department and the other lessons have been held by the professionals of the specific topic like electronic warfare and evaluation of air reconnaissance pictures.

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Modul	Subject	Number of lesson	
		Theory	Practice
Basics	Introduction	2	
	Aerodynamics	10	
	Aviation meteorology	8	
	Cartography	12	6
	Rules of the Air and procedures	8	
	Orientation in the air, Air navigation	4	6
	Air Traffic Management, Aeronautical Information Services	3	
	Air Operations (ATO, SAR)	2	
	Aviation medical knowledge	2	
	Flight Safety	6	
	Foreign Weaponry knowledge	4	
	Air law	4	
	Basics of Air reconnaissance, and its requirements	4	
	Application of Air reconnaissance	4	
	Assemblage and forwarding of Air reconnaissance reports	5	5
	Analysis and assessment of aerial photos	6	5
	Electronic warfare	4	
	Radio- telephony operator basic knowledge	4	4
	Basic theoretical examination (test)	2	
Together:		94	26

Table 7.

There is a high need to the participants to be familiar with air reconnaissance and analysis and assessment of aerial photos because this is the task they have to carry out in a mission. To be compliant with domestic and international regulation the basic subject group has to be containing the elementary information about the ATM⁸ system, air law and rules of the air.[5][6]

The first instructor team (8 soldiers) have been trained in Israel during a 2x2 training course of the system. During the first two week they made so called familiarization with all systems of SKYLARK 1-LE and in the second part of the course they got basic knowledge how to be an instructor for the future UAV operators. They had the theoretical and practical knowledge to operate the device, but they did not have the

⁸ ATM: Air Traffic Management

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corresponding general and special proficiency to carry out a complex mission from the preparation until the assessment of aerial photos. They had the task to take part on the SUAV⁹ training course with other participants.

3.5. Device knowledge

The second part of the training course is carried out in Debrecen at the HDF.5. Bocskai István Infantry Brigade. This module includes 84 lessons in 6 weeks and carried out by the instructors holding posts at the HDF.24. Bornemissza Gergely Reconnaissance Battalion. The instructors enlighten the capabilities of the device, the logic of the operating system and the subunits task. There are some other subjects there like servicing the device, converting maps for usage and firmware update on the UAV and on the ground station too.

3.6. Practice module

The third module is a mix of the previous two modules. During the first two weeks of training (60Lessons) there is a main familiarization with the UAV system via the so called "mission trainer" simulator. The participants' task is to accomplish different missions on the simulator using the real controller surfaces of the ground station of the system from mission planning till landing. The next step is to acquire the right sequence for the take-off. Finishing off this subject there is just one thing to do for the instructor: let the operators fly as much possible for the next four weeks (120 lessons) to get as much experience as possible for the final examination. At this part of the training soldiers have to carry out the whole mission alone unless intervention of an inspector is needed due to an emergency situation however participant should be at a good level to solve the problem alone. There are no any suggestions and helping words during the mission, it is only an after flight briefing to enlighten the possible problems during the mission fulfilment.

3.7. The method of examination and evaluation

The examination is divided into more steps during the three modules. The basic module ends with a theoretical exam which is a test, time to solve it only 1X90 minutes. The test includes all subjects of the basic module. There are different question types like answer making, answer completion and multiple choice tasks. The requirement is to reach at least 61% of the total score.

3.7.1 Device knowledge exam

This exam is at the end of the device knowledge module and it is also a complex test with answer making, answer completion and multiple choice questions in 3X45 minutes. It includes all the system describing and flight modus themes of the unmanned aerial system.

3.7.2. Practical examination

The task is to ensure that the operator is able carry out a whole mission on his own. The practical test includes mission preparation, safe ground and air operation and mission assessment also. During the flight the examinee has to use all the flight modus of the device, and the mission has to be at least 80 minutes from the take off. The training course is successful with evaluation at least sufficient. Should the examinee not pass any part (written test or oral answer) of the exam, so the final evaluation result is insufficient. In case of the examinee may not pass any of the theoretical exams, it is not allowed to carry on with the practical training and examination.

⁹ SUAV: Small Unmanned Aerial Vehicle

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There are two different positions for the operator on the practical exam:

Operator 1: (accomplish a flight mission)

Operator 2: (carry out the take off procedure)

The practical tasks are in closed envelope and the examinee has to choose one of it. The examination task includes theoretical question and a mission to carry out. The UAV instructor is responsible to evaluate given answer and the mission fulfillment of the examinee.

3.7.3. Final evaluation

The final evaluation grade is the average of the written basic exam, oral answer and the carried out mission on the UAV system. The final evaluation is successful at least with the grade of satisfactory. Of course if the participant may not pass any of the exams the final evaluation is unsatisfactory.

Exemption from the exam should be not given.

To document the examination process there is a need of a registry sheet and upon successful completion, a certificate shall be issued. The successful completion of the training is documented with a certificate, signed by the heads of participating organizations.

3.8. Experience upon the training course

We had a lot of questions upon launching the preparation for the training course. What should we teach for the participants? We had same 4experience during the previous UAV training course but to accomplish the requirement of the Operational and Training Department of the Defence Ministry of Hungary. We had to set up a more complex curriculum based on mainly the field of air reconnaissance and NATO standardization (STANAG). Not at all the device is a special kind of aircraft so we had to enlighten the related subject groups too like air traffic management , aviation meteorology, and rules of the air because those kind of subjects are generally unknown for a simple infantry soldier. Even so we could set up a good basis of subjects group covering the whole field of activity of a UAV operator.

We have to mention the “excellent” attitude of the participants, because they achieved several times excellent grades on the theoretical exams sacrificing their free time to preparation for an exam after 8 “strange” lessons a day.

The practical training has been carried out by the instructors of HDF.24. Bornemissza Gergely Reconnaissance Battalion who informed us on daily basis about the training.

We have a lot of success during the training but we have to mention the problems encountered during the practical training which where through no fault of the instructors. It came up a virus in the software of the UAV system so we had to spent weeks to let it correct by the Israeli side. We do not have training UAV so called “dummy”. The trainees had to practice the take off procedure (with help of a gummy rope called bungee) of the UAV with the real device and it had been caused of course damages, dilapidation an unfortunately to the loss one of the real UAV. Upon the experience finally the HDF procured a dummy for training purposes. Another hindering factor was the available amount of UAS because some devices where in Afghanistan on live mission. It can be

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stated too, we built up a very good and honest professional relation with the practical instructors and their superiors.

4. Future of the training courses

Since we let Skylark 1-LE in active troop service it provides efficient help to collect reconnaissance data for the troops serving in Afghanistan with providing human live and the loss of technical equipment. Every mission at operational areas brought lot of experience and new fields of employment. The commanders of the Peace Reconstruction Teams expressed praise about the UAV team participating soldiers. Last year the system performed its 150th mission providing important information. It is justified that the device should be in the HDF's weaponry to save more human live and to provide on-time reconnaissance data.

5. Introduction of an ongoing research related area

It is really important to set up a training course and to make professionals from people. It is more interesting to select the people to a special position. To decide who is able to learn or master something you have to select the people according special physical and medical requirements. In frame of our research project there are different working groups. One of them is the Data Integration Projects subproject on Human factors of UAV operations and the supporting legal framework.

5.1. The content of the project, Brief description of the planned R&D & activity

The project aims to examine the key elements of sorting UAV pilots, compared to the existing conventional pilot selection models. In this section of Research is necessary to clarify, selecting health and capability terms of the UAV control staff.

On the UAV control staff imposed health and capability requirements may differ from the requirements of "traditional" pilot candidates, but there is certainly overlap between the two disciplines.

5.2. Target fields and aims of the research

Create an optimal selection system by the definition of medical requirements and competency for future UAV operators;

Define the theoretical and practical training minima and optima on the basis of traditional aircrew training syllabus;

Circumscribe the selection criteria and adequate training serving the critical competencies of UAV crews based on the traditional training methods for aircrews and air traffic controllers;

Using simulations verify the optimal characteristics (physical, qualification, professional background) of future UAV operators.

5.3. Expected findings

Reflecting to the existing legal framework unveil the possible fields for development in the UAV ops and training system;

Elaborate a proposition paper for the legislator on UAV license categories and requirements (medical, theoretical, practical);

Create an optimal theoretical and practical UAV training syllabus for TOs;

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Form feasible methods for selection, training and licensing of UAV crews with an aim of attaining advanced flight safety.

6. Conclusion

It is clear that the spread of UAV's growing day to day. We know already a large scale of application in state usage of the system. To carry out different missions we need different concepts and layouts. One of our staff member Róbert SZABOLCSI derived requirements for UAV systems used in military [7], in firefighter [8] and also used in police applications [9] based on results of scientific survey organized by himself. Our Department of Military Aviation will continue the UAV operator training and also the connected research and analysis of related regulators which was realized through the assistance of the European Union, with the co-financing of the European Social Fund. "Critical Infrastructure Protection Research TÁMOP-4.2.1.B-11/2/KMR-2011-0001" it enjoys the support.



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COMMUNICATION ISSUES OF UAV¹ INTEGRATION INTO NON SEGREGATED AIRSPACE

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Abstract:

The constantly raising need of the integration of unmanned aerial vehicles and systems into the future ATM² environment poses a significant challenge to all stakeholders of aviation. This study – within the „Új Széchenyi Terv (New Plan Szechenyi) „TÁMOP-4.2.1.B-11/2/KMR-2011-Critical infrastructure defending research” tender, and its subordinated plan, called „Data integration”, which highlighted project is the „Operations of Unmanned Aerial Vehicle and its aspects for Air Safety” – concentrates on the issue of communication between unmanned systems and air traffic services or air navigation service providers, highlighting the issue of safety and security risks of future unmanned aerial systems communication concepts. In this perspective the safety of UAS³ operations are highly dependent on redundant communication channels connecting the UAS operator to its vehicle and to the air traffic services. Further serious issue can be revealed in the field of security matters of communication links, like unlawful interaction into unmanned operations.

Key words: Unmanned, aviation, communication, ATM, issue, ATC⁴, control, radio, risk.

1. Implementing UAV into non-segregated airspaces

Remotely piloted air vehicles have been used by the military for some considerable time and this technology is now finding applications within the civil environment with similar benefits in reducing human life exposure in long, dull, dirty and/or dangerous air missions.

They are referred to as Unmanned Aerial Vehicles and operated either by a remote operator through radio-transmission facilities or following a pre-programmed flight pass, hence the broader concept of “unmanned airborne systems” or UAS. The tasks of these civilian UAV will be similar to those of traditional civilian piloted aircraft while they also enable new tasks to improve human security and global Earth’s surface surveillance. Besides future civilian use of UAS technology we may also expect non-military

¹ UAV: Unmanned Aerial Vehicle

² ATM: Air Traffic Management

³ UAS: Unmanned Aircraft System

⁴ ATC: Air Traffic Control

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governmental applications, like police, border guard, disaster management surveillance etc. A particular point is that the widely anticipated full scale development of these civilian UAV calls for their seamless operation with existing piloted aircraft in non-segregated airspace to ease today's operational constraints on their flight routes planning in coordination with ATC. With some exceptions current regulations of UAS operations orders the UAV to remain in segregated airspaces, thus assuring separation from manned aviation. With the constantly raising need to integrate UAS to non-segregated, civil used airspaces relevant aviation related international organizations, such as EUROCONTROL⁵, FAA⁶, ICAO⁷, EASA⁸ and national experts are assessing the possible risks and mitigations. During the examinations all stakeholders state that the most crucial point of the integration is that it cannot lower the current safety level of civil aviation. While establishing the baselines for civil UAV flights in non-segregated airspaces we also have to examine those certain security issues which may rise from the nature of this kind of operations.

2. The communication issue

There are significant activities taking place to establish the procedures and requirements for safe and routine operation of UAS in non-segregated airspaces. Among the barriers to overcome in achieving this goal is the communication link for the UAS control and air traffic control.

During the assessment of UAS integration we have come to a conclusion that the best and most practical way – without endangering the current level of aviation safety – is to try to stay in line with those procedures and regulations which are in place for manned aviation, meaning that instead of building up a completely new system from the ground, assess the current set of rules and regulations of aviation and identify those crucial points, which cannot be applicable for UAS operation. In this perspective as far as it's feasible we try to handle the UAS as conventional aircraft, however certain differences will show up almost immediately.

The first and most obvious difference is that there are no crew on board, which brings up most of the questions like how is in charge of the aircraft or how can the crew maintain separation from other conventional air traffic, and as our current subject: how will the pilot in command communicate with the relevant air traffic controller.

The difference in communication is quite clear: instead of usual air to ground communication we have to ensure a secure ground to ground communication between the ATC and the UAV ground control station. This can be identified as an issue, especially in cases when the UAV operator is located in a significant distance from the UAV operational area. The current air to ground communication system regulation is dealing with standard radio communication, when a direct connection between the aircraft and the ATC is established. Obviously the curvature of the Earth will prevent most of such ground to ground communications, so the current system won't be applicable for ATC and GCS⁹

⁵ EUROCONTROL: European Organisation for the Safety of Air Navigation

⁶ FAA: Federal Aviation Administration (USA)

⁷ ICAO: International Civil Aviation Organization

⁸ EASA: European Aviation Safety Agency

⁹ GCS: Ground Control Station

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transmissions. As landline telephone connection can solely serve coordination tasks, the real time two way communications must still be established.

Because of the fact that due to the need of communication between the UAV and its operator there must be a permanent link between them – even in cases when the UAV is flying a pre-programmed path, without the intervention of its operator – (especially if we are speaking about UAV using civil used airspaces as general air traffic) this line of communication may be extended to transmit GCS-ATC radio communication as well.

Installing a radio communication relay to the UAV itself communication line can be established between the UAV operators the relevant air traffic service provider.

Measuring the potential options of solving communication issue the usage of the UAV as a relay station between the GCS and the ATC is a reasonable solution. This approach means that the direct GCS transmission will be received and forwarded back to the ground by the UAV, ensuring that the ground based ATC radio receivers will receive the transmission almost instantly.

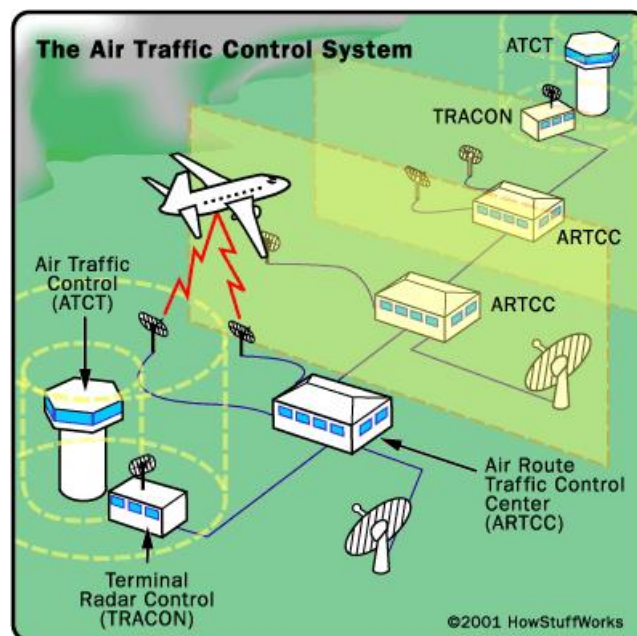


Figure 1: Standard communication link¹⁰

At this point UAV communication operations may be separated into two categories:

- **In line of sight:** this option may be applicable for small or medium type UAVs, where the ground control station is able to establish direct radio communication or data link with the UAV without using any further relay stations.
- **Beyond Line of Sight:** Another specific point for UAS is the requirement for satellite communications to relay communications beyond line-of-sight limits and thus maintain mission and safety of flight beyond terrestrial communication and surveillance means. This application is mostly interpreted for high altitude long endurance UAVs where the ground control station may even be on a different continent. During such kind of missions the operators are dependent on some kind of relay station, like satellites, to be able to monitor the flight of their

¹⁰ <http://static.ddmcdn.com/gif/air-traffic-control-elements.gif>

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vehicle. This operation means that the radio transmission from the GCS to ATC – or backwards – will required to run through at least two relay stations: the satellite, and the UAV itself.

In both cases the best solution for providing real time radio communication with ATC is to use the UAV itself as a relay station to the relevant ATC, although this option will place previously unknown system elements to the ATM structure (relayed communication).

According to international regulations, in each and every case when a new system element is being implemented to the existing system a safety assessment must be done prior to the implementation. Whilst a failure or interruption of any element of the relay architecture may not constitute a direct safety hazard, such problems can contribute to an operational incident (the so called chain of events). For example, loss of voice communications with a UAV pilot could increase ATC workload, which could lead to a more serious incident (i.e. loss of separation). When considering the generic safety performance the following events are considered to be hazardous:

- Loss of voice communications between UAV/S pilot and ATC;
- Interruptions to voice communications between UAV pilot and ATC;
- Intelligibility and latency of voice communications between UAV pilot and ATC;
- Loss of command and control link between UAV and GCS;
- Interruption of command and control link between UAV and ATC (due to system reliability).

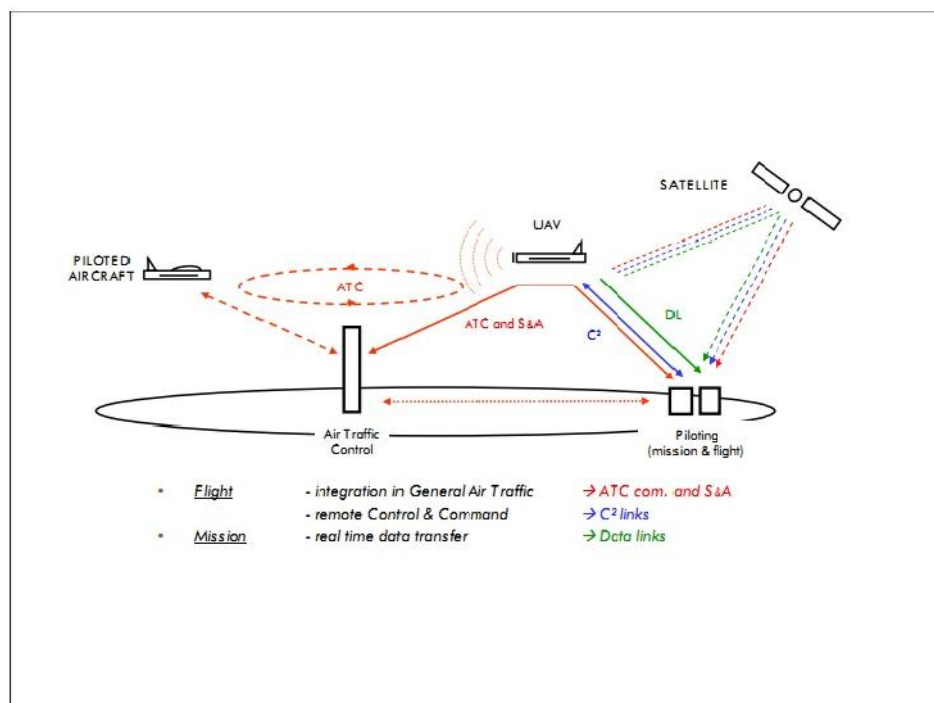


Figure2: UAV-GCS communication options

While the usage of the UAV as a relay may show an acceptable answer for the GCS communication with ATC, on the other hand the question of radio frequency allocation

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will instantly appear. Even the current ATM system has faced the issue of lack of available frequencies to be used for air traffic controlling and UAS needs further more spacing in frequency allocation for command and control links as well. This shortcoming is compounded by the fact that the UAS control communications links will likely be required to operate in protected frequency spectrum, just as ATC communications links are, because they relate to safety and regularity of flight.

If ATM-UAS communication will be solved on a way where the UAV itself is also operating as a relay station, it will mean that we require at least a doubled frequency spectrum, one for reaching our craft, and another to use the ATC frequency. Furthermore to protect current safety level of aviation and to avoid the above mentioned risks, the whole system must be backed up as well.

The above mentioned communication solution is currently incompliant with the relevant regulations, and doubling the communication ways used (satellite plus radio) almost doubles the safety risk factors that can rise.

3. Conclusion

Communication related matters are only one aspect of the of UAV/UAS integration into non-segregated airspace, still the question may raise such issues – frequency allocation – that may hinder success of all effort.

The usage of UAV as a relay station may give a feasible solution for UAV-ATC communication; however it has to be subject of several safety assessments to ensure proper regulations.

As a partial result of on-going studies the fact of necessity of UAS integration cannot be ignored nor by governmental, neither by the civil side. Realizing the constantly growing need for proper regulations to enable UAS operations – opening a new era in civil aviation – the task is given.

Our Department of Military Aviation will continue the UAV operator training and also the connected research and analysis of related regulators which was realized through the assistance of the European Union, with the co-financing of the European Social Fund. "Critical Infrastructure Protection Research TÁMOP-4.2.1.B-11/2/KMR-2011-0001" it enjoys the support.



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UAV¹ OPERATION IN AERODROME SAFETY AND ACS² PROCEDURES

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Abstract:

Nowadays, the use of unmanned aircraft in the vicinity of airports, moreover in controlled zone, can be realized, whether civil or military missions. Concerning the process of a flights, lasting from taking-off to landing, the most critical sector of the airspace are the final approach- and initial climbing area. The aerodrome controller is responsible for spacing in the above mentioned area, meanwhile prevent collisions, expedite and maintain the ordely flow of air traffic. The article describes the goals of UAV operation in controlled zone, moreover analyzes the aeronautical information services and air traffic control procedures and work factors affecting the flexible use of airspace, flight planning and airspace management when traditional aerial vehicle and UAV are flying at the same time. Finally, the authors propose a possible safety risks and solutions. The subject ,which is evaluated in the followings, is closely concerning to the „Új Széchenyi Terv (New Plan Szechenyi) „**TÁMOP-4.2.1.B-11/2/KMR-2011-Critical infrastructure defending research**” tender, and its subordinated plan, called „Data integration”, which highlighted project is the „Operations of Unmanned Aerial Vehicle and its aspects for Air Safety” analyzing the UAV operations in vicinity of airfields.

1. Introduction

The controlled aerodrome and its controlled zone, concerning the ICAO³ class of airspace (could be “C” or “D”) copes with IFR⁴ and VFR⁵ traffic, moreover under VMC⁶ conditions, when the visibility makes it possible a VFR flight could operate as SVFR⁷ if the aerodrome controller clears it. The air traffic control service is available for those, who departing, arrival or crossing the controlled zone. But the separation is depending on flight rules of traffic in different class of airspace. In order that an aerodrome controller makes each traffic to comply with rules, and prevents mid air collisions meanwhile

¹ UAV: Unmanned aerial vehicle, aerial vehicle, which is capable for unmanned flight

² ACS: Aerodrome control service: air traffic control service for aerodrome traffic

³ ICAO: International Civil Aviation Organization

⁴ IFR: Instrument fligh Rules

⁵ VFR: Visual Flight Rules

⁶ VMC: Visual meteorological Conditions

⁷ SVFR: Special Visual flight Rules

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provides orderly and expeditious flow of traffic, it is necessary to own each information about details of traffic. The quality and integrity of data are contributing to aerodrome controller's decision making procedures. In addition we should not forget about ground movements of aerodrome, where a controller also responsible for the separation of aircraft and obstacle, aircraft and other vehicles and it is necessary for a vehicle to obtain ATC⁸ clearance to operate in maneuvering area. Under low visibility in a busy international aerodrome movement of aerial and other vehicles is trailed with SMGCS⁹ system. Local operations of a controlled aerodrome goes along with strict rules and procedures which also contains coordination with neighbouring air traffic services, aeronautical information services, aerodrome reporting office and last but not least with emergency services. Simply stated, that accustomed operation of controlled aerodromes is a well-established process, which is varied in case of significant weather or an emergency situation. Obviously in those cases an aerodrome control service launch their proper procedure to avoid further disease and care safety. An aerodrome controller task also extends the providing of economical and safety air transport with flexible utilization of airspace. In this meaning they have to exploit the aerodrome control zone with maximum capacity. This is involved the application of proper SID¹⁰, implementation of delayed start up procedures, properly selection of taxing routes or the continuous information of VFR traffic. In this well organized "chaos" shortly a new element may appear, the unmanned aerial systems, whose on board system developments are going to reach that safety level, which will makes them able for common flight with their conventional "partners" in the civilian airspace. The integration to the civilian airspace is the common issue of air traffic services, manufacturers, pilots and further applicants as well. According to a study of EUROCONTROL¹¹, which was published several years ago, air traffic services can also handle the unmanned systems in those cases if they are able to operate in each class of airspace like the manned ones. It contains also the same flight rules, flight planning mission tasking procedures and capability of "sense and avoid". More accurately in order to enter in the aerodrome control zone they have to get the controller's clearance, to have valid flight plan, to operate by IFR or VFR, to maintain two way radiocommunication with control tower and to have on board transponder. Unmanned systems should be capable for obeying order of controller without delaying and for make out targeted and "for-all" information. It is also very important to implement proper procedures in case of emergency or radiocommunication failure as it does a manned aircraft. It is worth to note, that the malfunction or interruption of contact in communication between aerodrome controller and "pilot" of unmanned vehicle or between "pilot" and the vehicle also means radiocommunication failure. The next point is to emphasise the operational frequency, which must work safe and protect against unauthorized users- intruders-otherwise the unmanned vehicle get unlawfull interference namely hijacked. Obviously it entails consequence and penalty as well. In an air traffic controller this time occurs, that an aircraft which is under unlawfull interference is expected to be in emergency. In this case the alarming system starts its process, including Search and Rescue Coordination Centre. However there is nobody on board, but we should not forget about the possible victims and missing person on the ground, who may took an aviation accident. If an aerial vehicle

⁸ ATC: Air Traffic Controller

⁹ SMGCS: Surface Control Guidance and Control System

¹⁰ SID: Standard Instrumental Departure

¹¹ EUROCONTROL: Specifications for the Use of Military UAVs as Operational Air Traffic Outside Segregated Airspace Edition 1.0, 2007

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is under unlawful interference, it raises suspicion of terrorism and entails alarming of National Security Services. Shortly summarizing the above written statements, beyond the well- functioning and many times tested procedures of an aerodrome controller, it is possible to install new ones, which serve not only for air traffic safety, but aviation security as well.

2. Chapter

2.1 The application of UAV in controlled zone of controlled aerodromes

The controlled zone of a controlled aerodrome usually covers horizontally 5-10 NM radius area from the ARP¹² and in vertically up to 4000' altitude. It means, that this area from the ground is controlled, so even if for the agricultural work, which usually does not happen higher than 50 m AGL¹³, it is compulsory to have ATC clearance and all equipment which necessary for operation in controlled airspace. Approximately this height range is going to be preferable for unmanned aerial vehicles in "light" (zero) category, for their aerial work. There is range of potential application also in civilian area, which makes them suitable for the implementation of many tasks.

These applications could be the followings:

- traffic monitor, mainly in busy road connections;
- pipeline check;
- borderline control, which is a highlighted task at the border of Schengen Area;
- surveillance of plow land;
- search and rescue- or emergency management;
- or cartographic flights.

The above mentioned flights are normally affecting the aerodrome controlled zone, but till now have done by manned aircraft. In order to provide the safe and orderly flow of traffic in the controlled zone, an aerodrome controller has to look through all risks and determine the proper and safest arrival and departure path, even though tail wind could make it inconvenient. Here should be notifying that in selection of "runway-in-use" first of all the wind direction is preferable, secondly the applicable noise abatement procedure, the traffic intensity and also the runway configuration. So that, the controller may offer an opposite direction for departure in order to expedite the traffic flow and it is the pilot's decision to accept it or not.

12 ARP: Aerodrome Reference Point

13 AGL: Above Ground Level

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2.2 Cooperation between UAV and aerodrome controller in function of categories and capabilities.

The traffic of controlled zone is not only featured by low altitude flights, but also departure arrival traffic and crossing traffic higher level. In the further parts of the paper the writers examine the cooperation of ATC and UAV controller through the several situations.

There are different points of view for categorizing UAV-s, like Maximum Take Off Weight, endurance, maximum altitude or distance. Concerning these features it possible to distinguish the followings:

UAV class	MTOW kg	Distance	Radius NM	Alt feet
Class 0	< 25	close	< 10	1000
Class 1	25-500	short	10-100	15000
Class 2	501-2000	medium	101-500	30000
Class 3	2000<	long	500<	30000<

1.Table

According to the viewpoint of an ATC there are many complementaries necessary to know about the traffic. Namely the followings:

- does it have transponder on board;
- the communicaiton and navigation systems makes it able to keep in contact with ATC;
- its turbulence category;
- its approaching speed on final;
- whether able for maintaining the given level;
- how fast able to replan their route in case of avoiding manouvere;
- does it have ACAS or TCAS equipment on board, which makes it able to sense the conflicting traffic and avoid it;
- does it have CPDLC contact for reducing verbal communication between ATC and “pilot in command.

Furtherly exemining the UAVs in general, independent on its type, which kind of information and orders they get from ATC in different situation. Inspite of the fact a UAV was developed for military purposes, many civilian applications would prefer its capabilities. But it is also imaginable, that after a tranining, in a temporary reserved or segregated area, it is flying back to home base or alternate aerodrome, crossing civilian airspaces controlled and uncontrolles ones as well. It is worth to know, that in many countries in Europe between “danger”, “temporary reserved” or “segregated” areas and the home base aerodrome usually civilian airspace located. They do not have direct contact line or corridor to the home base, because in this area all traffic handled as GAT¹⁴, the only excuse could be the MAC¹⁵, but it is designated for high speed fights of military aircraft. Returning to the aerdrome controlled zone, writers examine the UAV, which is supposed

¹⁴ GAT: General Air Traffic

¹⁵ MAC: Military Air Coridor

UAV OPERATION IN AERODROME SAFETY AND ACS PROCEDURES

to equip with transponder and radio contact with operator, which makes it suitable for civilian airspace Arrival level to the CTR¹⁶ could be 4000', the first IFR level implemented according to ICAO flight rules. In order to enter the controlled zone it is necessary to get ATC clearance, which is possible by air filed flight plan via operator or with an earlier field flight plan. According to the flight plan data the controller gets together the squak and callsign for identification. Afterwards provide arrival information containing meteorological conditions, which originated from METAR¹⁷. In a case if there has not been installed any instrumental landing system, or the UAV does not have receiver on board, the operator may request cancelling IFR and changing to VFR. It may associated with replanning the flight path.

SPECI ZZZZ 111207Z 32010G17MPS 3000 TSRAGR BKN015CB 14/05 Q1001 RMK YLO
METAR ZZZZ 111215Z 32008G15MPS 0500 +TSRA SCT003 BKN015CB 18/15 Q1003 RMK RED

Receiving the above, on the one hand the operator has to decide if continue approach and avoiding CB¹⁸- s to reach the aerodrome, or on the other hand diverting to an alternate aerodrome. In the worst case scenario, if the endurance is not enough to reach the alternate, it is possible to land on the field (additionally particular UAVs do not requires developed runway for landing). In this event the main task of ATC to give assistance with information. In order to find the proper place and surface for landing the ATC able to give navigational aids to the pilot. Basicly the ATC has to know the geographical features of the terrain. Secondly the ATC also could provide information according to the data of meteorological radar of the aerodrome, which measures extention of CB, how fast and which direction it is moving, what type of presipitation in and its intensity. In order the successful avoiding action it is worth to refresh rules of avoidance. Flying into CB is strictly prohibited, and also flying below is not recommended due to severe convection and gust front. Keeping at least 5 NM from the edge and 1000 m above the clouds. Flying between clouds in case of 10 NM distance is allowed. The aerodrome controller radar usually doesn't suitable for measuring these distances accurately, this radar display is authorized only for informing, not vectoring the air traffic. For this instance it is very important to have among UAV payload on board those sensors, that able for distance measuring. The ATC could give navigational aid for finding a proper surface in the event of landing on terrain. In a controlled zone usually abandoned or bailout area is determined for safety landing, jettisoning or forced abandonment cases. The navigational aid this time means to help the crew to localize area, with GPS coordinates, or given heading and distance from a location, or radial and distance from a navigational equipment. It depends on which one suitable for UAV navigation.

As the above example shown us, there is no difference between those procedures which ATC apply in same events for manned aircraft. The only deviation could be that, a pilot of manned one should expect reserves for estimated navigation to alternate aerodrome, which is not practicable and feasible for a short range UAV.

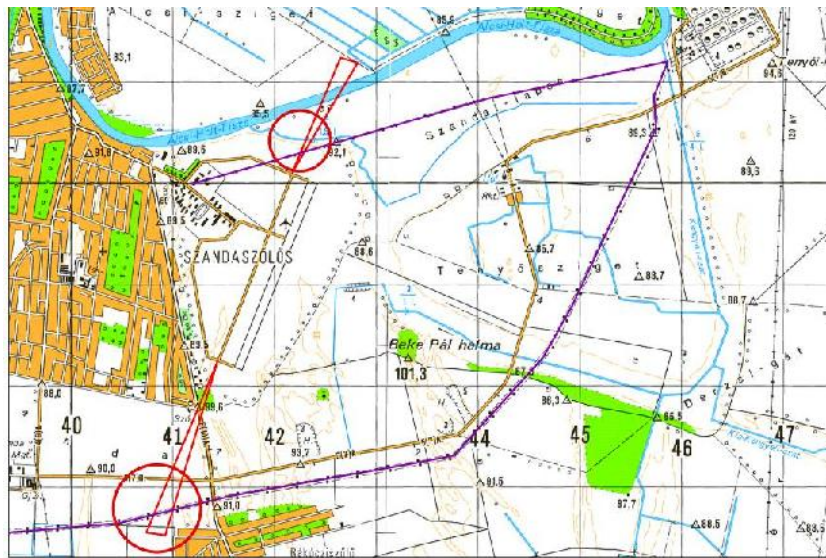
¹⁶ CTR: *Controlled Zone*

¹⁷ METAR: *Meteorological Aviation Report*

¹⁸ CB: *international acronym of thunderstorm*

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Another situation, the aerodrome controller going to face, is originated from a further civilian application, the pipeline check flight. It is obvious, that these pipelines and electrical wires do not avoid the area of controlled aerodromes, so in order to check them it is necessary to fly across the zone several meters above ground level. The point is to have transponder on board, makes the unmanned aerial vehicle able to be identified by ATC and get monitoring meanwhile flying across the CTR. This flight is going to be a VFR traffic, because of the height in controlled zone (and because the only procedure to do in IFR in CTR could be SID or a STAR¹⁹). In order to operate as a VFR, need to have VMC conditions, 5km visibility and 1500' cloud base, moreover the ability of “sense and avoid” any confliction. In addition could be important for the ATC if it is a pre programmed autonom flight, which is only monitored by ground station and how accurate the uploaded coordinates for flight planning. Exactly meanwhile the UAV is flying over the pipeline, whether how far deviate its route horizontally. This inaccuracy could be originated from the not precise coordinates, but the blowing wind can drift them as well.



1. An aerodrome controlled area

In the illustration above, it seems where are the “hot spots”, which influence decision making process of aerodrome controller. The procedure is the same as manned aircraft, so that the aerodrome controller should apply permission or forbidden to cross the centerline. Before giving the clearance the ATC has to make sure it is possible to clear and the UAV able to comply it. The point is rely on “in time” clearance giving and “real-time” performance. In order that, a UAV can cross the centerline safe, the ATC also has to create the safe distance behind the traffic approaching on final, because a “light” UAV can affected by turbulence. This safety distance has to determine, it is a base of timely given clearance, so we need a single reference point, which is accurate enough for separation. It could be the reference point of runway threshold, which is a critical accuracy data published in AIP²⁰, 10^{-8} . Reaching the measured slant range and azimuth from the threshold the UAV could get an acknowledge from ATC to continue via flight plan route. Otherwise it has to start a pre programmed holding procedure.

¹⁹ *STAR: Standard Arrival Procedure*

²⁰ AIP: Aeronautical Information Publication

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This acknowledge may verbally or through a data link, like ADS-B²¹, which able for cooperation with automatized ATC systems.



2. Scout 2000, model UAV able for pre programmed flights

In the third situation a model sized UAV could be examined, which does not feasible for integration due to its navigation and communication systems. This kind of UAV operation within a controlled aerodrome only in “occasionally” available airspaces can fly. The basic criterion of this airspace is the decree of National Aviation Authority and contribution of ATSU²². From the ATC point of view it is very important for UAV to remain in appointed airspace and hold a safe distance from borders. Namely do not get closer to the borderline than 2,5 NM horizontally and 1000’ vertically. Also necessary to announce the start and finish of operation in this airspace, and alarm the ATSU in case of any airspace violation.

It is obvious, that beyond the resolution of the above mentioned situations in controlled areas, the most important task to solve the “sense and avoidance” of conflicting traffic. Those aircraft which equipped with on board transponders, which is compulsory in controlled airspace, are capable to communicate with ACAS II²³. As it seems in shared videos of Barracuda²⁴ test flights, happened in Canada, it is proven the UAV able to “sense and avoid” conflicting traffic during its autonom flight. The current results and research points forward the integration to civilian airspace. Concerning the aerodrome controlled zones, the complexity of traffic flow contains not only the traffic follows standard procedures, but others which comply special tasks. These could be VFR or IFR crossing traffic, but had marked to “stay” in flight plan, somewhere on route, or making calibration or test flight, which deviating from GAT rules. Moreover those flight which have priority in traffic flow, like search and rescue mission, medical flight, fireservice flight or disaster management, expected a special handling from ATC. It is also important, that emergency situation of an unmanned aerial vehicle however does not threaten directly human life, but an ATC should handle it with providing priority.

²¹ ADS-B: Automatic Dependent Surveillance - Broadcast

²² ATSU: Air Traffic Service Unit

²³ ACASII: Automatic Collision Avoidance System

²⁴ Barracuda: European unmanned aerial vehicle (UAV) currently under development by EADS

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3. Expectation

In order to provide the appropriate air traffic service, it is necessary to keep the two way radiocommunication between ATC and the operator. Also important to realize the suitable radio phraseology with specialities for UAV. It is practicable, at the first contact to add after the callsign that the calling station is “unmanned”. It could be usefull information not only for ATC, but all station on the frequency.

All air traffic services for manned aircraft, should be harmonize with those which related for unmanned ones. It means, that each clearance, order or information is titeled for UAV operator as it normally happens with pilots of manned aircraft.

If it is not possible to complete the given order, or a new one would be preferable, for example the first was technicaly impractical, the UAV operator has to report it clearly “Negative I am not able to comply”.

For idenetification by ATC in controlled airspace it is necessary for a UAV to be equipped with transponder

It is known, that a filed flight plan is necessary in order to fly in controlled airspace. It is for informing the ATSU about flights, so that have to mark all data which detail an UAV flight. It has to contain all information, for example delays on route due to mission task, track, altitude and deviations, or estimated flying time. It is expected that the UAV should carry out the accepted flight plan. Otherwise it have to report changes to ATSU.

Each UAV detailed with its performance. It is very important, mainly for operator, but the ATS personnel as well, to know these details as much as manned aircraft’s. Among parameters the most important are the rate of climb and descend, climbing and descending speed, turning radius, radius of action etc. These data may practicable in response of emergency situation.

UAV flights are limited, as also manned ones, by weather conditions like cloud base, visibility or wind strength and direction. The restrictions of a UAV depends on ATS class of airspace, training level of the operator and flight rules.

Among the list of worries with UAV integration, the most emphasized is the system security in military and civilian applications as well. These are featured by:

- unauthorized and malicious intervention in flows of data
- unlawfull interference of a ground station
- malicious abuse with applying UAV

In order to reduce risks, it is necessary to implement security measures in the operational system, whose guarantee that UAV operation is released for the cleared and supervised task. It is also important to evaluate the possible risks, weekness of system security, authentication, or the hardver and software security.

The reliable UAV operation also includes the effective training of personnel, their skills and proficiency. It is basiciy expected that a well trained and prepeared personnel complete the flight, which lates from the flight planning and preparation, to the controlling. Only regular training and practices provide maintenance of skills.

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Additional expectation of UAV personnel to be acquainted with flight rules, air traffic services, general information about airspace management, use of airspace and basic information about other aircraft. It also could be practicable if the ground would have a display of RAP²⁵. It would help for operator to get informed about the UAV position in airspace, other users and the next airspace to enter.

In a UAV operation not only and every time the operator who make final decisions in case of any malfunctions, as it does a pilot of manned aircraft. So that it is also important during the flight, that the system be able automatically localize and avert the malfunctions.

Finally I would like to emphasise how important for an ATC to be acquainted with UAV, its equipment, special procedures, applications and technical parameters. Only the carefully ruled legal background and application instructions provide the safe and effective operation in the air and on the ground. For further purposes it is recommended to maintain a continuous cooperation between air traffic services and UAV operators.

4. Conclusion

Nowadays the UAV flights in civilian airspace is not infrequent, however these go on far from residential area, where the other flights also do not occur. It seems from the above how many requirements should meet the UAV for further common flights in civilian airspace, after locking out all risks and doubts.

Concerning the appliance prognosis, it is imaginable that in the near future also in our airspace, increasing the number of UAV flights. In order to prepare the spread of UAV flights, it is important to draw up criterias and response for all. As an air traffic controller I think it is the near future to keep contact with an operator on the air.

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Our Department of Military Aviation will continue the UAV operator training and also the connected research and analysis of related regulators which was realized through the assistance of the European Union, with the co-financing of the European Social Fund. "Critical Infrastructure Protection Research TÁMOP-4.2.1.B-11/2/KMR-2011-0001" it enjoys the support.



²⁵ RAP: Recognized Air Picture



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CONSIDERATION ON JOINT FORCES IN POST- CONFLICT OPERATIONS

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Abstract:

The contemporary strategic environment might be described as uncertain, complex and it is subject to rapid changes, which requires constant monitoring and proactive engagement in order to mitigate the security challenges. Conflicts will exist for an undetermined period of time, being part of human nature. The wars will start and will come to an end through post conflict operations. Post-conflict operations consist of a complex and challenging set of tasks meant to provide a stable environment involving the military as well as other government agencies and multinational partners. In fact, the primary military contribution to stabilization is to protect and defend the population in order to create a platform for political, economic, and human security.

Key words: strategic environment, joint force, post/conflict operations, stability operations

“No one starts a war—or rather, no one in his senses ought to do so—without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it.”

Carl von Clausewitz, On War

1. Introduction

The contemporary strategic environment might be described as vulnerable, uncertain, complex, ambiguous and it is subject to rapid changes, which requires constant monitoring and proactive engagement in order to mitigate the security challenges. Fluidity is a characteristic feature of the present strategic environment which embodies the continuous change of coalitions, alliances, partnerships, actors, and new national and transnational threats constantly evolving. Interagency and joint operations will be required to manage this wide and complex range of players and threats residing in the environment. While it is impossible to foresee accurately how challenges will come out and what form they might take, it is expected that uncertainty, ambiguity, and surprise will govern the course of regional and global events. Additionally to conventional conflicts, the nowadays challenges continue to include irregular threats, information operations directly targeting civilian leadership and population, catastrophic terrorism employing weapons of mass destruction, and other emerging threats to disrupt the nations and international organization ability to project power. These challenges are the natural products of the enduring human condition, but they will exhibit new features in the future. None of these challenges is a purely military problem [1].

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However, the military instrument it is and will be part of the solution and it will be called to manage the early stages of the conflict, bearing in mind that strategic and operational goals are achieved or lost not only by the aggressive use of force but also by how rapidly a state of stability can be established and maintained. As a result of the extremely high lethality and range of today weapons systems, and the inclination of opponent forces to operate among the population, the risk to combatants and noncombatants will be much greater and outcomes will be measured in terms of effects on populations [2].

Complex cultural, demographic and physical environmental factors will be also present, adding to the uncertainty of war and they will include humanitarian crises, ethnic and religious differences, and complex and urban terrain, which often become major centers of gravity and a haven for potential threats.

Victory is determined not only by what happens during a period of conflict but also by what happens after the fighting ends, during post-conflict operations. The famous military theorist, B. H. Liddell Hart, used to say *“If you concentrate exclusively on victory, with no thought for the after effect, you may be too exhausted to profit by the peace, while it is almost certain that the peace will be a bad one, containing the germs of another war”*[3]. Unfortunately, the recent conflicts have proved the actuality of theorist’ words and the need to reconsider the approach of the post- conflict phase.

2. Joint forces in complex post-conflict operations

Post-conflict operations consist of a complex and challenging set of tasks meant to provide a stable environment involving the military as well as other government agencies and multinational partners. In fact, the primary Joint forces contribution to stabilization is to protect and defend the population in order to create a platform for political, economic, and human security. The missions, tasks, and activities conducted under stability operations fall into three broad categories: initial response activities, transformational activities, and sustainment activities [4].

Initial response activities generally are tasks executed to stabilize the operational environment in an area of operations, for instance during or immediately following conflict. Initial response activities aim to provide a safe, secure environment and attend to the immediate humanitarian needs of a population. They support efforts to reduce the level of violence or human suffering while creating conditions that enable other organizations to participate safely in ongoing efforts. Understanding the operational environment is a precondition for designing post-conflict operations because, in many regards, the factors that affect them may differ significantly from those that influence conflict. For example, the immediate post-conflict environment in Iraq and Afghanistan revealed that the major concern after the termination of open hostilities was security because local security forces were unable, unavailable, or unwilling to address civilian lawlessness and violence [5]. For this reason, coalition forces had to provide security in major population centers and this greatly slowed the stabilization process.

Transformational activities consist of a broad range of security and reconstruction efforts. These activities aim to build affected nation capacity across multiple sectors and to set up conditions that facilitate unified action to rebuild its supporting institutions in order to create adequate conditions for sustainable development. Undertaking ambitious reconstruction goals is possible only when security is guaranteed.

Sustainment activities include long-term efforts that capitalize on capacity building and reconstruction activities to establish conditions that enable sustainable development.

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Joint force may be temporary appointed as lead-agency for stabilization activities when a high level of violence is present, particularly while combat operations are ongoing in particular areas (for example counterinsurgency operations). That is exactly what happened in Germany and Japan following World War II. President Franklin D. Roosevelt designated the U.S. Army as the lead government agency responsible for post-conflict reconstruction. President Roosevelt based that decision partly on his perception of the U.S. Army's ability to deliver "prompt results" and partly on Secretary of State recognition that the State Department did not have the capacity to run an occupation [6].

Planning for termination and post-conflict operations should begin as early as possible, because post-conflict operations are often chaotic, long-lasting and they have a tendency to weaken the military's resources and adversely affect the force readiness. It is of major importance political leaders to give adequate guidance, define the end state, and properly resource the military for conflict termination and post-conflict operations. World War II demonstrated the importance of early planning for post-conflict operations. Planning for post-conflict operations for World War II began in 1943. By the time the war in Europe ended the military had a detailed plan for post-conflict operations and the occupation of Germany. We can state that the success of Operation ECLIPSE was due in large part to early planning. Planners were able to anticipate and prepare for almost every situation that occurred after the war [7].

"Force is rarely the defining element that delivers success; instead, it is best used as an enabler of diplomacy" [8]. Complex problems of post-conflict operations require comprehensive solutions, a full range of measures to promote host nation reconstruction. Joint, interagency and multinational must describe the modern way of war. Joint refers to operations conducted by employing the collective capabilities of the component services of the military, while the interagency simply means that operations will involve all agencies of the particular government, or international organization. The multinational aspect leverages the political and military advantages that other nations can bring to reconstruction process. Joint military operations are constantly improving as professional military personnel realize and embrace the synergistic effect of "acting unified". Likewise, the importance of coalition operations has become increasingly apparent.

Interagency cooperation and involvement in post-conflict operations is not only important, it is essential. For example, a study based on Iraq reconstruction process identified 135 tasks to be accomplished in order to build and sustain a state. At least 68 of those tasks were beyond the range of military capabilities being primarily responsibility of other government/non-military agencies.[9]

Unity of effort and command are essential during post-conflict operations. History indicates that the principle of unity of effort and unity of command is violated during post-conflict operations. When this happens the operation lacks focus and is characterized by confusion. Post-conflict operations to rebuild Afghanistan have involved different organizations and NGOs willing to help a nation in need. Unfortunately, each organization has come in with its own mission and plans, except any reasonable solution to act in the spirit of unity of effort or unity of command. Allied aid efforts showed less coordination and continuity and the UN Assistance Mission in Afghanistan (UNAMA)—which reports on drugs, human rights, and casualties—has never shown any serious ability to coordinate the international aid effort, develop effective plans and requirements, or do any more to ensure that aid money is spent honestly and has real measures of effectiveness[10]. Moreover, the allied leaders of the international aid efforts and allied forces showed so little interest in effective contracting and control of money, validating the programs they

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started, and measuring the effectiveness of these programs. Although ultimately successful, post-conflict operations would have been more efficient if there had been a higher cooperation to synchronize and coordinate the effort. Unity of effort and unity of command are just as important in post-conflict operations as they are during combat operations.

One of the most important objectives of post-conflict operations is also achieving unity of effort across the diplomatic, informational, military, and economic elements of national power. The diplomatic element may be used to gain international support and to deal with the indigenous leadership. The informational element ensures that the intentions are correctly understood by public. An effective information campaign for post-conflict operations must focus on earning the trust and confidence of the people while simultaneously acting to counter hostile propaganda. The military element will become less significant as the post-conflict operations progress toward achieving the end state. However, the transition/handover from military to civilian authority may be a major problem in terms of identifying the method of transition. This would involve a period of overlapping operations, the exchange of information and liaison personnel and the establishment of specific criteria to ensure a smooth and effective turnover. Two of the major activities of post-conflict operations, rebuilding and reconstruction, depend extensively on the economic element, thus the availability of financial support and capital will have a direct impact on success or failure as well as the duration of the operation.

The Joint force has to apply prudently the appropriate combat capability. During post-conflict operations, defending and protecting the population is paramount. It is on this foundation of civil security that the political settlement can be achieved. The use of force often antagonizes the population, possibly damaging the legitimacy of both the host nation government and the organization that uses force while enhancing the legitimacy of any adversary. Restraint, a particular principle of stability operations, requires the careful and disciplined balancing of protecting the people and infrastructure, conducting military operations, and achieving the overarching objectives of the operation. A single act can cause significant military and political consequences; therefore, when force is used, it must be lawful and measured [11].

One of the difficult aspects is the fact that sometimes hostile forces instead wearing military uniforms they use civilian clothes as it was encountered in Afghanistan. This is both a real risk to cause collateral casualties among civilians and a new characteristic of conflicts. The multinational troops on the ground operate more often in the populated areas in order to protect and defend civilians against an adversary present among it, being a real challenge to separate the enemy from civilian population.

3. Conclusions

Future operations will be short on combat and long on post-conflict activities if we want lasting stability. Successful post-conflict operations and conflict resolution depend on the civil and military leadership ability to work integrated, transition to peace being a phase as important as the conduct of war. Mechanisms and organizations should be developed and enabled to coordinate the military, political, economic, and informational aspects of the operation as well as harmonizing the interagency, multinational and civilian participants.

A civil-military plan needs to be developed that describes the desired end state in sufficient detail so that each of the agencies can develop its own supporting plans. However, flexibility and adaptability are essential traits.

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One of the lessons learned from post-conflict operations is the importance of information operations. Modern military operations and particularly post-conflict operations involve other government agencies. Capabilities such as intelligence and diplomacy are resident in government agencies other than the defense agency yet they are essential for successful post-conflict operations. To improve its ability to work with other government agencies the military should take the necessary steps to ensure interagency operations are integrated into its doctrine.

Security is one of the pillars of post-conflict operations. Every time the military conducts post-conflict operations it faces a dilemma regarding the role of combat forces in maintaining security after the fight. Combat forces are an excellent initial security capability but they are neither trained nor equipped to perform long-term law enforcement and other security functions. An alternative solution is to involve as early as possible police/gendarmerie forces to provide an interim security capability to bridge the gap between the conclusion of combat operations and the establishment of indigenous security institutions.

Every type of military operations requires training and post-conflict operations are no exception. There is a real need to develop viable training programs that could be used to rapidly train units and individuals for post-conflict tasks outside of their area of expertise. It is important also, to include in the force training liaison with nongovernmental organizations, private volunteer organizations and other governmental organizations and coalition partners and small unit operations in uncertain situations with restrictive rules of engagement.

Military organizations rely on strong leaders who understand the nature of post-conflict operations. Developing leaders who can perform effectively in the dynamic environment that post-conflict operations requires mandatory cultural awareness and language training and developing abilities for interpersonal relations, negotiating skills, and communications.

The success of post-conflict operations does not rely only on military ability to conduct successful combat tasks, but on the capacity of all actors involved in operation to work in a cooperative manner. The success is also driven by planner ability to properly address the needs and aims/desires of the local civilian population.

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ROMANIA WITHIN THE REGIONAL SECURITY ENVIRONMENT

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Abstract:

Understanding Romania's regional role must be correlated with understanding other actors' purposes and interests in the region, for this comprehension is tightly connected to geopolitical control and advantages. Therefore, Romania must display carefully and diplomatically these issues in order to harmonize its national and regional interests and play an active role in the decision-making process within European and Euro-Atlantic bodies.

Key words: security, stability, frozen armed conflicts, threats, risks, South-Eastern Europe.

1. Introduction

Romania's geopolitical position plays a pivotal role in supporting its national security in a coherent manner in south-eastern Europe. The actions and measures taken by the Romanian state concerning the conflicts taking place in the Balkan Peninsula, Moldavia and Georgia have been strong arguments in favor of Romania's accession to NATO and EU.

Due to its position at the border of NATO and EU, in the western part of the Black Sea and the Danube River, Romania has been a gate to the European and transatlantic world as well as the Euro-Asian arena.

2. Risks and Interests Areas around Romania

The geostrategic phenomenon of globalization places Romania at the crossroad of outstanding geopolitical and geostrategic developments, which comprise various and major risk factors to our country's security. These developments occur in our proximity and pertain mainly to central Europe, Balkan area, Black Sea neighborhood and the Community of Independent States (CIS).

CIS has been undergoing a process of national clarifications due to the diversity of its components – territorial, ethnic, religious, economic and social, which is proved by the perpetuation of the frozen conflicts in Transnistria and Caucasus. In spite of its economic and political challenges, Russia has made use of diplomacy and nuclear potential, which has maintained its role as almost exclusive world power, with a clear emphasis on its intention to preserve influence and control for over 50 years in an area situated in the close vicinity of the empire.

On the other hand, the central European area has proved its propensity for regional prosperity by involving the main global geopolitical and geostrategic actors. The region is

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quasi-entirely integrated in the Euro-Atlantic security system, as well as the EU system. Then, the Balkan region is still affected by the frozen conflicts of the former Yugoslavia, which have been aggravated by the current economic crisis.

The Black Sea area is also both an opportunity and a risk source, for it is placed at the confluence of two strategic directions: Black Sea – Caucasus – Caspian Sea, which is the passing corridor of the resources from central Asia to Europe, where frozen conflicts still exist fostered by Russia. The second is the Black Sea – Mediterranean Sea, which has a strategic importance for NATO, but is affected by cross-border threats¹.

The interests to promote Romania's national security under these tense circumstances are subject to phenomena such as: existence of destabilizing and uncontrolled forces and equipment in Romania's strategic interest space, high likelihood of uncontrolled dissemination of nuclear technologies and equipment, weapons of mass destruction, unconventional lethal materials, perpetuation of economic, financial and social difficulties around Romania's territory, development of terrorist groups and transnational organized crime (economic-financial crime, illegal people trafficking, drug dealing etc.), limited access to vital resources that transit the area, all of which lead to separatist trends, intolerance, xenophobia, ethnic and religious conflicts, as well as huge migration among populations affected by these events.

These scenarios lead to the following conclusion: the development in Romania's interests and risks is tightly connected to the geopolitical and geostrategic areas dominated by latent and even open conflicts, as well as Russia strategic interests regarding the borders of NATO, EU and former Soviet republics.

2. Security in Romania's Proximity Area

The collapse of the global geostrategic bipolar balance in the early 90s and the rapid extension of NATO and EU have radically changed European geo-policy. Almost instantly, south-eastern Europe has drawn global actors' attention due to its diversity and integration efforts. The interest in this area is determined and promoted by various world and European actors, for the security void created in that period transformed it into an unstable arena due to political, military, ethnic, religious and economic factors. Afterwards, the military balance has been redefined. Thus, Georgia's and Ukraine's refusal expressed in the Treaty of Tashkent in 1992 compromised the CIS regional domination, whereas NATO presence in south-eastern Europe has repositioned the Alliance's southern wing into a Black Sea element. Currently, we are witnessing a strategic reconsideration of EU and NATO attitude towards this area.

The security status around Romania is dictated both by global and regional evolutions and its own interests. The frozen conflicts born at the beginning of the 21st century will continue to exist and will certainly gain new valences and dimensions. This is sustained by the present evolutions from the western Balkans, Transnistria, Caucasus and Cyprus, and the weak measures taken in order to solve the problems have not been effective. The extension of the Kosovo conflict beyond Serbian borders and the rapid spread of security instability into Macedonia and Bosnia Herzegovina is an extra argument in this respect. To the east, the conflict of Transnistria is boiling fueled by the western security bodies' lack of determination and Russia's well delineated interests. Moreover, our country's security is directly affected by Caucasian phenomena and by the two strategy

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and energy competition in the Black Sea area accompanied by a significant development of military infrastructure.

The profile of the security state in south-eastern Europe, that is, around Romania as well as the consequences of the regional states' belligerent potential and geostrategic sensitive issues, which is illustrated by vulnerabilities, crises and conflicts, power distribution and foe-or-friend relationships. The last aspect is difficult to quantify in terms of stability and cooperation for it is sustained exclusively by modernization and democratization, application of fundamental human rights and European democratic values.

The uneven level of economic development in the region, the social and political differences, the ethnic and religious rivalries, the continuation of local territorial disputes contribute to the complex regional threats. The increase or decrease in some of these threats is the result of some states' application of NATO and EU principles or, on the contrary, the lack of coherence in the clarification of other states' strategic choices. Mention should be made that the regional distribution of power proves the NATO and EU economic and military superiority, but one should never disregard Russia's significant military potential in the area. Under these circumstances, the south-eastern European challenges are posed by external conflicts and tensions, international terrorism, Islamic fundamentalism, organized crime, people trafficking, weapons and drug dealing, nuclear materials trafficking, and illegal migration of people.

*"People change, state institutions change, ideas dominating mankind change, but the great regional issues remain the same"*². If one examines carefully the geopolitical and geostrategic developments of the last two decades, one will notice that the collapse of the Soviet monopoly has offered new opportunities to the countries in the region. Also, military threats of outstanding magnitude have diminished, whereas non-military threats have increased tremendously, including frozen conflicts. At the same time, Romania's surrounding regions have become a front line between EU, which is a security provider, and the extra-union conglomerate, which is a source of insecurity. One may argue that this distribution is underpinned by two contradictory trends: the gradual inclusion of these states in NATO and EU, on the one hand, and Russia's effort to create and consolidate a political, economic and military body in the former Soviet area, in which Romania is geographically included.

From a geo-economic point of view, south-eastern Europe is shaped both by the former communist period and by the new historical trends, i.e., it is still linked to the Soviet economy and depends on the Soviet energy sources – just like most parts of Europe, which generates significant vulnerabilities. This leads to strategic disputes over the transportation routes between Russia, transit countries and global power actors having vested interests in the region. On the other hand, that is, embracing the EU realities, most south-eastern countries depend on the western support in order to stimulate the economic, social and democratic processes. Thus, some dysfunctions occur due to the old mentalities and lack of democratic traditions accompanied by the state authorities' inefficiency in fighting corruption, organized crime, illegal trafficking of people, weapons and drugs. Also, the uneven economic development of these countries has a counterproductive effect on western investors. However, one may notice that over the past two decades, regional and global institutions have actively engaged in supporting and strengthening south-eastern Europe's security by means of stimulating economic stability and progress.

² Nicolae IORGA, *Rostul națiunii române*, în revista *Neamul românesc*, nr. 2, 1911, p. 24.

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The current security environment around Romania is characterized by globalization, EU and NATO integration, as well as instability. The regional community is fully aware of this. In order to overcome these challenges, it considers permanently adopting and adapting assessment and monitoring methods, as well as developing capabilities meant to adequately react in time and space. Thus, the countries in the region have taken steps to consolidate the continental and regional security environment: the positive developments in the NATO and EU relations with Russia, Ukraine and Georgia, and the amplification of the Mediterranean Dialogue enhance dialogue and cooperation. Our country's contribution to the south-eastern Europe's stability is sustained by its position as a south NATO wing and its proximity to the frozen conflict area of former Yugoslavia, near and middle East. The political, economic and military interests from southern Caucasus and Central Asia have increased the geopolitical and geostrategic importance of south-eastern area both Europe-wide and worldwide.

The military security around Romania and its strategic area of interests has evolved since the first wave of NATO extension, when the new democracies from central and eastern Europe became allies for the purpose of preventing and overcoming threats against the international and NATO community. Once the general situation in the region has improved and changed from an open ethnic-religious conflict into a stable post-conflict one, one may notice the unquestionable presence of non-conventional threats. The impossibility to control organized crime has led to creating routes crossing the southern part of Russia, which has spread into the entire area with all the entailed negative consequences.

Another aspect worth considering is that south-eastern Europe is a well delineated security structure from a geography and civilization point of view – mainly orthodox with some catholic and Islamic interferences. State-wise, the area is fragmented into small states, according to various criteria (Albania, Bulgaria, Bosnia Herzegovina, Cyprus, Croatia, Georgia, Greece, Former Yugoslavian Republic of Macedonia, Moldavia, Montenegro, Romania, Serbia, Slovenia, and Turkey). After many political tensions and efforts, Voivodina has been granted self-administration rights, whereas Montenegro and Kosovo have separated from the federation. Transnistria undergoes a similar process, and Cyprus has been placed under UN control and divided into two regions: Turkish and Greek. The conflicts of Georgia (Abkhazia and Ossetia) are fueled by Russian hegemony trends overcome by the world's public opinion.

The regional security environment in this region is the result of centuries of accumulated tensions of an economic, cultural, ethnic, religious and nations nature. These countries are aware of these realities and therefore try to integrate in the EU and NATO bodies. Also, here there are numerous regional organizations. Unfortunately, the transition process accompanied by the frozen conflicts has led to economic discrepancies, which fueled latent conflicts. Therefore, the international community realized that solving the region's frozen conflicts had to be approached simultaneously with two other aspects: security and economic development.

Currently, the south-eastern European geopolitical and geostrategic zone – where the great European powers confronted (Germany, Russia, Britain and France) followed by the two post- World War II superpowers (USA and USSR) – is refining the process of economic, political and military restructuring that started more than twenty years ago. USA and NATO control most of the local evolutions in an attempt to prevent, stop and manage all the armed conflicts and political tensions, as well as to support south-eastern countries'

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democratization and development of market economy for the purpose of full integration in the regional, EU and NATO integration.

3. Conclusions

We hereby consider that south-eastern Europe may be regarded as a security puzzle within which historical, economic, political, military and cultural interactions act and make the area a heterogeneous system of values. At the present moment, it is a cooperation and competition zone form USA, EU, NATO, Russia, China, Germany and France, although one should not ignore the ever growing role of Turkey. Furthermore, the state constructions have not ended, which increases insecurity due to imperial trends on the one hand, and expansion of EU and NATO values on the other hand. It is obvious, however, that EU and NATO have no intention to remove or isolate Russia from the region's equation of power distribution, but include it in the system of international relationships based on security, trust and cooperation instead.

From a geostrategic viewpoint, the situation remains complex. The realities around Romania fuel the tensions and frozen conflicts from the western Balkans, Moldavia, Caucasus and eastern Mediterranean area, whose solutions are not yet to be foreseen. At the same time, the geostrategic phenomena include people, arms and drug trafficking, which calls for the involvement of important regional actors in the process of decision-making.

Romania's accession to NATO and EU has brought a significant military component to the Alliance by consolidating stability and security in the Balkans to the Black Sea and Caucasus, as well as by taking steps to the peaceful and sustainable conflict of Transnistria in the Republic of Moldavia. The complementary process of EU integration in a functional economic, political, social, and military system will result in the enhancement of democratic values and prosperity in the extended EU. In its turn, Romania will pursue its strategic interests in the area, will strengthen its position within NATO, will play a significant role in building security in central and south-eastern Europe, will support democracy building in the neighboring countries and will consolidate its position as a security and democracy provider.

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**THE NEED FOR A STRATEGY AND ROMANIA'S
STRATEGIC INTEREST IN SOUTH-EASTERN EUROPE**

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Abstract:

After more than a decade since the beginning of the 21st century, the countries of the south-eastern Europe (SEE) are engaged in a medium and short-term process of social modernization at different stages due to the unprecedented mutations occurring within the extremely diverse and dynamic international context. The internal evolutions specific to reform and transition accompanied by external participation in achieving the new European defense and security architecture pose new, complex and supplementary challenges to the countries in the region concerning their development and integration, but also real opportunities resulting from the collective defense and security system. The subsequent requirements call for a common vision on the regional strategy meant to prove useful in supporting the national and regional political factors to assume all the responsibilities for collective security and defense. It is clear, however, that the political engagement must permanently benefit from the unconditional support of the civil society.

Key words: security, strategic interest, South-Eastern Europe Strategy

1. Introduction

The foundation of the states' security should be the citizen's safety and well being, whereas democracy, cooperation and integration will guarantee the sound collective security and defense. At the same time, by protecting the national values and identity along with the assurance of necessary resources, economic, social, cultural and military program, every society will meet the development and performance needs of the united Europe. It is only in this context that SSE can become stable, strong, prosperous, and able to actively and adequately meet today's challenges of collective defense and tomorrow's uncertainties. Thus, every SEE country redefines its national interests according to the EU integration processes. Then, the national interests will provide the society with prosperity and safety, on the one hand, and the state with stability, security and democracy, on the other hand. *“Between 2001–2011, the region's degree of security decreased to manageable levels, taking into consideration that the main international actors had both the intention and the capacity to identify and overcome the conflicts”¹.* This characteristic

¹ . FRUNZETI, Teodor, ZODIAN, Vladimir – coordonatori, *Lumea 2011. Enciclopedie politică și militară. Studii strategice și de securitate*, Editura CTEA, Bucureşti, 2011, p.134

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of the current SEE environment is an extra argument favoring a SEE strategy developed by SEE people.

Essentially, a SEE strategy serving both every state entity and the system as a whole guarantees stability, democracy, fundamental rights, multilateral development, NATO and EU political and economic integration.

2. A Strategy for See Security?

SEE has always had a geopolitical and geostrategic relevance in the years that followed the radical social and political transformations of the last decade of the 20th century. Its placing at the confluence of three outstandingly important regions – the Balkans, Caucasus and Asia, as well as in the proximity of the Middle East makes it one of the world's buffer zones. Moreover, it is the cross point of four geostrategic communication routs: the Danube River, the Aegean Sea, Caucasus and the Nipre River. At the same time, SEE is the southern wing of NATO that borders northern Russia, which makes it a potential confrontation zone for the world's great powers' interests. Also, SEE position on the foreseen routes of oil and gas pipes from the Caspian and central Asian regions to the western consumers makes the importance of this region even greater in the context of the energy resources control worldwide. Then, the Black Sea ensures the neighboring countries access to the planetary ocean, and Russia's easiest way to the warm seas in the south and Suez to the east.

As a transit zone between Europe and Asia, SEE is an important way to a major part of the illegal arms, people and drug dealing as well as illegal immigration from central Asia and Middle East to the west.

The economic importance of the area must also be highlighted. The significant natural resources of the three adjacent seas – the Adriatic Sea, the Mediterranean Sea, and the Black Sea – are accompanied by industrial, commercial and tourism facilities, extended networks of airports, maritime and river harbors that can support the world's trade traffic. Also, a thorough analysis of the regional relationships shows that SEE provides various elements of interstate cooperation: economic, technical-scientific, cultural and military. Last but not least, the region is a huge market of over 400 million consumers, has a great demographic and economic potential and cheap and highly qualified labor force.

Under the aforementioned circumstances, the competition among SEE countries has increased dramatically over the last twenty years and even reached critical levels. The cause of these contradictions is the exploitation and transportation of strategic raw materials from the production regions to the consumers. The extinction of the USSR led to an increase in the commercial-political competition over the huge sources of energy from the new Caucasian states and from central Asia, that is, control over Euro-Asia. The stake is always the same: power, wealth, influence, control of security and stability by means of regional conflicts turned into frozen conflicts, political instability and fierce competition in the multinational companies' arena. Furthermore, the Caspian territories that own most of the resources belong to continental states that rely on their neighbors for the access to the western markets. Thus, SEE becomes an important and necessary transit zone for the oil products. Consequently, the new geopolitical competition from the central Asia has a two-fold determination resulting from the control over the oil and gas production accompanied by the transportation of these products to the western markets. In this way, the context becomes favorable to both parties, that is, SEE and central Asia. There are projects related

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to transporting the Caspian oil via SEE, over the Black Sea, by using a combined method – cargo and oil pipe, such as:

➤ Suapsa (Novorossysk) – Burgas (Bulgaria) – Alexandroupolis (Greece). The countries that expressed their interest in accomplishing this project are: Greece, Bulgaria, Russia, Georgia and Japan. The project stipulates transporting the Caspian oil by ships to Burgas and then via the oil pipe to Alexandroupolis, and then reloaded on ships. Thus, the passing of the supertankers through the Bosphorus straight is avoided. The pipeline will be 300 km long and will have a 35-50 million ton per annum.

➤ Suapsa – Constanta – Trieste (Italy). The states that expressed their interest in this project are: Romania, Italy, Georgia, Kazakhstan, and Slovenia. The oil pipe (Constanta – Trieste) with a total length of 1,360 km will start in Constanta harbor and will cross Serbia and Croatia. The pipe route will continue to Trieste, where it will be connected to the *Trans Alpine Pipeline* – TAP, which supplies Austria and Germany. Another junction will ensure the transport to Venice in order to supply the refineries from northern Italy. The oil pipeline will facilitate the oil transport from the Black Sea to the European market and will have a capacity of 12 million tons of oil per annum.

➤ Suapsa – Odessa (Ukraine) – Gdansk (Poland). The countries that expressed their interest in this project are: Ukraine, Georgia and Poland.

➤ The trans-Balkan pipeline Burgas-Vlora is the result of the three-party Memorandum signed by Bulgaria, Albania and the FYROM.

The transportation of natural gas also involves various projects meant to build gas pipelines: one between Russia, Ukraine, Romania, Bulgaria and Turkey, and one under the sea between Crimea and Turkey. There is also a pipeline between Russia and Greece which crosses the territory of Ukraine, Romania and Bulgaria via which Russia intends to transport more gas to Greece. Then, the Nabucco project has been developed for a unique source of gas from Russia. It involves building a pipeline that takes gas from the Caspian region and transports it to Germany and Italy via Turkey, Romania, Hungary and Austria.

Today's realities demonstrate that all the bordering countries are interested in transporting the natural resources from the Caspian Sea one way or another. One can also notice that the western actors' interest in exploiting and transporting Caspian oil has led to their involvement in solving the issues related to the funding and building the pipeline and the political projects meant to assure the entire area's stability and democracy. This interest is justified by various factors such as: the heterogeneous and complex nature of the strategic, political, social and economic choices of the component states, the interests of the rest of global and regional actors, the hypothetical SSE perspectives in the context of globalization, as well as the region's importance in the world's stability and security. Consequently, it is clear that the area displays phenomena such as: political neo-expansionism, consolidation of international stability and security with an emphasis on SEE, increasing control over energy sources and their distribution, maximizing the opportunities of democratic exposure of people's will – all of these being accomplished by various procedures of diplomatic, political, economic, cultural, military and even religious nature performed by global, regional, state, non-state, government and non-government actors. For instance, from the viewpoint of the strategic interests in the current security context, Washington supports the NATO power center to the east. As a result, the American administration pays special attention to the relation with SEE given their proximity to the Caspian, central Asia, Mediterranean and Middle East areas, which is

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where the main threats to the Euro-Atlantic security come. After 9-11, there have NATO opinions according to which the Alliance's extension should be stopped for a while. The American officials' answer was against this trend, as the former Secretary of State Collin Powell stated: *"The events of September 11 have consolidated the importance of tight cooperation and integration between USA and all the European democracies. If the US want to overcome the new challenges and threats to national security, they must build the strongest and largest possible coalition of countries that share our values and can act efficiently together. Why do we need NATO? What does this Alliance not disappear? The answer is clear: everybody wants to join this club... They want to be a part of a political and security organization which is anchored in its relationship with North America"*².

Nowadays, the SEE geopolitical and geostrategic trends takes various shapes such as: manifestation of a regional role resulted from the management of its own power (Greece, Turkey, Ukraine) or from its belonging to a global power center (Bulgaria, Croatia, Romania, Slovenia), embedding its own project in the geopolitical and geostrategic development projects (NATO, Russia, USA, EU), large survival and consolidation actions (Bosnia Herzegovina, Cyprus, Georgia, Kosovo, Republic of Moldavia), freezing the local conflicts, their economic, ideological, political and military valuing for the purpose of managing national interests (Bosnia Herzegovina, Cyprus, Georgia, Kosovo, FYROM, Transnistria).

All these developments, realities, actions, initiatives or projects emphasized so far depend on the SEE security, but this area is still experiencing conflict situations. However, the importance of NATO's right wing is growing. Taken into consideration its frozen conflicts as well as the neighborhood of conflict areas of the Middle East, SEE has acted as a buffer in the context of the non-conventional threats posed there. The unpredictable and dynamic nature of the asymmetric threats calls for the cooperation of all the SEE countries, regardless of their being a member of a military or non-military organization or not. Thus, the need for controlling and eradicating terrorism has determined the NATO allies to align their objectives in order to strengthen the southern wing of the Alliance, which is the gate to the areas that generate most threats to the Euro-Atlantic security.³

Now more than ever, Europe displays the conditions for sustainable stability. EU can successfully act, too, particularly with regard to the frozen conflicts of SEE by means of crisis management. Thus, regional and European common security is the best way to protect the SEE countries' interests. Therefore, the only option to ensure security and stability in order to consolidate democracy and prosperity is the full Euro-Atlantic integration. Being EU and NATO members guarantees security in a geopolitical area where instability, risks and threats occur on a permanent basis.

In this context, we consider that the project of a united and democratic Europe cannot be accomplished without SEE. Europe's security is inevitably linked to SEE security, as the SEE problems are interdependent. Therefore, common efforts to develop such projects are imperiously necessary, in spite of the fact that SEE continues to be a volatile zone requiring a clear strategy to encourage and sustain positive evolutions.

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3. Romania's Strategic Interest in South-Eastern Europe

Our country's geographic location is extremely favorable. It offers Romania the opportunity to control terrestrial and water communication routes that connect the Balkans to northern and central Europe, as well as eastern Europe and the Black Sea – the 4th European corridor. The temperate-continental climate favors balanced life conditions, free from extreme phenomena, the soil allows for the development of agriculture, whereas the Carpathians and the extended network of rivers support the whole picture. Geographically speaking, Romania is in SEE and plays a pivotal role in strengthening NATO's right wing. Therefore, SEE can block two energy routes: one from the east to the west, from the Middle East – the Caspian Sea – central Asia, and one from the west to the east, from the security provider, that is, NATO to the security consumer, that is, Caucasus – Middle East – central Asia.

All these aspects offers Romania an extremely important role in SEE and not only. Thus, Romania has special partnerships with Bulgaria, Turkey and Greece after its NATO and EU accession, and by bilateral and multilateral relationships with its neighbors. The administration of Bucharest considers that our country has entered the stage of democratic alignment to the Euro-Atlantic standards in two major directions: democratic expansion and eradication of terrorism. Also, Romania regards SEE as outstandingly important to the Euro-Atlantic community, which calls for a strategy to ensure stability, security, and prosperity in the area. This approach starts from the idea that, for the first time in history, SEE countries formed a community based on common interests and shared values such as freedom, democracy, human rights and war on terrorism.

The realities, trends and political-military evolutions in SEE show that Romania lies at the crossroad of American, Russian and German interests, which fuels national fears and minorities' separation trends. At the same time, Romania is close to two instability regions, where frozen conflicts still thrive. Our country does not bridge these zones, as it provides stability and crisis management instead. One can argue that Romania's relations with these actors will evolve, whereas the likelihood of armed aggression against Romania in the near future is inexistent.

Starting from the idea that Romania belongs to SEE, our country promotes its national interests by exerting its role as a regional power according to our Strategy of National Security and National Defense Strategy. The national interests are historically generated and become European interests. Thus, Romanian foreign policy considers that SEE security is important to its own national interests, and invites the Euro-Atlantic community to take part in this process. This approach is somehow against Russian and Turkish viewpoints, which argue that the countries of this area have enough potential to provide SEE security and stability. At the same time, Romania perceives the area as one of significant geostrategic opportunities, which places it at the core of every dynamic geopolitical process. According to all the countries in this area shared by the entire Euro-Atlantic community, a concrete solution is becoming more and more viable. As an important piece of this puzzle, Romania is directly interested in SEE development alongside NATO and EU by actively involving in the process of building a united Europe. The endeavors comprise fighting the following: perpetuation of frozen conflicts, political manifestations that undermine governments, illegal trafficking of weapons, drugs and people, organized crime, and extremism. Romanian diplomacy has openly expressed

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interest and support for regional cooperation and solidarity and increase the EU actions in SEE, which will make extensive use of Romania's being located in a nodal point of the global, NATO and EU businesses. Moreover, the Romanian interests aim at taking common action to express functional solidarity and common vision open to all the stakeholders.

As a SEE element and by its geopolitical, geo-economic, demographic and cultural potential, Romania is an important actor that cannot be ignored in any geostrategic strategy based on open or hidden interests in this area. Romania promotes its interests on the grounds of EU and NATO partnership and loyalty. From this point of view, SEE is perceived as a part of the global geopolitical arena due to its features such as: responsible external involvement of SEE countries in ensuring democratic stability and prosperity in Middle East, fostering efficient cooperation between USA and EU in an area where the interests of the two parties are complementary, responsible contribution to enhancing the Alliance's capacity to engage in operations outside its territory, Russia's positive involvement as a stable and predictable neighbor, encouraging economic and steady economic progress of the SEE countries. Consequently, Romania's intention and vocation is to assume a role of stability and democracy provider by stating and enhancing the EU values in the region. In this respect, we promote our national interests by valuing economic opportunities, developing economic cooperation and maritime infrastructure in the entire zone by means of cooperation with all the countries in order to assure strategic energy transportation routes from Caucasus – Caspian area to the west. From a cultural point of view, Romania has often expressed its interest in using cultural diversity as a tool to solve frozen conflicts and tensions and to protect the national and regional cultural heritage in order to preserve national identities in the wider context of a united Europe. At a social-cultural level, Romania encourages regional cooperation in the field of education by promoting the reform of educational systems and standards, as well as promoting and sustaining adequate policies to increase prosperity and living standards of SEE citizens, decreasing unemployment and eradicating poverty in a wider context of health system development.

From a different stance, Romania's strategic interest is accompanied by issues related to the Black Sea and Danube River. Our country's connection to the Planetary Ocean is due to these two factors, which is a highly valuable strategic advantage. Under these circumstances, Romania pays great attention to: assuring raw materials by means of maritime and fluvial routes, exploiting sea and undersea resources, developing and protecting economic interests related to the sea and rivers, preserving its territorial integrity within its present terrestrial, maritime and fluvial borders, ensuring fluvial access to the Black Sea area, preserving freedom of circulation on fluvial and maritime routes, protecting maritime and fluvial infrastructure, protecting the natural environment of rivers, Black Sea and Danube Delta, preventing actions meant to obstruct maritime and fluvial navigation.

The appearance and proliferation of some destabilizing phenomena in SEE – terrorism, organized crime, armed factions, illegal trafficking etc. – jeopardize and weakens the process of building democracy and rule of law. At the present moment, SEE states face post-conflict and frozen conflict situations, whereas the hidden interferences of Germany, Austria and Hungary in the Balkans, of Russia in Transnistria and Caucasus, and of Turkey in Cyprus demonstrate that SEE stability and security are still far from reality.

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The Euro-Atlantic accession and integration involved Romania's reconsideration and alignment of national interests according to the principles of the regional interests for the purpose of ensuring collective security. Thus, the Bucharest administration paid special attention to aspect such as: the citizens' fundamental rights and safety, mutual recognition of national identities by bilateral and multilateral relations, economic and social progress by actively participating in reducing discrepancies between the regional economies and between these economies and the western ones, supporting non EU and non NATO countries of SEE in order to assure prosperity and quality of life at European standards. Promoting these interests is only possible by respecting the principles of rule of law, international law, efficient dialogue and cooperation both in SEE and at an international level, within international organizations that have a say in SEE security, stability and progress.

As a component of SEE the access to the Danube River and the Black Sea and due to its position at the confluence of central European, Asian, oriental and Mediterranean zones, Romania enjoys a strategic importance reflected in its regional policies and in accordance with its status of a NATO and EU member illustrated as such:

Firstly, it is clear that Romania belongs to the European NATO and EU integrated area. In this context, we assumed the role of a relevant actor in creating and maintaining the stability of the regional security environment by taking part in actions whose purpose is to extend Europe's security zone. The convergence of EU fundamental security interests with some common historical events have made Romania participate in privileged partnerships with NATO and EU members from the SEE area in fields such as economy, trade, politics, military and collective regional security in particular.

Secondly, guaranteeing SEE stability is one of Romania's security policy. SEE has witnessed breakthroughs in solving various ethnic, religious or territorial conflicts. In geopolitical and military matters, Romania is a catalyst of regional cooperation. The essence of its involvement in SEE is represented by assuring stability and military security as well as in providing support in the reform of the security sector of the former Yugoslavian states. Romania applies the principle of *ownership* both in its own actions and in its regional actions. In this respect, Romania supports the SEE countries' objectives of European integration by advancing political solidarity platforms in order to reach a new level of cooperation and consolidation of EU accession perspectives of this geopolitical area.

Thirdly, the SEE states' stability and democratic progress as well as their capacity to contribute to the regional and EU security is outstandingly relevant to the EU arena. As a NATO and EU member, Romania contributes to building SEE stability by cooperating with its eastern neighbors by means of PSAC and PfP. Also, Romania is interested in supporting NATO-Russia cooperation by monitoring the Russian Federation's constructive contribution to NATO security. Also, Romania is actively engaged in an efficient treaty with Russia signed in 2004. Given the importance that Ukraine and Moldavia have in the NATO area, Romania supports their potential EU and NATO accession intentions, as well as increasing their capacity to fight organized crime and the identification and implementation of a lucrative solution to close the frozen conflict from Transnistria.

Last but not least, Romania wants to apply the positive results of multinational cooperation in the west Balkans, the Black Sea and Caucasus areas, which have a huge development potential insufficiently exploited so far. At the beginning of the 21st century,

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SEE can no longer remain a mere confluence of various geopolitical and geostrategic corridors. Romania's security policy aims at integrating the Black Sea, Caucasus and the Mediterranean Sea into the wider SEE context and generates a unitary perspective of their common risks and opportunities. Romania's geostrategic position is thus relevant to the regional stability, economic and social growth, infrastructure project, guaranteeing energy and communication routes at a transcontinental level, active participation in applying the NATO policies in the field of democracy building and assistance in security implementation endeavors in the spirit of NATO, EU and bilateral partnerships with Turkey, Bulgaria and Greece, and especially in the spirit of developing cooperation with the Russian Federation, which is one of the world's great powers.

The preservation and consolidation of national identity are Romania's vital strategic interests in the wider context of national values of spiritual, cultural and material nature. *"By protecting, promoting and defending them, the essential conditions for the Romanian state and citizens are ensured, according to Constitution. They are the conditions according to which the society's organization and functioning are guaranteed, both by governmental and non-governmental institutions and bodies, and by civil actions... These values are the cohesion factor of local communities and Romanian nation, the catalyst of progress and modernization, the key to a harmonious relationship between individual and national interests, in accordance with the norms of constitutional order. Their accomplishment guarantees respect for national independence and sovereignty, national, unitary and indivisible character of the state, unity based on common language, culture and spiritual life, respect for every citizen's and every community's specific identity."*⁴ The Strategy of National Security and the National Defense Strategy are the two documents that regulate Romania's actions in terms of national interests and collaboration with allied and partner security and defense organizations: the state's national character, sovereignty and independence, unity and indivisibility, the republican form of government, the independence of justice, political pluralism and the official language. These are accompanied by the common interests derived from our country's membership of NATO and EU: human dignity, citizen's rights and freedom, justice, political pluralism and private property.⁵ Thus, Romania's security and prosperity result from all the forms of promotion, consolidation and preservation of the national interests provided that security and prosperity are indispensable elements of the same equation.

4. Conclusions

So, *A strategy for south-eastern Europe?* The answer is definitely YES, which the entire aforementioned argumentation has sustained. The need for a strategy for SEE security must be acknowledged and accepted by all the SEE states and emphasized by the entire Europe. The strategy is based on the entire plethora of national interests as well as collective interests, all of them being in direct accordance with the risks and threats posed by the international security environment and the objectives meant to put these interests in practice. As a result and having in mind the national security policies at all times, it should foster regional security and stability. At the same time, one should permanently consider that collective stability is based on an integrated security system of SEE as a functional

⁴ *** *Strategia de securitate națională a României*, București, 2007, pp.8-9

⁵ *** *Strategia națională de apărare*, București, 2010, Cap. 3, p.8

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element or European and Euro-Atlantic collective security. This is how all the means, general, specific, local, institutional, regional and European regulations are entitled to accomplish, develop and express the fundamental national interests, which is perfectly illustrated by the SEE collective interests.

The strategy expresses intentions and desiderata, actions, stages and events in a strict sequence, which at the same time is flexible and able to make fast reconsiderations and adaptations to the concrete evolutions occurred in the security environment which SEE and Europe experience overall.

Globalization has considerably increased the degree of interdependence at regional level, whereas the ever growing number of risks and threats posed to general security has automatically called for the redefinition and reorientation of national strategies towards collective strategies as a direct consequence of the alliance systems after the end of the Cold War. Next, the national security policies will be put in practice in order to complete the common security and defense policies at the European level. In this context, two aspects are compulsory: being an integral part of the European security building and participating in accomplishing the objectives of the regional security assumed as a result of bilateral and multilateral relationships now and in the future. For this purpose, the objectives of national or international security must reflect the reality of national and international bodies in terms of affirming and redefining national interests within the identification, definition and assertion of national interests in order to ensure that national policies can lead to meeting the regional security objectives in a coherent manner. More precisely, the SEE common security objectives will envisage: harmonizing societies in terms of democracy, constitutional order and rule of law to facilitate collective security, strengthening national economies and economic cooperation in the area, supporting the rapid integration of the SEE in the EU, NATO and OSCE structures, which are the political, economic and military power centers at the global level, strengthening the common defense capabilities, developing civil societies, as well the procedures and mechanisms that ensure the regional sustainable progress, solving the frozen conflicts and avoiding their future occurrence, participating in the international coalition to fight terrorism.

In conclusion, adopting a SEE Strategy and applying it for the purpose of accomplishing these comprehensive objectives will provide the states and the region as a whole with numerous and significant benefits for individual and collective security, will facilitate European and Euro-Atlantic integration, and will allow for a solid and sustainable economic and social growth of SEE.

The new risks and threats posed by the international environment, the complex evolution of the internal and external security environment, as well as the radical change of the security status worldwide require that Romania should find a new approach to its strategic interests and national security objectives. At the same time, the experiences brought by the transnational terrorist attacks accompanied by the natural catastrophes at the global level emphasize the need for a strategy meant to guarantee human life, freedom and independence, as well as goods and activities at the national level.

Romania, as a European country and geographically positioned in the buffer zone of SEE, expresses and promotes its strategic interests from the inside of the influence zone of the European and Euro-Atlantic power centers. As a EU and NATO member and due to its geographical position, Romania is one of the links with the east – Ukraine, Russia,

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central Asia and their interest areas, as well the hot regions such as the Balkans and Middle East. Under these circumstances, the risks and threats posed to Romania's national security are increasing, and so is the dependence to power centers having interests sometimes opposed. Consequently, Romania's strategic interests must be deeply rooted in the national solidarity and regional unity, in harmony with the European and Euro-Atlantic values.

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**CLOUD COMPUTING -
A POTENTIAL PARADIGM CHANGE
IN INFORMATION MANAGEMENT**

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Abstract:

Since the paradigm shifts in the business landscape due to the uncertainty of economy, shortage of space, intensifying competition and a more demanding customer base, new priorities are arising for all organizations. Everything points to Cloud computing (CC) as the next game-changer in Information management.

This paper address the complex issues that could impede the efficiency of Cloud services adoption if not addressed in the early phases of cloud strategy development and design. The first paragraph critically analyzes the existing three service models.

Next, major Cloud computing benefits and issues are summarized, along with specific considerations regarding the financial aspects of the implementation. In the final paragraph, realities are examined, both from a customer and vendor perspective. It is underlined that in the governmental or military case, the most significant factor when choosing a CC service provider must be the availability and capability of it to respond to certain questions regarding legal/contractual protections for unexpected outages/loss of data.

Key words: cloud computing, cloud services, security analysis, information management.

“If you have five guys dedicated to running your e-mail system, is that really the best use of those five guys?”

1. Introduction

Cloud computing represents one of the major trends over the last decade. It represents a potential paradigm shift, that propose a rethink of the usage of standard classic computing equipments (networks, operating systems), having in mind the usual concerns regarding privacy aspects, information security and hardware/software/service reliability.

Cloud computing offers new possibilities for organizations and allows them to acquire new information age capabilities at a substantial reduced financial price. In present, there are an increasing number of organizations that realize and harness the “power of the Clod” through the usage of applications, computing solutions, storage space and networking power located outside of their network perimeter (Everything-as-a-Service - XaaS, where X virtually stands for... anything).

Cloud computing puts new demands in front of the CIOs - as Information Management leaders, because it require an abstract approach to the understanding of operational environment (Information Technology infrastructure and it’s management).

There are a lot of cloud computing providers differentiated mainly only by the reliability of services and prices offered. The main advantage for the customers is that instead of a physical device, cloud computing offers an abstraction of a server, file system,

storage, network, database, etc. that means each subscriber will receive a tailored environment. Moreover, congruent with the customers' needs, dynamic allocation of resources could be offered.

IT organizations like Google (through Gmail) and Facebook introduced people to the cloud long ago and because the services just worked, that was enough to the customers to embrace it without second thoughts and without paying too much attention to the new way the services were offered. Since then more big tech competitors appeared on the market (HP, Apple, Amazon and Microsoft), each launching marketing messages claiming they are more effective, reliable and secure than ever before.

2. Cloud Computing as a Game-Changer

With the line between private and business use of computers and networks blurring, organizations need to keep a close eye on their employee's activities on their IT infrastructure and ensure that their security is not at risk.

By itself cloud computing is simply a set of enabling technologies. The always-connected IT devices became ubiquitous and as a consequence mass adoption of the cloud based services, storage and applications seems to be imminent in order the users' expectations to be satisfied.

The main challenge is to design a cloud computing experience that is invisible and seamless for the average users and also for organizations. We should start by clarifying the meaning of acronyms and difference between all those different "-as-a-Service" terms: SaaS, PaaS and IaaS.

In the next paragraphs I'll briefly explain the meaning and the differences between Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS).

a) Software-as-a-Service

Software-as-a-Service (SaaS) is a new term for an old thing, because it was around in one format or another for many years. Web mail is the best example of a SaaS, even if most people don't think of it as such.

In contrast to the approach when customers buy software as licenses and run it on their own computers, SaaS is a Web-based offering, where a company provides a service (e.g. web mail, accounting and payroll services, customer relationship management) in an on-demand manner.

The biggest advantage is that the development, maintenance, updates, backups and so on are the responsibility of the provider. But this is also a downside, because it means that if the provider fails to perform well, those problems will be outside of your control.

Here are some popular and most used examples of SaaS:

- Google Docs;
- 37 Signals (Basecamp, Highrise, Backpack and Campfire);
- Salesforce - a suite for customer relationship management (CRM);
- Drop box - a online storage suite;
- Box.net

The primary benefit of SaaS is the reduced cost for customers and vendors. The customers will pay less than for a full word processing, spreadsheet, or other end user suite by simply paying monthly rental fees to access the online service. Software vendors would simply maintain a central online copy of the product and do not have to invest in expensive customer services.

The main downside of using SaaS (and cloud computing) is that users must trust in the vendor's capability to operate the service without major disruptions. In case of a glitch, the customers will be held "hostages" because all of their files and databases are now in the vendor's hands. A related concern regarding using SaaS is the security and protection of the users' data and also its portability. The question is if you can get your data out of the vendor's solution and move it in another place?

In conclusion, when organizations switch to SaaS and cloud computing, the administration cost to use cloud computing software will be reduced, but there will be an increase in the risks concerning service disruption, continuous connectivity and online security.

b) Platform-as-a-Service

A classic organization has its own software applications installed on its own IT infrastructure. In this approach the IT department and the CIO must worry about how many servers to deploy, how to handle load balancing, failover, managing the operating system that the software is deployed on and installing security updates.

For organizations that want to operate without worrying about the entire underlying infrastructure, want to write their own software and but ignore the infrastructure layer, the PaaS is the way to go. Some PaaS solutions are development platforms for which the development tool is hosted in the cloud and accessed through a browser. With PaaS, developers can build web applications without installing any tools on their computer and then deploy those applications without any specialized systems administration skills.

One of the reasons to embrace PaaS is it gives organizations more flexibility in terms of moving away from the service.

c) Infrastructure-as-a-Service

The term Infrastructure-as-a-Service (IaaS) refer companies that provide infrastructure, such as Amazon Web Services (AWS), that provide utility computing service (and not just a platform or ready made software). The users can run instances of Windows, Linux and other operating systems on virtual machines located "in the cloud", provided as a service.

The advantages are multiple: organizations do not have to worry about investing and managing the hardware infrastructure and could increase their compute power without a lot of financial investment. Like in the previous "aaS", the primary disadvantage is the lack of control. You don't have direct control as in the case you possess your own network.

Here are some examples of IaaS:

- Amazon Web Services (AWS);
- Rackspace Cloud;
- Vcloud ecosystem from VMware and
- OpenStack.

d) Infrastructure-as-a- Platform

The latest terms that need to be explained is Infrastructure-as-a-Platform (IaP). This trend is yet in his infancy. Roughly speaking, the concept of IaP is providing cloud infrastructure that can be dynamically scaled the same way that applications can scale on PaaS.

3. Considerations about working in the Cloud

In my opinion, cloud computing is a great opportunity primarily for small and medium organizations to unburden the inconvenience and costs of IT management, but only as long as they can live with the disadvantages.

3.1. Cloud Computing Benefits

Here are the major Cloud computing benefits along with general considerations:

- Cloud services free businesses and individuals from having to invest in hardware or install software on their own equipments; they reduce maintenance and hardware upgrading needs; older computers can be used to access cloud services, because the solutions are all web-based;
- Cloud computing provides flexibility - individuals can work from any computing device and from any location as long as they have access to the Internet - using mainly mobile devices; it also makes collaboration easier (a distributed team can work on shared information stored centrally “in the cloud”); *“As more consumers and businesses adopt tools such as smart phones and tablets, the ability to host data in the cloud and access it from just about anywhere on the planet is quickly becoming vital”* [1];
- Cloud computing lets you start up / grow your small business quickly; it’s a lot faster to rent a cloud computing application than to buy a server and install software on it; because you don’t need to buy hardware and software, your start up or expansion is also cheaper.

The transition to Cloud computing also offer *financial advantages* [2]:

- You no longer have to pay an in-house IT team to install and update software, install and manage email servers, run backups; all of the business of maintaining the service / application is the responsibility of the cloud provider;
- You no longer have to buy software; using cloud applications instead can be cheaper, at least on a short term;
- You may consolidate your separate application needs into one multi-application cloud computing service (e.g Google Apps for Business includes email, a calendar scheduling application, Google Docs for creating documents, presentations and forms and using online file storage and Google Sites for creating websites);
- You save money using someone else’s servers to store the data, consequently freeing up your own computer equipments for other purposes;
- You don’t have to spend time (and money) to update computing applications; using cloud computer applications give you the advantage of having access to the latest features and functions of an application;

3.2. Cloud Computing Disadvantages

There are also some issues when adopting cloud computing, such as: availability, security, trust and reliability.

To get the better of a cloud service, a reliable and significant Internet connection is necessary (availability), mainly due to the fact that otherwise your data may not be accessible at all. But this is not enough - you may have Internet connection and still the cloud service itself experience disruptions. Some cloud applications (e.g. Gmail) have offline capabilities that sync your work to the cloud the minute the Internet connection become available again.

Another issue with cloud computing is security. Organizations and individuals working with sensitive, proprietary or simply private information may not be comfortable storing on someone else’s server on the Internet.

Before considering moving your business in the cloud, issues like trust and reliability should also be addressed, mainly through the usage of encryption technologies for privacy protection and solutions for offline accessibility.

In my opinion the top five *disadvantages of cloud computing* (along with their possible effects on organizations) are as follows:

1) Security issues

People have the tendency to confide more on the activities they could supervise and to trust people they work along them. Applying this principle to Cloud computing means that you will trust less on your vendor, because the service provided is in the cloud. Consequently, you should not use cloud computing applications that involve using or storing data that you are not comfortable having on the Internet.

Also, reliable cloud computing vendors must possess the latest data security systems to survive on the market, expand and make revenues. Some authors argue that for small organizations, switching to the cloud can actually improve security. *“Because large cloud computing companies have more resources, he says, they are often able to offer levels of security an average small business may not be able to afford implementing on its own servers”* [1].

2) Cost

At first sight, cloud computing appears to be a lot cheaper than a particular software solution run in-house. But some other considerations (beside common sense) should be taken into consideration, such as if the cloud application have all the features that the local installed software offer.

The total cost of cloud computing usage also needs to be analyzed. Many cloud computer providers pretend that they charge only for the time the applications are actually used, but in fact, in most cases a company must sign a predetermined contract independent of actual use [3]. Also the cost savings of cloud computing is a one time activity and primarily occur when an organization first starts using it. According to Gartner, for SaaS applications the total cost of ownership in the first two years is lower, because large capital investment for licenses or support infrastructure is not required.

3) Rigidity

When choosing a cloud computing provider we must be cautious not to become dependent on the use of proprietary applications or formats. Also find out if you can add or delete cloud computing users as necessary.

4) Downtime

Even the most reliable cloud computing service providers suffer server outages. So being dependent on the reliability of your Internet connection or Cloud computing provider may not be such a good idea for yourself or your business [4].

5) Deficit (or absence) of support

Some cloud based applications offer delayed or no customer support. These quotes should be relevant for this idea. *“The bottom line: If you need handholding or if you are not comfortable trying to find advice on user forums, the cloud probably is not ideal”* [5] and *“Customer service for Web apps leaves a lot to be desired -- All too many cloud-based apps make it difficult to get customer service promptly – or at all. Sending an email and hoping for a response within 48 hours is not an acceptable way for most of us to run a business”* [6].

The number one concern for small and medium organizations seem to be the security issues related to having their commercial data “out” on the Internet. At present, the greatest beneficiaries of cloud computing may be remote workers that use mobile devices such as smart phones.

4. Cloud computing - Realities

As a matter of fact, Cloud computing is not applicable for every organization in the same way. It became increasingly important for the CIOs to plan and set their own Cloud vision and strategy to facilitate operational excellence and cost efficiency.

Since the paradigm shifts in the business landscape (the uncertainty of economy, shortage of space and power, new emphasis on green technology, intensifying competition and a more demanding customer base) new priorities are arising for all organizations. Consequently, a large scale adoption of Cloud Computing is to be predicted for the near future. Everything points to cloud computing as the next game-changer in Information management.

The CIOs (IT directors) should be ready to cope with the consequences of Cloud Computing transformation. There are many considerations and complex issues that could impede the efficiency of cloud services adoption if not addressed in the early phases of cloud strategy development and design. It is crucial for any organization to have a clear understanding of the process and develop its own cloud roadmap adoption. Also an unclouded resolution of the following questions has to be attained:

1. Is Cloud computing for our organization?
2. Is our organization ready for Cloud Computing?
3. Which type of Cloud (private, public or hybrid) is suitable?
4. How can my organization adopt easily Cloud Computing?
5. What does it mean to the organization in due course?

The adoption of Cloud Computing will transform the way Information Management is conducted in present. The leading board of the organizations should think not only from a financial perspective, but also from broader perspective briefly described by the following key questions [7]:

- What would the impact be if the asset were to become public or widely distributed?
- How would you be harmed if an employee of the cloud provider accessed the asset?
- What if the process were altered or manipulated by an outsider?
- How would you be harmed if the process or function failed to provide the expected results?
- How would you be harmed if the information/data were to be unexpectedly changed?
- How would you be harmed if the asset were to be unexpectedly unavailable for a period of time?

Before moving to/from the cloud, a risk assessment, a data discovery and information inventory should also be conducted. Information suitable for the cloud must be identified, along with procedures for interaction with information in the cloud and plans for retrieval/destruction upon potential termination of cloud based service.

The Continuity of Operations (COA) should also not be neglected. There must be addressed at least the assessment of vendors plans for contingencies (back up/disaster recovery/continuity of operations), the reviewing of Service Level Agreements (to insure timely actions) and legal/contractual protections for unexpected outages/loss of data.

From a policy / legal point of view, the CIOs must review the operating policies for completeness/currency, substantiate whether the provider is available for audit, review the incident response plans, procedures and readiness and insure capability of vendor to respond to legal requests such as litigation holds or data searches.

In the governmental or military case, the most significant factor when choosing a service provider must be not only the price, but the availability and capability of it to respond to certain questions: 1) Does the contract adequately protect the buyer? 2) Are the results of internal and external audits available to customers at their request? 3) Are customers allowed to view the provider's third party audit reports? 4) Does the cloud provider conduct network penetration tests of its cloud service infrastructure on a periodic basis? 5) Does the provider document scenarios where data may move from one physical location to another? 6) Does the provider use encryption to protect data and virtual machine images during transport across and between networks? 7) Can the cloud provider logically segment and recover data for a specific customer in the case of a failure or data loss? 8) Does the provider encrypt user data at rest (on disk/storage) as well as in transit? 9) Does the provider have anti-malware programs installed on all systems that support the cloud service offerings?

In 2011, the Department of Defense CIO states that US military is not prepared for agency wide cloud computing and cautioned against jumping too quickly into cloud computing [8]. *"If we move to a cloud environment with today's technology, it would make the world worse, not better...from an enterprise perspective and from a security perspective. We're still at stage one. How do we make sure we're doing it in a way that's secure? We have to remember that cloud services have to fit into overall services"*.

A whole move to cloud computing requires a better organization and strategy, since the volumes of data spread throughout different places could prove difficult to find and access in a cloud environment. Nevertheless, in 2012, a Cloud Computing Strategy [9] was adopted aiming to enable the DoD to increase secure information sharing and collaboration, enhance mission effectiveness, and decrease costs using cloud services.

5. Conclusions

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

The model promotes availability and is composed of three service models (Cloud Software as a Service - SaaS; Cloud Platform as a Service - PaaS; Cloud Infrastructure as a Service - IaaS) and four deployment cloud models (Private, Community, Public and Hybrid).

The Cloud Computing model offers the promise of near-term cost savings, increased ability to quickly create and deploy enterprise applications, combined with increased Information Management agility. It is considered critical that most organizations begin the adoption of this technology in response to difficult economic constraints.

However, cloud computing technology challenges many traditional approaches as datacenters and enterprise application design and management. Cloud computing is currently being used on a large scale, but security, interoperability and portability issues are still major barriers to broader adoption. To shorten the adoption cycle, guidance should be provided regarding the cloud computing paradigm and strong leadership must be exercised, to catalyze its use within private and public organizations.

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AUTOMATION MONITORING APPLICATIONS FOR iOS AND ANDROID MOBILE DEVICES

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Abstract:

Many people will be able to leave their laptop at the office and handle essentially all of their mobile computing and communications tasks with a pocket-sized device. The level of capability in contemporary smartphones and tablets is remarkable and continues to grow. In this paper is presented a method of developing remote applications for smartphones/tablets running iOS or Android operating systems designated to monitor and control industrial automations.

Key words: smartphone, tablet, remote, monitoring, controlling, wireless, network.

1.Introduction

Imagine monitoring the status of a unit under test from home while drinking coffee in the morning, or changing test parameters of a running application while at the airport. The new version of Data Dashboard for LabVIEW allows users to do all this and more. By controlling our LabVIEW applications remotely, we will save time, energy, and money.

Released in the fall of 2011, Data Dashboard for LabVIEW allows the use of iOS and Android mobile devices to view measurement data from NI LabVIEW programs on desktop or embedded systems. Using this application, we can create dashboards to display the values of network-published shared variables and deployed LabVIEW Web services on indicators, such as charts, gauges, textboxes, and LEDs. Data Dashboard 2.0 is available for the Apple iOS in the Apple App Store and for Android in Google Play, with the latest update to the app for iOS released in November 2012.

"These new apps combine the portability of mobile devices with the power of LabVIEW, helping engineers increase their productivity and meet the latest application challenges," says Ray Almgren, NI vp of product marketing core platforms.

Before now, engineers needed domain experts to create native mobile apps to remotely control and monitor their systems from their iPads. Using the new version of the Data Dashboard for LabVIEW, we can now enjoy these productivity gains without a personal app developer. The Data Dashboard for LabVIEW can connect to existing LabVIEW applications that use network-published shared variables, LabVIEW web services, or data written to the NI Technical Data Cloud.

The newest version of Data Dashboard for LabVIEW for iPads offers the following advantages:

- custom free-form layout instead of the previous version's grid layout;

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- ability to lock and share dashboards with others via email or the NI Technical Data Cloud;
- customizable color themes for controls and indicators and ability to choose background image;
- ability to have multiple dashboards with multiple pages;
- new controls and indicators like the list box, xy graph, switch, slider, and drop down;
- ability to use secure web services to interface with LabVIEW applications.

While the above features will only be available only on iPad devices, a subset of Data Dashboard for LabVIEW functionality on the iPhone (called Data Dashboard Mobile for LabVIEW) as well as selected Android phones and tablets can be accessed. Some features currently available on these platforms include the following:

- fixed-layout dashboards;
- data access via network-published shared variables or web services;
- indicators including graphs, strings, and numeric readouts;
- access to built-in device sensors (for example, accelerometers).

2. Smartphones and Tablets for Measurement and Control

Every day we see more and more people with an iPhone, Android-based phone, or other smartphone. According to Gartner Research, worldwide smartphone sales reached 472 million units in 2011, which is a 58 percent increase over 2010. Smartphones are growing in popularity and changing the way we live our lives. We no longer memorize phone numbers because we carry a phonebook in our pockets. We rarely ask for driving directions because smartphones include GPS with maps. We are connected 24/7 through email, text messaging, and now even video chat. Smartphones provide instant access to information wherever we go.

There's another game changer on the horizon—tablets. Forrester Research predicts that by 2013 tablets will outsell desktop computers in the US. Tablets are somewhere between a smartphone and a laptop. They are web-connected with touch-screen interfaces like smartphones, but they feature the screen real estate of laptops. The first to release and start gaining adoption, was the Apple iPad; however, other big players like Google, Microsoft, Samsung, HP, Amazon, and RIM have announced devices and OSs of their own. Like smartphones, tablets are poised to disrupt the traditional ways we complete common tasks. With the iPad, for example, we can intuitively download and read books, stream television shows, or read magazines and newspapers. As the technology continues to evolve and prices drop, it's only a matter of time before tablets become more widely adopted.

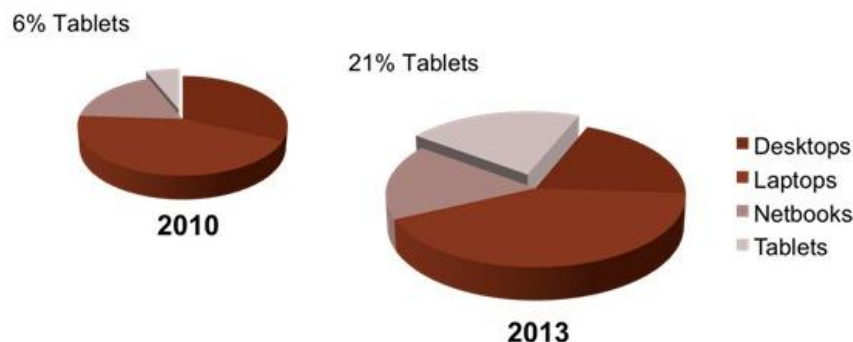


Figure 1. Researchers predict tablets will outsell desktop computers in the US by 2013.

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As more of us adopt smartphones, wireless carriers are building an infrastructure to provide Internet access to these devices from virtually anywhere. This infrastructure not only offers us access to email, sports scores, and news, it also gives engineers a vehicle for accessing measurement data from anywhere. Engineers can carry a smartphone or tablet and essentially have, right in their pockets, a human-machine interface (HMI) for remotely viewing and controlling systems. They can monitor data for trends, view historical data over periods of time, instantly receive alarms based on measurements, or remotely control an application or test sequence.

Because of their network connectivity, smartphones and tablets are great tools for remotely viewing measurements; however, their small size and processing power also make them effective for portable measurements. For portable measurements today, engineers can choose from several options such as handheld meters and portable data loggers with integrated displays. But these typically have fixed functionality that is defined by the vendor. Smartphones and tablets can offer a more flexible solution. In the future, engineers may be able to directly connect a data acquisition (DAQ) device and write software specifically for their application needs.



Figure 2. Smartphones and tablets have the potential to replace traditional handheld meters for portable measurements.

This idea of tethering a DAQ device to an off-the-shelf computing device is not a completely new concept for portable measurements. Previous attempts, such as miniature laptops, used conventional power-hungry processors and therefore provided unusable short battery life. Personal digital assistants (PDAs) offered longer battery life and were useful for some applications, but their underpowered processors limited their functionality.

These devices have evolved into today's smartphones and tablets. They now pack more processing power than standard desktop PCs did 10 years ago and can be used to write more powerful processing routines for inline analysis directly on a device. The processors consume less power than standard PC processors so the devices are useful for longer periods of time. They include gigabytes of data storage, providing ample room to save logged data. Touch-screen technology offers an intuitive way of interacting with the user interface, which can be designed to mimic application-specific knobs, buttons, and

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controls. The features in mobile computing devices have evolved to create a viable platform for portable measurements that exceeds the capabilities of traditional methods.

Building an application for a smartphone or tablet is not a trivial task. National Instruments has recognized that many of its customers have limited or no expertise programming for mobile platforms. To help engineers take advantage of these devices, NI has created several tools for remotely viewing measurements and connecting to data acquisition hardware.

3. Remotely Monitor and Control Automations with the Data Dashboard for LabVIEW app

With the Data Dashboard for LabVIEW app, engineers can create a custom, portable view of NI LabVIEW software applications. The app displays the values of network-published shared variables and/or Web services on charts, gauges, text indicators, and LEDs. Users can create custom layouts of one, two, four, or six indicators and quickly swipe between multiple layouts.



Figure 3. The Data Dashboard for LabVIEW displays the values of network-published shared variables and/or Web services.

To view an application from the Data Dashboard for LabVIEW, engineers must first create a desktop or embedded application that publishes data to the network. This can be done in one of two ways:

1. The simplest way is to add network-published shared variables to a LabVIEW VI. Using the shared variable, data is shared between loops on a single diagram or between VIs across the network. It is configured at edit time using property dialogs and no configuration code is required in the application.
2. For more sensitive IT environments, engineers can add Web services to the application to invoke a method on a remote target using standard HTTP protocols. In this configuration, the Data Dashboard sends a request to the LabVIEW application, which processes the request and replies with a response.

With the LabVIEW Web server, VIs can be deployed as Web services.

Before linking the dashboard controls and indicators we need to have variables to connect to. To deploy network-published shared variables we will need to create a project in LabVIEW. In the Project Explorer window we have to right-click on My Computer and select New>>Variable.

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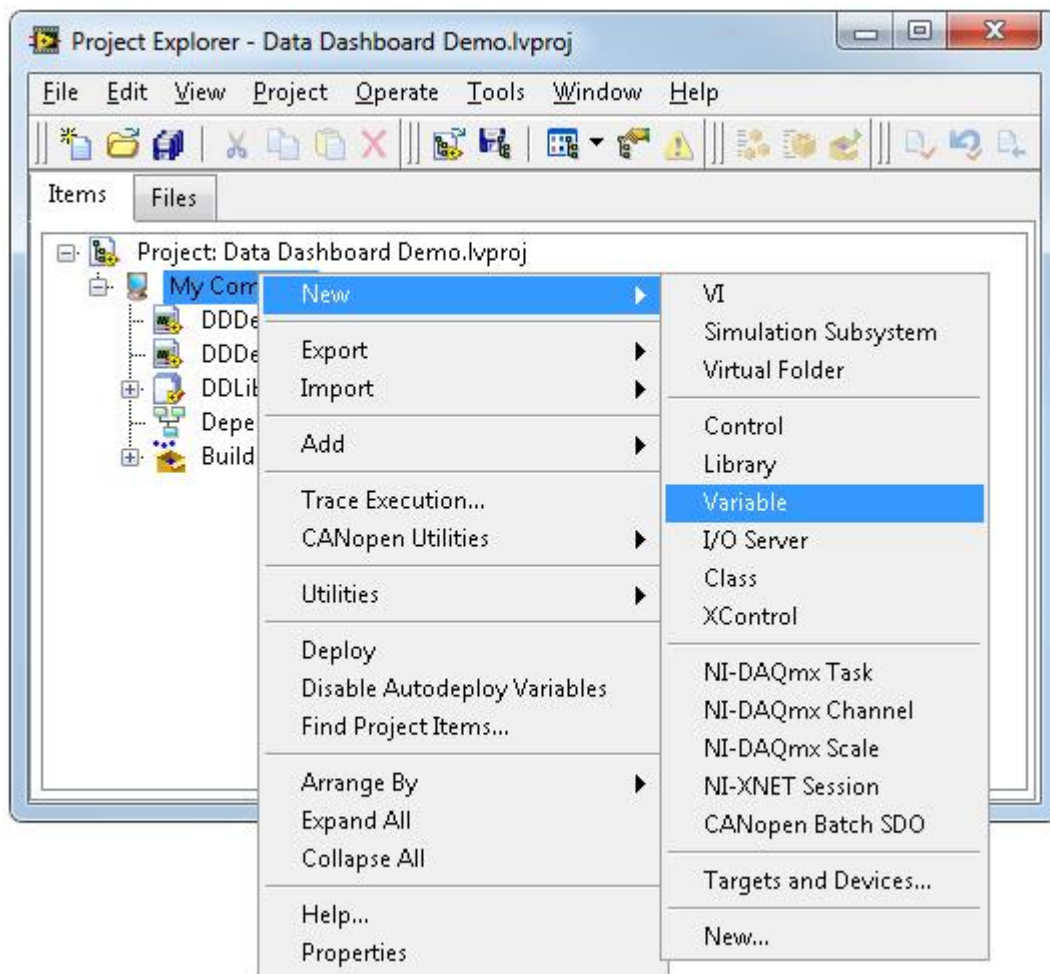


Figure 4. Creating the network-published shared variables in LabVIEW.

In order to use it, we have to drag the shared variable created from the **Project Explorer** window onto the block diagram, and then to right-click on the shared variable and select **Access Mode>>Write** (or **Read**). We must deploy the shared variable before displaying its value in the Data Dashboard and for that, in the **Project Explorer** window, right-click the project library that contains the shared variable and select **Deploy**. Build and run the application to continuously update the shared variable.

In order to create a Web Service and a Web method to connect the data dashboard, we have to right-click **Build Specifications** in the **Project Explorer** window and select **New>>Web Service (RESTful)**. On the Information page, we have to select the name of the Web service and its destination directory. Use the default settings. On the **Source Files** page, use the **Add Item** arrow to move the created VI from the **Project Files** tree to the **Service VIs** tree.

Build the project, and then right-click on VI's build specification in the Project Explorer window and select **Deploy** to deploy the Web service application.

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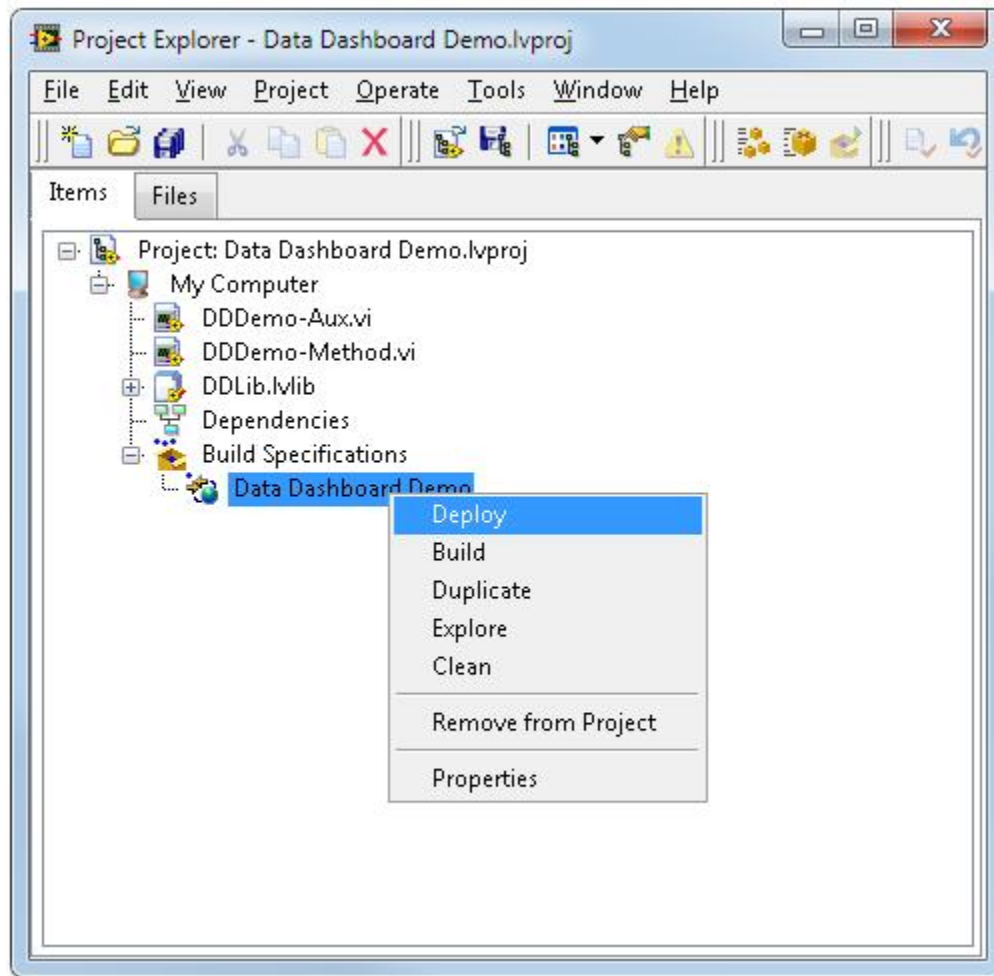


Figure 5. Deploying a Web service application in LabVIEW.

After the application is developed and Web services or shared variables are deployed, building a dashboard is as simple as browsing to the server and choosing the signals to monitor. Numeric, Boolean, or string data types can be monitored and each data type features multiple indicator types including LEDs and charts. The Data Dashboard Mobile for LabVIEW app has the same functionality, but only has one indicator per dashboard instead of the multiple indicator layout more easily readable on a tablet.

To place indicators on the dashboard drag them from the pallet onto the page. The next step is to link the indicators to the data connections. Tap the **Chart** indicator and select the **Data Link** icon. This will open the Connect dialog. Select **Shared Variables** in the Connect dialog. Then, enter the Shared Variable server DNS or IP address. Tap **Connect** to connect to the Share Variable Engine. Tap the name of the library that contains the deployed shared variable, and then select your shared variable. The data type of each shared variable is listed below the variable name.

Data Dashboard 2.0 only allows you to select shared variables that are compatible with the data type of the selected indicator. You can customize the chart's appearance by selecting the properties menu shown below. Then run the dashboard by selecting **Play** in the upper right hand corner.

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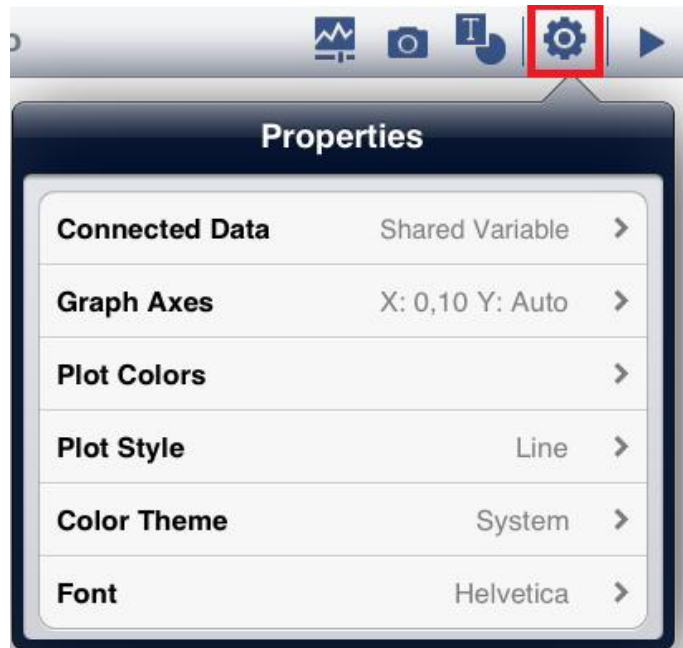


Figure 6. The Properties menu of a chart connected with a shared variable in Data Dashboard 2.0 on the iPad.

If we have placed down the indicators and deployed the Web Service, we can link our dashboard indicators to the Web methods. There are two ways to connect to a Web method, polling and calling. Polling a Web method calls the Web method continuously every .3 to 30 seconds as specified by the user. Calling a Web method only calls the Web method when the Call button is pressed. Tap the **Controls and Indicators** icon and select **LabVIEW Web Services**. Drag a **Poll Web Service** to the dashboard and select the **Web Link** icon. The Web Services connection dialog will open and you will be able to enter the server DNS or IP address, and Port of your Web Service. Tap **Connect**.



Figure 7. The Web Services dialog box in Data Dashboard 2.0 on the iPad.

Next, you will see a display of Web Services hosted on your target. Choose your Web Service and then, the Web Method you want to link to your poll. When the Web method connects successfully, you will see the Web Link icon turn green. You will now see an overlay that shows you which indicators on the dashboard that you can link to your variable. Tap the Chart to link your Web method variable to the chart indicator. You can also choose to create a new indicator from the overlay.

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With the Data Dashboard for LabVIEW app on the iPad, engineers can develop customized dashboards that can both monitor and control applications. With iPads making up the majority of industrial tablets used worldwide as of 2012, this functionality is first being brought to this platform with an eye on future hardware trends. With this new functionality, users can create complete free-form layouts for their dashboards, add custom background images and control/indicator color themes, connect securely to applications using secure LabVIEW web services, and sharing mechanisms for dashboards.

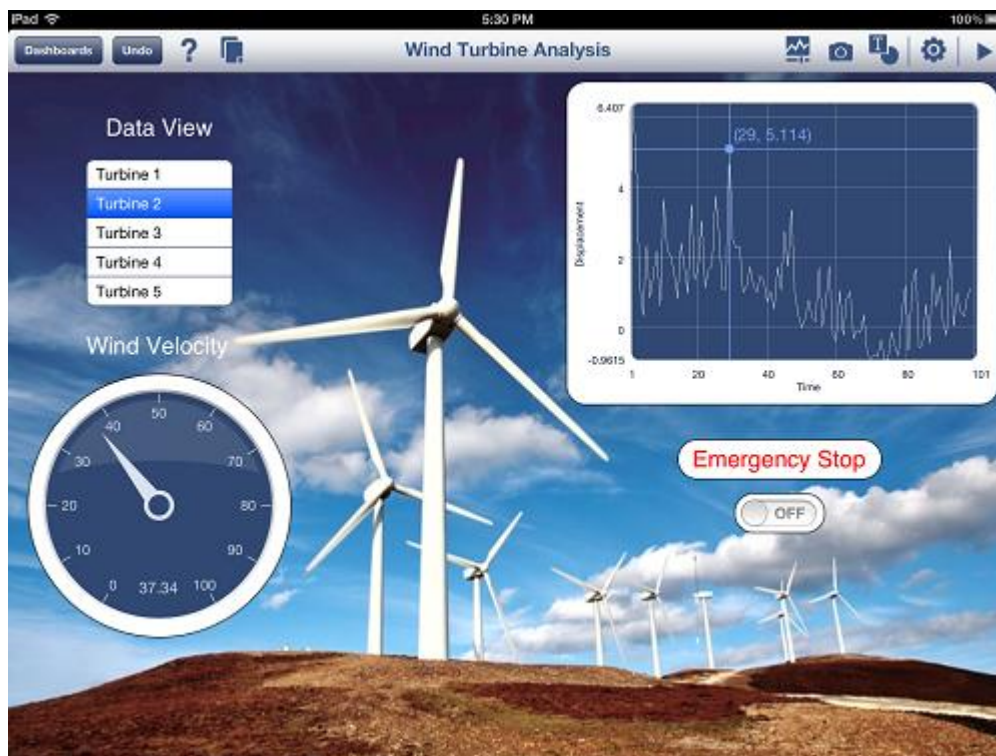


Figure 8. The Data Dashboard for LabVIEW app running on the iPad

In addition to reading data from network-published shared variables or web services, we have the ability to add dashboard controls to write data or commands over the network. New controls and indicators give us more flexibility to create the dashboard needed for the application. Once added to the dashboard, controls and indicators can be connected to data for monitoring and control.

With the enhanced Data Dashboard for LabVIEW app, we can send our favorite dashboards to colleagues via email or the NI cloud. We also have the option to lock our dashboards for read-only access once distributed. If our colleague receives a dashboard through email and has the same Data Dashboard for LabVIEW app installed, then it will automatically open the app when opened from email.

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Figure 9. The controls and indicators available in Data Dashboard for LabVIEW app running on the iPad

The improved app will enable creating, editing, and saving multiple dashboards on a single device. In addition, we have the ability to add multiple pages to each dashboard we create. The dashboards are displayed on a "carousel" that can be swiped through and we can choose the one we would like to work on. Once opened, we can customize and change the dashboard or run it.

The new Data Dashboard for LabVIEW app will enable linking controls and indicators to secure LabVIEW web services. By using secure LabVIEW web services, dashboard users will have to login using IDs and passwords setup by the developer and have the digital API key to access the application. By configuring secure web services, developers can have groups of user IDs have access to only monitor data while other groups have the ability to control and monitor the application. Properly configuring an API security key for a web service during the configuration process allows only requests coming with that particular key access to any data.

Data Dashboard does not support all Shared Variable data types, Web method request types, and Web method output data types. In unsupported cases Data Dashboard will choose to not display these items rather than not allow the user to connect. Data types supported by the Data Dashboard 1.0 are outline below.

Shared Variable Data Type	I8, U8, I16, U16, I32, U32, I64, U64, SGL, DBL, Boolean, and String
Web Method Indicator Data Type	I8, U8, I16, U16, I32, U32, I64, U64, SGL, DBL, Boolean, and String
Web Method Request Types	GET
Web Method Output Type/Format	Terminal/XML

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4. Conclusion

We often consider smartphones and tablets recreational devices for playing games and streaming videos, but they can also be powerful engineering tools. Desktop PCs and laptops, for example, are commonly used for simple tasks like Internet browsing, word processing, and gaming. But they are also one of the most important tools engineers use for designing, validating, and producing products. Engineers use PCs to take measurements, store data, automate tests, perform analysis, create reports, and much more. The extreme portability and web connectivity of smartphones and tablets make them exciting recreational devices, but these features also present interesting use cases for measurement and control applications. Smartphones and tablets offer engineers a way to remotely measure and control systems and a new platform for portable measurements.

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THE USE OF PRODUCTION ANALYSIS MODELS IN OPTIMIZING THE DEVELOPMENT OF MILITARY CAPABILITIES

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Abstract:

CPB intends to provide a better response to more dynamic and various risks and threats that address the economic, political, social and military stability of the contemporary world. In view of the aforementioned aspects, this paper intends to present an analysis of different ways in which the CPB process and the process of developing military capabilities may be modeled, taking into consideration the economical aspect of maximizing the required benefits while minimizing costs

Key words: capabilities based planning, production analysis, models, outputs, inputs

1.Introduction

Capability Based Planning (CPB) is considered for a while to be a big challenge for the modern states regarding the defense resources management. This concept is an integrated part of continuous process of the military structures transformation, during peace time and/or military operations.

CPB intends to provide a better response to more dynamic and various risks and threats that address the economic, political, social and military stability of the contemporary world. As any of other defense activity, CPB requires certain resources for the purpose of analysis, identification, design and implementation of both planning concept and production and utilization of the military capability. The aforementioned resources are human, financial, material and informational.

We are now facing a difficult period, full of economical and financial crises and increased uncertainty. All these issues challenge the nations in different degrees, according to their preparedness and level of development. Due to the intensity of the crisis, the effects may be observed not only in the economic and financial fields, but also in other areas of activity, like the military. This is the reason for the need of all the specialists involved in defense planning to figure out the necessity of implementing a more effective resource management for all the activities associated to the military. It is hard to believe that the allocation systems which were used before the onset of the crisis are still reliable and can be further used in order to guarantee the success of the military activities.

According with the aforementioned aspects, this paper intend to present an analysis of a potential way to optimize the CPB process itself and the associated military capabilities, using models applicable in the economic field of production analysis, related to the economical aspect of maximizing the required benefits while minimizing the costs.

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2. Production analysis models and the military capabilities development

In view of the aforementioned aspects, this paper intends to present an analysis of different ways in which the CPB process and the process of developing military capabilities may be modeled, taking into consideration the economical aspect of maximizing the required benefits while minimizing costs.

The Capability Based Planning process has been defined as a “method which involves a functional analysis of operational requirements. Capabilities are identified based on the tasks required... Once the required capability inventory is defined, the most cost effective and efficient options to satisfy the requirements are sought.”[1]. A more comprehensive approach defines CBP as “planning, under uncertainty, to provide capabilities suitable for a wide range of modern-day challenges and circumstances while working within an economic framework that necessitates choice.”[2]

The process is based on the concept of military capability (defined as “the ability to provide an operational effect required by the operational standards specific to an environment, in a specified time and to sustain that effect for a specified period of time; it is provided by a system consisting of Doctrine, Organization, Training, Materiel, Leadership development, Personnel, Facilities, Interoperability (DOTMLPFI) readiness, deployability”)[3] and starts with the setting of goals of objectives for the military at the political/strategic level, followed by the identification of shortfalls and capability needs. These result from mission area assessments and identification of scenarios, followed by the identification and analyses of potential ways of action, including the analysis of risk.

The concept of planning on capabilities has been adopted not only by individual countries, but also by NATO; thus, the “NATO Defense Planning Process consists of five steps: establishing the Political Guidance, determining the Minimum Capabilities Requirements, Apportion the requirements and set targets, Facilitate the implementation and review the results in the form of Capability Review”[4].

The optimization of the military capability production process is considered analogue with the production of goods and services, the basis of the market economy. Each military capability can be considered as a mix of resources which will be used to perform a certain mission. This mix of resources must consider first of all the purpose of its existence and generate the maximum benefit. At the same time, because of the resource scarcity, the use of this mix must be considered in the economic context. These two aspects have opposing effects, but defense experts have enough room to develop a multitude of accurate scenarios based on different resource envelopes which are available. The decision-makers may also benefit from this multitude of scenarios and better integrate their decisions, both at the horizontal level and at vertical levels.

If we consider the production of a military capability represents a transformation of inputs into outputs, we can state that this process follows the general model of the Cobb-Douglas production function. This model assumes the transformation of two inputs, labor and capital, in a single output, in this case the required military capability. Of course, each element of the military capability (human, material, financial, informational) will be part of one of these inputs.

The mathematical expression of Cobb-Douglas production function for a military capability is represented below

$$MC = A \cdot K^\alpha \cdot L^\beta$$

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where: MC = the monetary value of the required military capability

A = total value of the productivity

K = the monetary value of the capital (materials, financial resources, information)

L = the monetary value of labor

α = the elasticity of capital

β = the elasticity of labor

The economic theory in general covers a wide range of the production process of goods and services. All this aspects consider mostly profit and cost to be relevant factors in taking a decision. In the case of military, the concept of benefits is more appropriate than that of profit. In this respect it is very important to design with accuracy the production function needed for the specific military capability. The military capability design should be based on phenomenological research, such as statistical determination of most stable correlation among military capability production indicators (mean, marginal, substitution, elasticity). After this research is done the next step should be the designing process of the production function in two steps:

1. Establish the stable correlation among indicators, by using a differential equation with labor productivity as unique variable;

2. Integrate the equation to obtain the production function with the analysis of the effects of technological change.

In the case we ignore the technological change, situation that should not be taken in consideration, a range of induced production functions will be obtained, such as: elasticity, marginal efficiency, marginal rate of substitution, elasticity of substitution.

Induced production functions such as elasticity are based on statistic data which highlight a stable statistic link between elasticity and labor:

$$EL = h(kt)$$

where: $h: R \rightarrow R$ is an elementary function, which may be linear, parabolic, hyperbolic, logarithmic, exponential, and other types, according to the statistical methodology of specifying, estimating, and parametric and consistency testing. This specific situation occurs when defense experts who are involved in the development of the military capability production function model put more emphasis on human factor. The production function in this case should be:

$$MC(K, L) = A \cdot K \cdot e^{-H(\frac{K}{L})}$$

where: MC(K,L) = the monetary value of the required military capability

A = total value of the productivity

K = the monetary value of the capital

Induced production functions such as marginal efficiency are based on statistic data which show that marginal productivity is dependent on average productivity

$$\eta L = h(wL(k))$$

where $h: R^+ \rightarrow R^+$. This dependency is based on achievement of optimal condition to produce the desired military capability with maximum benefits at the minimum costs.

The production function in this situation is:

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$$MC(K, L) = L \cdot G^{-1} \cdot \left(\ln \frac{K}{L} + \ln c \right)$$

where: L = the monetary value of labor
 K = the monetary value of the capital
 c = constant

$$G(f(k)) = \int \frac{f'(k)}{f(k) - h(f(k))} dk$$

The induced production functions, such as marginal rate of substitution, are based upon statistical analysis of the marginal rate of technical substitution which emphasizes the military capability production dependency to the technical level. If marginal rate of substitution is constant, reflecting the perfect alignment of input costs with inflation rate, we are obtaining the following formula:

$$MC(K, L) = A \cdot [K + L]^\rho$$

ρ = function's homogenous degree
 β = marginal rate of substitution

The induced production functions such as elasticity of substitution are based upon correlation between coefficient of substitution elasticity and technical level per capita. The production functions can be designed in different ways according to the situations but relevant forms are the following:

Sato's production function:

$$MC(K, L) = A \cdot \frac{K^2 L^2}{\alpha K^3 + \beta L^3}$$

, for $\alpha, \beta > 0$

where: A = total value of the productivity

L = the monetary value of labor

K = the monetary value of the capital

α = the elasticity of capital

β = the elasticity of labor

Allen's production function:

$$MC(K, L) = \sqrt{2\gamma KL - \alpha L^2 - \beta K^2}, \text{ for } \alpha, \beta > 0 \text{ and } \gamma^2 > \alpha\beta$$

where: L = the monetary value of labor

K = the monetary value of the capital

α = the elasticity of capital

β = the elasticity of labor

γ = the variable elasticity of substitution

As I have mentioned before, the process of obtaining military capabilities can not be separated of technical change. This progress is never ending and its speed is increasing. In the same time the defense experts involved in the process of producing military capabilities are challenged by the economical aspect. The technical change is a powerful

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factor which generates the increase of the output even the volume of the inputs remains the same on the short term. In this respect is important to introduce in all mathematical representations of the production functions another factor – time.

$$MC_t = f(K_t, L_t, t)$$

This new factor will review all the indicators that defense experts may take into consideration while developing the model of military capability production function in order to obtain the optimum output. The use of time like another powerful factor inside of military capability production functions with technical change will allow a more precisely quantification of the output increase, and the level of the military capability respectively.

According to the economic literature, the technical change can be expressed as:

- neutral (Hicks – 1932),
- unbiased (Harrod's or Solow's type),
- biased (Solow's or Weiszacker' type),
- induced (by the factor's quality – Nelson's or Denison's type; by the experience – Arrow's type).

The production functions with neutral technical change (Hicks) for a military capability may be the following:

$$MC(K_t, L_t, t) = A \cdot e^{Tt} \cdot G(K_t, L_t)$$

where:

A = the capital productivity coefficient of progress change

G = the labor productivity coefficient of progress change

Lt = the monetary value of labor at time t

Kt = the monetary value of the capital at time t

This function form allows the experts to take into consideration the same influence of the progress change on output through capital and labor.

The production functions with unbiased progress change, Solow type, are based on the fact that marginal efficiency of labor is not modify over time, but is dependent on average productivity. In the case of military capabilities is a little bit harder but not impossible to analyze the impact of the personnel's wages according with their productivity, no matter of time. In this respect, the defense experts have to determine the adequate performance indicators of the military activity and to pursue the acceptance of them by the system. I consider that this might be one of the ways to increase the performance of the military system, by implementing a real philosophy about economy of military inputs. Mathematical expression of the production function with unbiased progress change, Solow type, for a military capability may be the follow:

$$MC(K_t, L_t, t) = L_t \cdot G^{-1}[A(t) \cdot \frac{K_t}{L_t}]$$

where:

Lt = the monetary value of labor at time t

Kt = the monetary value of the capital at time t

A = the capital productivity coefficient of progress change

G = the labor productivity coefficient of progress change

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This formula shows us that the progress change is acting mostly through the capital but this is also a powerful generator of human labor.

Nevertheless, the complexity of military capability production process assumes that progress change is acting differently from generation to generation of production factors. The new generations are incorporating the scientific and technical progress due to the last discoveries in various fields of science and technology. I have to reaffirm that a military capability comprise a wide range of resources, each of them affected by deep transformations due to military or civilian research. The new production factors contribute more to the production than the oldest, at the same quantity of use. This is the case both for capital and for labor. The new generations of the defense personnel are more specialized and adapted to use the latest information technologies. This aspect will determine a much better blend between the users and future military systems to be used.

In the case of the Solow model with biased progress change in specific generation of capital, it can be shown that the investments play a crucial role, as a key vector of progress change, even if the depreciation of the fix assets has to be assumed and monitored. In the case of military capabilities, the high initial investment sometimes transcends the efficiency and effectiveness from the economic point of view. In this respect, the defense experts have to establish an accurate aim of the military capability and the optimum ways to obtain it. They have to formulate viable solutions to decelerate the military capabilities depreciation, because of the difficulties to evaluate the benefits after using the military capability or just its existence as a discouraging factor. To make things a little bit more complicated, the defense experts have to figure out that in parallel with the main stream of the progress change, another small stream will be present, an unbiased progress change generated by the entire process management of the military system, at the specific moment when the picture is being interpreted.

If the human factor is biased by progress change, it can be assumed that each new generation of input (labor) will contribute more to output increase than the previous one. A very used model in the market economy is Weiszacker model which introduce relevant performance indicators in order to enrich the production functions typology as follows:

- $N_{\tau t}$ number of employees at current time t , being employed for τ years, considered after finishing desired adequate studies;

- efficiency of an employee of $N_{\tau t}$ category;

- the duration of supplementary studies to increase professionalism;

- the depreciation rate of knowledge due to time passing;

- accumulated experience thru work and continuous learning.

Following this arguments, a formula of the military capability production functions with three trends can be expressed as follows:

$$MC_t = B \cdot [(1 + \mu)(1 + \gamma)]^t \cdot \left[\sum_{z=t-\theta_K}^t (1 + a)^{\frac{z}{\theta_K}} \cdot (1 - \phi)^{t-z} \cdot I_z \right] \cdot \left[\sum_{z=t-L}^t N_{z_t} \cdot g(n_{z_t}) \right]$$

where:

B = constant

μ = constant pace of biased progress change

γ = the variable elasticity of substitution

θ_K = the age of oldest generation of capital

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θ_L = the age of the oldest generation of labor

λ = the pace of the progress change of each capital generations

More complicated models for production functions with biased progress change can be represented, such Denison-Nelson model. This model may offer to defense experts the possibility to identify carefully the potential volumes of capital and labor regardless to relevant factors of the core process. Some of these factors related to capital should be: the pace of capital increase, the pace of biased progress change and impact over capital change and mean service life. Some quantitative and qualitative factors related to potential volume of labor should be: the pace of physical labor increase (quantitative), the pace of biased progress change to human factor due to higher specialization, work experience and use of IT in all activities. Even in this case, the defense experts have to take into consideration the aspect of residual stream of autonomous biased progress change due to overall management of the defense system.

3. Conclusion

The production of a military capability is a complex, challenging and resource consuming process. The optimization of this process must be a high priority for the defense experts and for decision-makers because of time and resources available.

In my opinion, various economy-proofed models may be implemented in the production of the desired military capabilities after a careful selection and implementation. Putting more economic science to work in this field, it should drive to a better formulation of military capability model which can offer a better simulator before to start to build it.

The use of production functions may be the source of a better resource allocation and link among relevant risk and threats that address national security and the aims and objectives of the defense sector.

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CHANGE CONVERSATION STYLE:
CHANGE THE ORGANIZATION

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Abstract: Using conversation as a method to incur organizational change is no longer a novelty in the field. However, the suggestion made by this paper is that change can only occur when the prevailing conversational style employed by organizations aiming at undertaking transformation efforts is changed first.

Moreover, the approach taken focuses on the dynamic nature of the organizational environment described by the verbal interactions and conversation patterns of work groups and individuals. Thus, as opposed to the mechanistic views often taken when trying to change organizations, this paper proposes that change has to occur at the level of employees and, more specifically at the level of naming and talking about organizational issues. The proposition underlying this is that while changing the attitude or behavior of people may be difficult if not impossible, focusing on their conversational style and linguistic patterns and molding these is more likely to trigger expected results. In this respect, it is worth reminding that any sentence formulated by an employee can be viewed as an organization’s “health” indicator given the specific organizational context underlying it, as well as the organizational roles and identities it mirrors (Heritage2010:42).

Key words: conversation style, organization change, dialogue, Conversation Analysis, change program

1. Introduction

Using conversation as a method to incur organizational change is no longer a novelty in the field. However, the suggestion made by this paper is that change can only occur when the prevailing conversational style employed by organizations aiming at undertaking transformation efforts is changed first.

Moreover, the approach taken focuses on the dynamic nature of the organizational environment described by the verbal interactions and conversation patterns of work groups and individuals. Thus, as opposed to the mechanistic views often taken when trying to change organizations, this paper proposes that change has to occur at the level of employees and, more specifically at the level of naming and talking about organizational issues. The proposition underlying this is that while changing the attitude or behavior of people may be difficult if not impossible, focusing on their conversational style and linguistic patterns and molding these is more likely to trigger expected results. In this respect, it is worth reminding that any sentence formulated by an employee can be viewed as an organization’s “health” indicator given the specific organizational context underlying it, as well as the organizational roles and identities it mirrors (Heritage2010:42).

With a view to all of the above, this paper is structured in three parts. First, it focuses on terminological delineations such as conversation, dialogue and conversational style. Second, it highlights the steps taken by two of the most known methods that employ conversation as a trigger of organizational change. In the end, it presents a three-stage

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program based on which organizational change can occur through the transformation of conversational style.

2. Terminological delineations

In order to mold organizational conversation style based on the elements characteristic of individual conversation style, it is necessary to clearly delineate the underlying principles of conversation in general, rather than its normative guidelines (Moeschler, Reboul, 1999:57). Therefore, a clear understanding of the conceptual dimensions describing the terms of “conversation” and “dialogue” is required.

2.1. A conceptual approach to conversation:

Conversation, as a basic concept of the discipline known as Conversation Analysis, is defined as *talk-in-interaction* (Hutchby, Wooffitt, 2008:12). In this respect, conversation is seen as the core of interactions (Schegloff 1979:23-78), as a prototype means of language use, of dialogic oral communication during which participants deliberately assume the role of message transmitter (Levinson 1983:284-285). Schegloff (1995:187, 1987:222) insists that the day-to-day conversations are actually the means through which the talk-in-interaction occurs and, hence, social institutions are established, while Ionescu-Ruxăndoiu (1999:37) characterizes conversation as the most frequent speech form.

According to linguistic anthropology, conversation plays an important role in maintaining the cultural habits of individuals and communities in terms of establishing and preserving (Duranti, 2006: 169) identity, subjectivity, ideas, categories, attitudes, values, etc.

The salient feature of conversation is its unpredictability, spontaneity. Thus, in terms of the occurrence of verbal interactions and their sequencing, very few of these follow a predetermined pattern (Sacks, Schegloff, Jefferson 1974). Moreover, as Ionescu-Ruxăndoiu (1999:39-42) points out, there are a few more defining characteristics of conversation such as: continuity, interactional purpose described by the different and sometimes contradictory objectives of the interlocutors, context framing, the creation and recreation of a certain context, the structured interventions of the speakers.

2.2. Day-to-day conversation – organizational conversation

The common characteristic that both day-to-day conversation and organizational conversation share is the sequencing of speech acts. The differences emerge when details come into play. Thus, the day-to-day conversation is rational, teleological and yet defined by the sum of language games that come into play (Nofsinger, 1991:6). Moreover, it is based on unplanned interactions among actors who follow a given set of rules/patterns (Nofsinger, 4). From this point of view, Schegloff (1987: 222) highlights the core difference between current conversations and organizational conversation: while the former is based on interactional patterns generated at individual level, the latter is the result of the patterns/norms characteristic of the formal social structures in place.

Moreover, current conversation is the predominant type of human interaction in society and the main instrument employed for socialization purposes. Therefore it is the forerunner of any institutional (i.e. organizational or family) conversation. In addition, the day-to-day conversation is not a conventional one, nor does it become subject to swift historical changes that trigger linguistic patterns centered on equity and efficiency oriented arguments. By comparison, institutionalized conversation is defined by tasks and roles inherent in the script of any organization. Consequently,

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by contrast with the behavioral flexibility incurred by day-to-day conversation, organizational conversation places bounds and constraints on behavioral manifestations of individuals (Atkinson, 1982:86-117).

From a theoretical standpoint, it is difficult to find a clear-cut delineation between day-to-day conversation and organizational conversation (Schegloff 1999, Heritage 2005). However, at practical level, the interlocutors are able to do this and hence, act in accordance (Drew, Sorjonen 1997:92-118). Research in the field of institutional conversation analysis has highlighted the existence of unique conversational prints at organizational level that are defined by the ideology, identity, beliefs related to the profession of the individuals, as well as to organizational, methodologies, rules and regulations.

Concerning the differences between the two types of conversation, Ionescu- Ruxăndoiu (1999:39) says:

“Conversation is defined by contrast with discussion, the latter requiring an institutional framework (e.g. school, court, etc.) and at least the partial pre-assignment of the transmitter role. As with conversation, the participants act as individuals to whom status and role constraints may impose some restrictions but without necessarily impacting the interaction. On the other hand, a discussion unfolds from the perspective of the social roles assumed/assigned by the participants. The differences between conversation and discussion lie in the topics approached: a conversation does not impose any limits on this, whereas the discussion topic is strictly dependent on the institutional framework where it occurs.”

2.3. Conversation – dialogue

The word “dialogue” comes from the Greek words: *dia*, meaning “through, by the means of” and “logos” whose meaning depends on the context of usage. Thus, “logos” is derived from “lego” with the primary meaning of “speaking, talking” (which for the Greeks actually meant expressing a set of ideas). Later on it acquired the meanings of “thinking”, “word”, “reason”.

According to Plato, dialogue is a manner of dialectically exploring human nature and experience. From this perspective, the concept does not solely refer to the encounter between a “me” and “you” through talk, but to a more profound mutual understanding, acknowledgment of the other and respect (Prosser, 1978:227).

Nowadays, communication sciences (Dixon, 1996:24) define dialogue as the talk between two people occurring with the purpose of establishing a bilateral relationship built on reciprocity and merger. Thus, without excluding the likelihood of misunderstandings, confrontations the dialogic communication unfolds as long as the legitimacy of the perspectives expressed by all the interlocutors is acknowledged. Consequently, the concept of dialogue is defined as the interpersonal dynamics built on dialogic speech acts like: asking direct questions, presenting personal ideas/opinions, arguing, debating, etc. the ultimate goal of dialogue is to bring to the surface what is known and yet not disclosed, to acknowledge the existential paradigm by which interlocutors define themselves. Hence, dialogue is about coherence and any statement must be viewed as part of a personal history that needs to be told. In addition, dialogues is defined as reciprocity, as taking responsibility for the other without expecting him/her to do the same (Levinas, 1999:97), as the merger of differences, as courage to maintain one’s viewpoint when arguments are in favor of changing it (Buber, 1965:111), as continuous interrogation among participants (Isaacs, 1999:10).

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According to Bohm (Nichol, 2006), dialogue can be defined as coherence while society's coherence is defined by a set of jointly shared significance. As a result, dialogue involves surfacing tacit aspects like individual values, the nature and intensity of emotions, thinking patterns, inherited myths. Moreover, dialogue is a means of generating and maintaining collective thinking. On the other hand, the source of incoherence lies in the inherited defense mechanisms, in the anchoring in a fixed, unchangeable meaning that renders significance to the surrounding reality and that allows for the present to be interpreted, accepted or rejected. In conclusion, dialogue as coherence must not be viewed as a pre-established goal that must be achieved. On the contrary, dialogue is about living coherently and not living for the sake of cohesion.

For dialogue to occur, tensions among individuals and groups need to emerge. It is only thus that dialogue participants can observe and understand the arguments supporting group/individual actions. The prerequisite for dialogue to appear and solve these tensions is the frequency of encounters. In this respect, it is worth noting that defensive attitudes do not just bend from the very beginning dialogue is initiated. On the contrary, dialogue is a repetitive, cyclical process that entails boredom, frustration before generating dynamic behavior.

Bohm (Senge, 2004: IX) underlines that the real test for dialogue is to allow divergent opinions to coexist. For dialogue to occur and unfold, the following conditions must be met: attention (needed to identify defensive patterns, preconceptions that are instilled at individual or/and group level); curiosity (an intrinsic characteristic of attention that must come together with a relaxed non-judgmental attitude directed towards a clearer and yet not necessarily more correct understanding of the interlocutor's message); listening (that should go beyond mere empathy and focus on discovering new meanings even at the risk of misinterpretation); avoiding to correct the interlocutors' statements.

2.4. Conversation style

In practice, conversation is based on a set of unwritten laws. Therefore, it displays a set of common characteristics that can be viewed as constant conversation patterns. The term suggested by Erving Goffman (1955, 1981) to describe the outcome of the interactions that could be labeled as conversation is "interaction order". This is built on a complex set of rights and obligations that act both at individual and institution level. Moreover, this order is built on a "syntax", namely on the relationships established by the people who are present at a given moment in a given place. The syntax is the one that ensures the sequencing of speech acts and that contributes to expressing, ratifying or undermining concepts like self-perception and personal identity.

According to Gumperz (1982), many of the elements that are part of the interaction order (such as the means of showing interest, feelings, the way of telling a joke and the identification of the right moment to do that, the moment when one can start talking without overlapping with the other, voice pitch and volume) may seem implicit but they vary from an interlocutor to another.

Consequently, the way of saying something in order to create and interaction order defines conversation style (Tannen, 2005:4). Its features are rendered by the verbal behavior manifest at all language levels: phonological, lexical, syntactic, prosodic, and rhythmic (Tannen, 9). Ideally, the analysis of verbal behavior should not be separated from the analysis of proxemics, kinesics and haptics.

The basic trait of conversation style that recommends it as the best means to use in organizational change is *involvement* (Lakoff, 1979, Tannen, 1990). In this respect,

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specialists (Svennevig, 1999:49) talk about involvement strategies as features of conversation style and as means of shaping the form of conversation (compared, for example, with Grice's politeness strategies employed in developing the contents of a conversation). If Grice's strategies contribute to developing social relations through the linguistic means that show familiarity, solidarity, affection, as well as through the linguistic techniques that solely cover affections (Tannen, 1982:12) both as the reflection of a psychological status, and as interaction and self-presentation means. In this respect, involvement is viewed (Katriel, Dască, 1989:276) as both commitments to the beliefs/psychological status expressed through a speech act (that may belong either to the transmitter or to the receiver) and as involvement in the conversation topic and in the relationship established among conversation participants.

The involvement strategies identified by Tannen (1984:30-31) fall into the following categories: managing sentences sequence (e.g. tolerance for talking over the interlocutors/oneself; active listening); managing the topic of conversation (e.g. preference for narrative techniques or for topics of relevance at personal level); paralinguistic strategies (e.g. intonation, pronunciation, voice quality, speech rhythm); speech metrics (e.g. rhythm, repetition of phonemes, morphemes, words or phrases; figures of speech); participation in constructing meanings (e.g. indirect style, ellipsis, tropes); dramatization (e.g. dialogue; details)

2.4.1. Laws of conversation style

The laws governing conversation style and that can be identified with the help of the above definitions and delineations are:

- The law of coherence defined by interaction strategies (e.g. I see what you mean...), continuity strategies (e.g. in this way...) and contextualization strategies (I believe what you've just said can prove useful to me in the following way...). Another label for these laws could be that of laws of alternatives. Its correct understanding and employment undermines defense mechanisms, or anchoring in one-sided interpretations of situations.
- The law of involvement is built on strategies aimed at overriding both the institutional role assumed by an individual/group, as well as the expectations and at acknowledging the interlocutor as a partner and counterpart.
- The law of the domino is based on strategies aimed at questioning what seems to be for granted.

The strategies underlying these laws are different, but they depend on one another in defining a person's/group's/organization's conversational style. Given the goal of this paper, these strategies are not presented in this paper.

3. Contemporary methods of organization change through conversation and dialogue

The goal of this chapter is to briefly present two contemporary methods that use conversation and dialogue in order to implement organizational change: the Landmark Business Education/ Vanto Group method and the focused conversation method. The criteria used in their selection for the purposes of this paper were the success of Landmark Business Education/ Vanto Group method in inducing organization change, and the similarities between the focused conversation method and the one suggested by this paper, namely conversation style method.

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3.1. The Landmark Business Education(LEBD)/ Vanto Group method

Landmark Business Education/Vanto Group is both a controversial and successful organization that reports accomplishments in implementing organization change through dialogue and conversation.

Unlike conventional methods in organization change focused on developing or improving employee competence level, the LEBD method aims at changing individual behavior, as well as employees' self-perception (Chappel *et.al.*, 2003: 90). Their endeavors are built on the premise that reality is shaped through language. As a result, the adequate usage of the latter markedly contributes to the interpretation of the day-to-day situations and to the identification interpretative alternatives, and hence to future actions.

The philosophical principle underlying LEBD programs is formulated as a double negation: "we do not know that we do not know" (McCarl *et.al.*, 1). This principle is actually the one used as a measurement of the transformation undergone by individuals and organizations. Thus, from Socrates' quote: "I know one thing that I do not know nothing", the LEBD philosophy focuses solely on the second part and develops it in the Socratic tradition with the help of a coach, teacher, mentor, therapist or philosopher (McCarl *et.al.*).

By LEBD definition, an organization is the result of the conversational networks established by its employees. Therefore, aspects like performance, work conditions, success, profit, development are not given facts, but the result of these conversation networks. As a result, the goal of LEBD is to analyze, explain and change the interactions that form these networks. The propositions underlying LEBD's actions can be summarized as follows (Logan, 1998: 7):

- Organizational culture is defined by the conversational network;
- An individual's participation into the network shapes his/her experience and understanding;
- An individual's approach to work influences his/her behavior;
- By shaping the conversation network in which the individual participates, his/her relationship with work and, hence, behavior is shaped;
- An organization's results are generated by its employees' behavior.

Relying on the power of language/speech as an important component of conversation, the Director of Vanto Group, S. Zaffron (2007:6) identifies three laws governing performance and that should be followed any time individual or organizational change through dialogue/conversation is envisaged:

- Individuals' actions are triggered by the way they frame the situations with which they are confronted;
- The way a situation is framed can be understood from the language used to describe that situation;
- Using a future-oriented language changes situation framing.

The LEBD method consists in following the steps:

- The involvement of all decision-makers in the elaboration of organization mission. (The commitment is made in writing and is stated as "We commit to....")
- The description of mission elements in a document signed by all decision-makers and that uses linguistic structures like Present Tense sentences, the personal pronoun "we", and, when necessary, the means by which the commitment is fulfilled.
- Building teams and work relationships by taking training programs targeted at understanding and becoming involved in organization change through dialogue (alongside with specific actions like business processes improvement, company reorganization, etc.)

3.2. The focused conversation method

The focused conversation method was initially developed by Joseph Matthews in the '60s as an experimental method aimed at teaching art. In the '90s, the Institute of Cultural Affairs from

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the USA develops it into a four stage program built around a set of questions organized from simple (i.e. addressing superficial aspects) to complex (i.e. addressing in-depth aspects) in order to guide conversation and run by a facilitator. The underlying hypothesis of this method is that free, unguided conversation does not yield any results.

The levels (Stanfield, 2000: 18- 21) targeted by the questions are as follows:

- The objective level focused on questions aimed at describing the subject of the conversation: (e.g. concerning a law: What is this law about?; What does it propose?; What does it omit? OR concerning a meeting: What words/expressions do you remember to have been used during the meeting? What are some of the key ideas presented?)
- The reflection level includes questions aimed at generating personal reactions, attitudes, associations related to the topic under discussion (e.g. What was your first reaction to this law?; What do you like/dislike about it?; OR How did you feel during the meeting?, What was one of the positive aspects about the meeting?)
- The interpretation level is based on questions aimed at identifying meanings, values, the importance and consequences of the topic under discussion (e.g. What are the real goals of this law?; Will this law serve its purpose? OR What topics were approached during the meeting? What is the relevance of this topics for you personally?).
- The decision level is focused on making a decision for the future and the ever present question underlying the surface ones is: So what? (e.g. What is the priority of this law? What are the arguments in support....? What are our arguments? OR What do we have to do after this meeting?).

The rules that govern the establishment and administration of the questions are:

- There are no good or satisfactory answers. This discourages defensive attitudes while encouraging unimpeded expression of personal opinion.
- The role of the conversation is not to teach, but to guide in the efforts to structure people's reasoning.
- Questions must be open-ended and should not include any clues as to likely expectations concerning the answers. Such questions encourage the use of creativity instead of a critical attitude.
- "Yes", "No", "I don't know" answers are accepted;
- Only one answer to a question is not accepted;
- Questions should start with *Who, What, How, Which, Why*.

In conclusion, the focused conversation method is built around a set of questions with the role to clarify a topic before making any decisions and acting. However, this method is nothing but a small part of a methodology aimed at conducting organization conversation in such a manner that by changing individual attitudes and behaviors organization change can be achieved. In this respect, the LEBD/Vanto Group method demonstrates that organization change is a tangible goal.

4. Change Organization Conversation style: change the organization (overall method description)

The three laws governing conversation style and their inherent strategies can be applied at organization level only by resorting to a research method known by the name of *triangulation* whose stages are as follows:

1. Theoretical triangulation, namely a further analysis of the strategies underpinning the three laws by focusing on the following disciplines: Conversation Analysis, Rhetoric, Linguistics with its branches: Linguistic Anthropology and Sociolinguistics.
2. Temporal triangulations focusing on the linguistic principles that lead to a changes in a the form and structure of a given language both diachronically and synchronically. In

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this respect, the disciplines informing on the theoretical concepts to be employed are Dialectology and Stylistics.

3. Triangulation at organization level by focusing on the three layers of organizational linguistic behavior: organizations policies, rules, regulations; group linguistic behavior and individual linguistic behavior.

The steps to be taken in changing an organization by changing its conversation style are as follows:

1. Using the method of observation and case studies at top management level.
2. Presenting the conclusions in the form of an individualized training program in conversation style change.
3. Running the program
4. Using the method of observation at formal group level.
5. Presenting the conclusions in the form of an individualized training program in conversation style change.
6. Running the program

As for the time needed to go through the above steps, it depends on the feature of the organization that is to undergo change. For this, the first step is a prerequisite.

The items based on which the observation method is to be employed in steps 1 and 4 are the following:

1. How are new ideas shared?
2. What kind of justifications (i.e. solidarity/power) do managers/employees use when it comes to presenting pros and cons in a discussion?
3. What are the means used to argue in favor of one's ideas? (e.g. examples, analogies, etc.)
4. How are roles and statuses assigned/built/enforced in the organization?
5. What is the tolerance level of emotional language?
6. Who gets frustrated when his/her ideas are not taken into account?
7. Who is the initiator of the latest idea that has been put into practice at organization level? Who is tasked to put the idea into practice? Whose name is written on the documents related to idea development?
8. What are the jokes viewed as acceptable at the level of informal groups?

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ORGANIZATIONAL CULTURE AND LEADERSHIP – POWER SOURCES IN ORGANIZATIONS

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Abstract

Studies on leadership, as a social phenomenon abound, their evolution is largely progressive one, from relatively simple theories centered on certain characteristics of the leader, to complex theories that try to incorporate as many explanatory factors of the phenomenon as possible. This article will try to present the connection between leadership and organizational culture. It can be shown that organizational culture helps clarify many phenomena that occur in organizations and that culture can act as brake or as an incentive for the organizational effectiveness, as well as the fact that leadership plays a leading role in the formation and development of organizational culture.

Key words: leadership, organization, culture, effectiveness, power, objectives.

1. Introduction

Culture is the strength of the organization, it is the engine, the force that drives the activity in order to accomplish the mission and reach the objectives. Every organization has, more or less consciously, built its own force which should be activated by those in positions of leadership. Powerful organizations, namely those that manage to achieve positive and lasting results over time, are able to recognize and use the energy. The first actor of this process is the leader, the person who runs and manages the organization and he is the reference point in the organizational structure. Taking these into account we can say that, leadership is the ability to read, interpret and operationalize organizational culture in order to drive the organization towards knowing its identity and force and to use it to attain its objectives [1].

The organizational culture is crucial when it comes to the power of leadership. Each organization creates and develops different types of behaviors, rules, values and ideals based on certain factors. The culture of an organization depends on the economic, social, cultural and religious environment, some cultures are conducive to the emergence and development of people having leadership potential and they allow changes when necessary. Others are more reactive to leadership and leaders have to make great efforts to find a group of followers. An organizational culture which allows the leadership to manifest itself effectively allows the people to develop, offers freedom of movement and recognizes individuality. The development of such a culture is extremely difficult and cannot be accomplished in a short time. Leadership and organizational culture are processes which form each other and give each other consistency and value.

Sometimes, organizational culture can be an obstacle for change. Some organizational cultures are open to taking risks, look for and encourage the development of people with leadership potential, they encourage adaptive change. Other cultures are not,

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and the difference in crisis adaptability can be huge. In the first case, adaptive changes may facilitate the way for major changes, in the second case, a crisis can have a fatal impact on the organization.

2. Leadership – a change factor.

The essential function of leadership (leaders) is to run the organization, to plan the activities so as to obtain performance. In order to perform effective leadership, an analysis of the existing situation appears to be necessary then, the direction will be set, but this is a different process from that of planning.

Planning is a deductible process which starts from an attainable goal and builds things from the premise towards the result. Depending on the desired result there are set deadlines and the necessary resources along a reversed time line.

Leadership is an inductive process, it starts from a state of things, a state which is analyzed and then, step by step, the vision and the direction are created. A vision can be good or bad until tests of significance and feasibility are made but what is essential is that people can be guided by it. The significance must be adaptable to each person's vision of the future. The feasibility is the result of the strategy which establishes the steps that are necessary to be taken towards the fulfillment of the vision. A vision that is not consistent with the expectations and needs of the group becomes inapplicable and insisting on its promulgation will turn into a disaster. In conclusion, the visions and the strategies which are applicable tend to be dynamic and to produce effects.

2.1 Theories of Leadership

According to Carl E. Latrin and to Allen K Settle, there are four types of approaches when dealing with leadership [2].

- "The features approach" – it is among the first forms of study of the phenomenon and it is based on a relatively simple idea: certain traits or qualities are essential for occupying a leadership position and for determining the performance; also, they distinguish successful leaders from other people. This approach was characteristic to the years 1940-1950, when there was developed a whole theory about inborn traits that should characterize a leader. Since the researchers failed to identify the common characteristics that define the successful leaders they moved to a different approach: the behavioral approach to leadership;
- "The behavioral approach to leadership". This approach is based on the study of the behavior of leaders and of its implications upon the performance of the group (the degree of accomplishment of the objectives). Thus, between 1950-1970 there were conducted numerous studies on the behavior of leaders and its effect on the group. The studies showed that there was no behaviour effective for all situations and thus it was developed a third approach to management: situational approach to leadership;
- "Situational approach to leadership". Compared to the previous approach, this approach considers that a leader must choose their behavior according to situational issues existing at a certain moment;
- "Transformational leadership". This approach (which is the most recent) supports changes in society and proposes that the effectiveness of leaders should be measured according to the degree (low or high) to which they meet the needs and expectations of people they lead (subordinates).

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As it can be seen from the presentation above, the emergence of new approaches is due to the shortcomings identified in the previous ones. This does not mean that the first approaches were abandoned. Even today, it is believed that the leader must have certain inborn characteristics.

Generally, the theories which explain how leadership appears are divided into two categories:

- those which argue that leaders' success is based on their inborn qualities;
- those which argue that success is based on leadership skills that can be learned.

In 1990 Bass tried to explain the development of leaders through three theories:

- Inborn features theory - some people are born to be leaders, and those who do not have these qualities cannot become leaders;
- The great event theory - A crisis or some unusual event reveals a person's leadership qualities, qualities that have not been known or identified before;
- Transformational leadership theory - This theory argues that people can become leaders if they want. In other words, the specific qualities and skills of successful leaders can be learned [3].

We can say that the leader's qualities make the changes. The leader communicates, and does whatever it takes to make the people see a vision and convince them to do things. A leader influences the followers and transforms them through his qualities and behavior.

2.2 Managing organizational culture

Whether or not cultures can be managed reflects mainly a modernist concern which caused a fiery debate among theorists. For those who think that it is possible to manage and manipulate culture, the cultural theory opens new perspectives for the possibility to exercise influence and control in organizations. If we assume that culture influences behavior by the norms and values, then it should be possible to manage the organizational norms and values to achieve some desired behaviors and results. This type of control might be carried out, for example, through recruitment and employment practices in order to find the people who are compatible with these values [4].

Those who reject this idea argue that, since the norms and values are based on deeply rooted arguments and indisputable beliefs the possibilities to manage and manipulate culture are more limited.

The conclusion of this debate can be that leaders are the individuals with the greatest influence on organizational culture. Once they are well regarded by the members of the organization and the power structure favours them, their behavior becomes an example for others, their subordinates will follow them and will copy their behaviour thus influencing the results of their work and subsequently the performance of the organization (figure 1). However, we must distinguish between the opportunity to exert influence and the actual exercise.

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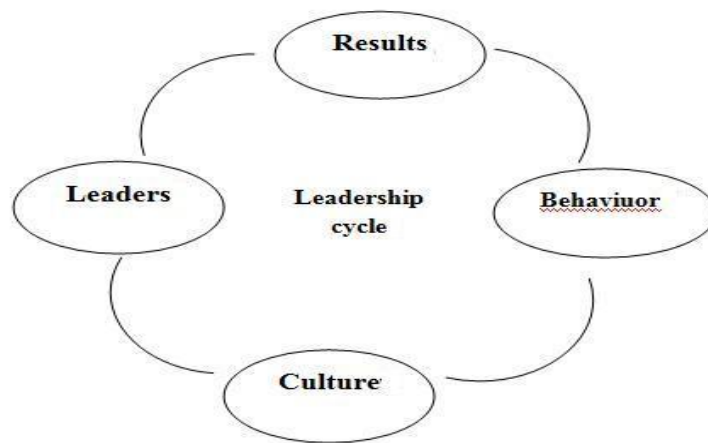


Fig. 1 Leadership cycle

3. Conclusion

It can be concluded that managers can become a powerful symbol of organizations and the drive towards performance. They are a symbol because their employees, as well as other people from outside their organization, associate them with the organization, but it is their influence and power which will lead the organization toward performance. We must admit however, that the symbolic power of managers and significance is dependent on the interpretations of other members of the culture, so, if the leaders want to be successful they have to adapt to the schemes underlying the symbolic interpretation within the organizational culture.

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**The 7th International Scientific Conference
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**VALUABLE OR SMART INTELLIGENCE
ACQUIREMENT**

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Abstract

Valuable or smart intelligence acquirement is an important key activity for each state, national and international organizations, both military and civilian, to gather all is necessary for being in the top of the economic, military, political and social statistics. For this reason there are spent annually huge quantities of money, used well trained human resources and materials to achieve different goals or to find the easiest and cheapest ways for getting these. So, to accomplish what they have proposed, all organizations, both national and multinational, have developed many offices worldwide to be permanently in contact with the last discoveries.

Key words: intelligence, smart, state, organization, economic powers.

1. Introduction

Valuable or smart intelligence acquirement is a very important issue from the beginning of the world. In fact there are information concerning intelligence acquisition and the importance of them from the ancient time, especially from Sun Tzu, and then through many military thinkers like Clausewitz, Mahan, etc., who have demonstrated during the time that their concepts related to the importance of gathering intelligence remain permanently right. The ways of collection remain to be establish by each state or organization depending on their goals.

2. Modern intelligence

Turning back to the modern time, in last fifty years in all countries was demonstrated that all their organizations, both military and civilian, developed numerous branches for gathering information regarding all activities (political, economic, social, etc.). For this reason competition between national and multinational organizations emerge to a high scale of battle, especially in the areas as: ideology, research and development and production.

In the military field, in time, in all countries was seen an important evolution and specialization of intelligence. At the beginning it was only a small structure which had different names (bureau, office, section, compartment, etc.), but in 20th century this branch

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has developed also as a structure and personnel number. These trends were observed in all countries around the world.

In non-military zone, and not only, many countries despite economic crisis spent time and money to research and develop new strategies, which brought them in last three years a great advantage over counterparts. That means they use a full scale of intelligence activity with national and multinational ties to accomplish their goals, to achieve new technology, to make more money, to obtain great quantities of minerals, gold, silver or strategic ores. As a result, in between 2011 - 2012, the global gold price has grown very fast, and all countries which had great quantities of money discovered that national reserves decreased due to lack of gold.

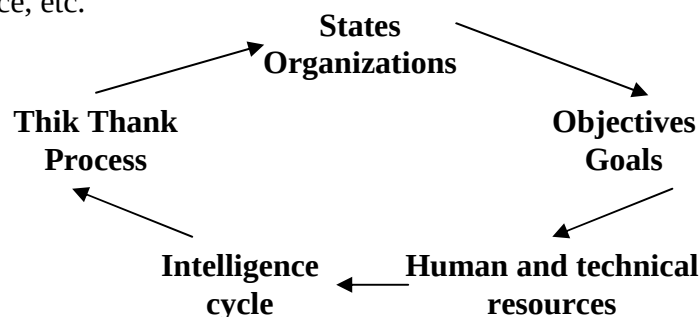
Because of this battle, many states, especially those which are great economic powers, and also military powers, from G20, G8 or BRIC, used different methods to develop their industries or inside management to remain in this struggle and to obtain results which will force economic counterparts to resign or to join them in different ways (selling, resigning, out of market etc.).

On the other side when all countries were found out in front of a global or multinational organization discovered that general ways were to raise the competitive effectiveness to remain as profitable as known organization. For these reasons many organizations choose or were forced to move their productions or even entire industries in those countries which they knew they didn't have great developments in that area of activity. In last 20 years the main reason has been that many countries become open markets to the big economic states.

All economic powers gathered intelligence from where they wanted to relocate that industry and then they have started a new competition through dislocating huge amount of money to preserve their investments or to „determine” persons or governments to accept their propositions. In specific terms means that high trained personnel from each branches of that organization was designated to collect, processed and disseminate valuable information to the Analysis Branch and then to the Board to verify if their strategy in use is right or to make a reorientation of it, even to stop it and to create a new direction of action.

All these states and all multinational organizations have developed many branch offices in different countries in last 20 years and sent many specialists well trained in gathering information for their main activities to establish which country is more appropriate in obtaining and supporting of the own goals. In this way all of them started to collect information which was supposed to be valuable to decision making process. In spite of all countries have those persons in official embassies and consulates, trained in gathering economic, social and politic information they discovered that for accurate information is mandatory to send more persons in the field.

In this way they use all types of intelligence, but the most used were: open sources, human intelligence and imaginary intelligence. For military purposes were used and still are all types of intelligence collection like Electronic Warfare Intelligence, Medical Intelligence, Signal Intelligence, etc.



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All field researchers or those persons who were involved in finding information from Open Sources, collected huge quantities of information which were disseminated and processed by each organization to have an advantage over the rest of organizations or states which had interests in that field of activity. All these persons usually work in marketing branch and planning business branch and it is known that they came in these positions after many years of working in production branch, which is extremely relevant for organizations, due to their great experience and expertise in finding and solving different issues related to their activity.

For the organization progress, it was found that great ideas come, mainly from those workers who were involved in production. More if they had ties /connections with local, national and international researches from that branch, they would receive many opportunities. Many of them were highly trained through many courses and programs to achieve more information regarding how to raise production or to develop new concepts.

Concerning competitive intelligence acquisition in last twenty-two years many researchers, especially from SUA, but also researchers from Great Britain, France, China, Israel and Russia, and nowadays from Brazil, India and South Africa have developed many ways to find out which are the possibilities to gain more valuable information for their organizations in order to develop their economic activities.

Using phones, internet, even contacting persons from different organizations they found out that competitive intelligence acquisition could be realized both from internal and external sources. In this way all researches gather many information, even they are redundant for organization analysts.

Due to economic recession in last three years many small economic countries have thought to find new ways in staying close to the big ones and multinational organizations.

One step forward which was one of the most important decision, because those states decided to put together information, institutions /organizations, to create close links between intelligence services, even to use in common different assets.

In this way, in the most recent NATO summit, which took place in Chicago, United States, 20-21 May 2012 a part of the member states decided to put together money to buy different military elements with a common goal - DEFENCE. The initiators called this model – SMART DEFENCE, and it is wide spread as a new way of thinking. Probably many of them forgot about medieval wars in which all kings and emperors of the time put together their armies, money and all military and civilian assets they had to stop enemies like: Otoman Empire, Habsburg Empire, and Tsarist Empire. This way of thinking was also used in both World Wars by Winning States Coalition and Defeated States.

3. Conclusion

In some specialists' opinion, smart intelligence could be the next step for military thinkers, because it was demonstrated during the last confrontations that being smart is an arte, and acting smart is a quality which wasn't achieve by many countries till now. If one state want to have opportunities in achieving last generation of know-how or to possess new technologies has, in principle, two ways of action: to inject money in research and development or to gather intelligence from those countries which create know-how or use to offer great perspectives to all great researchers from pour countries or as a last option to ask for help to great powers.

In fact what is Smart Defence? Like all economic issues, when great economic powers gain more and more economic values and produce all things which are necessary for a normal growth, after that they decide that these values are or must be used by all countries despite their will. As a result all those countries which desire to accomplish own goals,

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especially in military domain, will sustain through paying money to big military powers for their defense. In fact this is another face of globalization, called military assets globalization.

For this period of time, and in direct connection with economic depression, probably, acting in this way is the single solution. In time, for sure, all these countries which choose to act in this way have to redesign and rethink their ideas concerning national defense because in time was demonstrated that common interest will separate, due to, especially, internal economic pressure, immigration, national and regional political environment.

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**SMART DEFENSE – A SOLUTION FOR LIMITED
BUDGET?**

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Abstract:

The actual economic downturn, in conjunction with the risks and threats for the global security environment inevitably lead towards a dramatic re-thinking of the way that NATO member countries have to fulfill their related responsibilities. A common component is the “Smart Defense” concept, referred as real cooperative way for the member states, to reduce/eliminate the useless redundancies, efficiency increase and express the solidarity between nations.

Romania is trying to use the opportunities offered by the “Smart Defense” concept and a good example is the involvement in the Strategic Airlift Capability. Meanwhile, there is also true that “Smart Defense” by itself cannot solve the declining budgets’ problem, being only a component of the whole perspective.

Key words: smart defense, budget, solidarity, capabilities, military co-operation, flagship projects

1. Introduction

The economic crisis called western world seek ways to increase the efficiency of defense systems, while maintaining efficacy demonstrated in recent decades. Requires a compromise between the needs of an often unpredictable security environment and resources increasingly limited which nations allow to allocate. Thus arouse the concept of "smart defense", essentially an extension of free assumed cooperation among states for the common defense.

Officially, a huge milestone of the construction that requires the concept of "Smart Defense" can be considered paragraph 37 of NATO's Strategic Concept [1]:

“NATO must have sufficient resources – financial, military and human – to carry out its missions, which are essential to the security of Alliance populations and territory. Those resources must, however, be used in the most efficient and effective way possible. We will:

- *maximise the deployability of our forces, and their capacity to sustain operations in the field, including by undertaking focused efforts to meet NATO's usability targets;*
- *ensure the maximum coherence in defense planning, to reduce unnecessary duplication, and to focus our capability development on modern requirements;*
- *develop and operate capabilities jointly, for reasons of cost-effectiveness and as a manifestation of solidarity;*

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- *preserve and strengthen the common capabilities, standards, structures and funding that bind us together;*
- *engage in a process of continual reform, to streamline structures, improve working methods and maximise efficiency ”*

We will present how this concept developed in recent years, not forgetting to mention that such joint projects were developed long before the NATO Summit in Lisbon.

2. History of the concept

Under the heading "Building security in age of austerity year," NATO Secretary General Anders Fogh Rasmussen presented its call for smart defense at Munich Security Conference in February 4, 2011 [2]. From sharp cutting budgets for European defense, the author says: "The era of one-size-fits-all defense cooperation is over. What matters is to deliver capabilities that allow us to operate Successfully at 28. Smart Defense can do just that. It CAN help nations meet They make two challenges today: how to get more security for the limited resources They devote to defense, and how to invest enough to prepare for the future. "

Picture balancing security situation in the opinion of the Secretary General of NATO is presented in Figure 1.

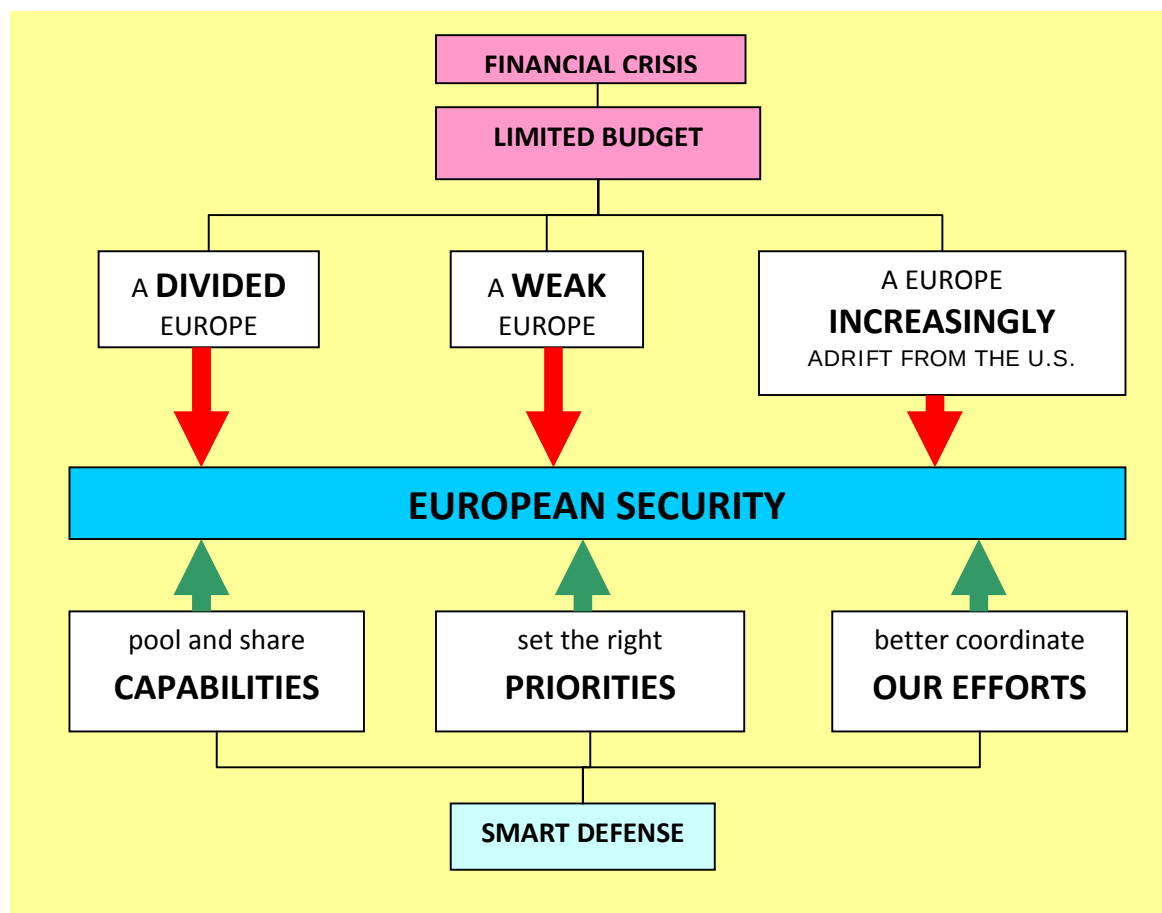


Fig.1. Smart Defense Effect on European Security

The concept was promoted by Secretary General at NATO defense ministers' meeting in March 2011 [3], highlighting the two premises that require a new approach: 1)

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reaffirm the full range of Alliance missions associated with challenges ownership (Lisbon Summit) , 2) difficulties arising from the current economic crisis for the commitments made by Member States.

In short, in order to maintain the Alliance's ability to perform tasks, Smart Defense allows efficient use of resources allocated to defense, based on three lines of action: 1) identifying and prioritizing critical capability requirements, 2) promoting cooperation extended defense, 3) development of innovative capabilities NATO through multinational approaches.

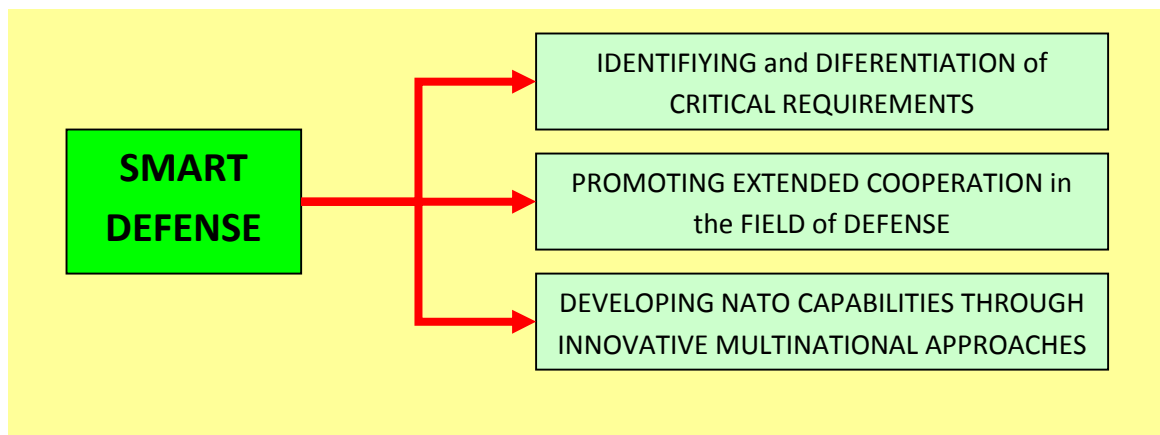


Fig. 2. Strands of Smart Defense

Defence Ministers of the Member States reaffirmed their support for the new approach and stressed the importance for the drastic reduction of duplication and establish clear priorities, during their meeting in Brussels in October 2011 [4]. On the same occasion, NATO Secretary General said: „*Smart Defense is not an excuse for insufficient defense spending. We may not be able to spend more, but we can spend smarter by spending together*”.

In preparation for the NATO Summit in Chicago, it held a meeting of ministers of foreign affairs and defense [5], in April 2012 and they were given two documents unanimously supported by all present: "Defence Package" and "Political Statement on Capabilities." On this occasion, the Secretary General said: “*The Defense Package will not be a one-off, or the end of the story. This is not just about NATO 2012. And it's not just about one summit. It's about keeping our Alliance fit for the long term – for 2020 and beyond.*” Furthermore, it was estimated that more attention should be paid to sensitive political issues, such as increasing specialization through internal consultation between nations, enforcement access to NATO capabilities, reviewing common funding rules, ways of associating partners to Smart Defense.

Declaration of capabilities was signed by representatives of allied states at the Chicago summit in May 2012 [6]. Heads of State and Government agreed on this occasion, for the future: „*we have confidently set ourselves the goal of NATO Forces 2020: modern, tightly connected forces equipped, trained, exercised and commanded so that they can operate together and with partners in any environment*”. [7] Course objectives can be achieved through Smart Defense: „*Smart Defense is at the heart of this new approach. The development and deployment of defense capabilities is first and foremost a national*

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responsibility. But as technology grows more expensive, and defense budgets are under pressure, there are key capabilities which many Allies can only obtain if they work together to develop and acquire them. We therefore welcome the decisions of Allies to take forward specific multinational projects, including for better protection of our forces, better surveillance and better training. These projects will deliver improved operational effectiveness, economies of scale, and closer connections between our forces. They will also provide experience for more such Smart Defense projects in future.”

2. Smart Defense – concrete projects

Under the Agreements between the Allies, sanctioned by signing the mentioned declaration (Chicago 2012), the concept will be implemented through a package of projects organized on three pillars: 1) Featured Projects (projects that have a leading nation and can be implemented in the first phase), 2) possible projects (projects for which the nations manifested a moderate desire to participate and no nation has been identified as leader) 3) Proposals (projects on behalf of industry and nations, which are not yet developed because of insufficient resources and low interest shown by nations). The table below lists several such projects [8]

NATO Universal Armaments Interface	This project will enable fighter jets to use munitions from various sources and nations. It will facilitate the flexible use of available munitions across the Alliance and promote multinational cooperation. The air operation over Libya has demonstrated the importance of such a project.
Remotely Controlled Robots for Clearing Roadside Bombs	Based on experience gained in Afghanistan, the project will identify the best remotely controlled robots for route clearance operations. This equipment avoids exposing military personnel to explosive devices. The project will promote joint procurement of state-of-the-art equipment and facilitate multinational cooperation on deployment.
Pooling Maritime Patrol Aircraft	This project will bring different Maritime Patrol Aircraft from various nations into a multinational pool to be available to all participating nations, and, upon request, to other nations as well, thus enabling a more flexible use of available assets.
Multinational Aviation Training Centre	Building on operational experience gained in Afghanistan, this project will provide top quality training to helicopter pilots and ground crews. The training will focus on the deployment of helicopter detachments in support of NATO operations as well as preparing Aviation Advisory Teams which provide training to Afghan National Security Forces.
Pooling & Sharing Multinational Medical Treatment Facilities	A project to develop standardised modular medical facilities for effective and efficient multinational deployments in support of operations. This will allow Allies to make the best possible use of existing medical assets.
Joint Intelligence, Surveillance and Reconnaissance (JISR)	Enhanced cooperation will provide for a more powerful network linking national and NATO surveillance assets (such as AWACS and AGS), collaborative training and education programs for intelligence specialists and better procedures for the exchange of information. Cooperation in this area aims at enhancing the collection, processing and sharing of key information in support of political and military decision makers.

Table1. Smart Defense multinational projects (examples)

For half of the recommended projects (from the Pillar 1) Romania expressed the interest to participate, moderate interest being shown for those projects that are part of the

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pillars two and three. Moreover, the country welcomed the first new concept, based on experience of previous multinational projects launched and consecration of this new approach. In September 2012, our country's position was stated again [9]: „*Adapting the Alliance entails conceptual adjustment, transformation and capabilities development under the stressful severe economic downturn. There is no doubt that “the name of the game” is a new mindset in approaching security challenges based on operational effectiveness and economic efficiency. Therefore, a particular focus must be devoted to multinational solutions to make a much smarter use of resources by maximizing operational effectiveness. In this regard, pursuing Smart Defense and thus pooling and sharing our efforts is the way out to develop those capabilities required for the Alliance in order to fulfill its core tasks. With no, or limited additional resources available for defense due to the economic austerity in the foreseeable future, the only choice we have got is to become more innovative to strengthen cooperation in defense procurement, to pool and share capabilities to defend our core values.*”

Multinational cooperation has started thus before launching the concept. In fact, the Chicago Summit nominated several multinational projects which should continue.

NATO's Missile Defence Capability	At the Lisbon Summit in November 2010, NATO Heads of State and Government decided to develop Ballistic Missile Defense as a collective capability for the Alliance. Through multinational cooperation, Allies can achieve more and better protection from ballistic missiles than any one Ally could provide alone. The United States is providing the majority of assets at this stage. Several European Allies have agreed to host elements of the US system. European nations will also provide complementary assets such as Patriot missiles and radar-carrying ships. And NATO as a whole is providing the communication network and the missile defense command within its Air Command in Ramstein, Germany.
Alliance Ground Surveillance (AGS)	13 Allies are coming together to provide a capability which will benefit the whole Alliance. This is a system that will employ drones with sophisticated radar systems to provide a picture of ground conditions from high altitude. No single nation in Europe can afford such a capability on its own. The system will be made available to the Alliance in the 2015-2017 timeframe.
NATO Air Policing	Building on NATO's experience including in the Baltic States, Allies will promote air policing on a regional basis. Cooperation in this area offers an example of Alliance solidarity through avoiding additional defense spending on capabilities already adequately available in the Alliance. It allows economies of scales through the pooling and sharing of existing or future air assets. This approach is of particular importance for Allies faced with the replacement of ageing aircraft in the coming decade.

Table2. Continued multinational cooperation in strategic programmes

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3. “The Strategic Airlift Capability”, a success story

NATO option for "Smart Defense" was based on past experiences in multinational cooperation, as presented in the following table. They are now operational, and one of them will be subject to a short description.

Air Policing in the Baltics	NATO Allies take turns to provide peacetime air policing over the Baltic States. By doing so, the Baltic Allies do not have to spend money on fighter aircraft and can invest in other capabilities in support of NATO operations.
The Strategic Airlift Capability	The initiative has brought together 10 Allied and 2 Partnership for Peace nations in a consortium to procure and operate C-17 heavy transport aircraft. By doing this together, these nations have acquired an important capability that individual members of the consortium could not obtain individually.
The Strategic Airlift Interim Solution (SALIS)	A multinational consortium of 14 NATO member countries and 2 partner nations pooled resources to charter special aircraft that give the Alliance the capability to transport heavy equipment across the globe by air. The airlift consortium charters Antonov An-124-100 transport aircraft capable of handling ‘outsize’ (unusually large) cargo.
AWACS	NATO operates a fleet of seventeen Boeing E-3A ‘Sentry’ Airborne Warning & Control System (AWACS) aircraft, which provide the Alliance with an immediately available airborne command and control, air and maritime surveillance and battle management capability. This is one of the few military assets owned and operated by NATO.

Table3. Past experience with multinational cooperation

"The Strategic Airlift Capability" is a project designed to meet the needs of the NATO strategic airlift. The proposal was initiated by NATO's Deputy Secretary General, Mr. Marshall Billingslea, consisting in the acquisition and sharing of three aircraft C - 17. Noting opportunity for such problem-solving for the national strategic airlift issue, the Romanian authorities decided to participate in the project since 2004, at the NATO Summit in Istanbul. Timelines worth mentioning signing of a Letter of Intent to join the Initiative (2006), the signing of Memorandum of Understanding (2008) and, obviously, the reception of the three aircraft (2009). Finally, on May 17 2010, Heavy Airlift Group - HAW declared initial operational capability is reached and became fully operational in 2012.

Currently, the SAC Initiative is consisting of 10 NATO countries (Bulgaria, Estonia, Lithuania, Netherlands, Norway, Poland, Romania, Slovenia, USA and Hungary) and 2 PfP partner countries (Sweden and Finland). Note that, amongst Central and Eastern European countries, Romania has allocated most hours (over 5% of total). The three aircraft are deployed in Hungary, at Papa Air Force Base. Moreover, Romania is active in the capability both as a contributor and user, with the effective participation of crew and support staff, or specific activities with MoD structures involved. A special role is held by the Directorate of Defense Integrated Planning, Department of Defense Policy and Planning Department, that ensures Policy and Finance Committee chairmanship.

Through this project has been demonstrated the advantages of multinational cooperation to ensure the capabilities necessary to carry out so as to avoid resource wasting on national projects whose capacity cannot be fully used. SAC, should be emphasized, that meant for Romania an effective option, first comparing the alternatives: purchase or lease

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aircraft. But more important than efficiency seems validating the idea of cooperation between the participating countries. For the near future the initiation, participation and performance of such initiatives as more multinational, bilateral, even in areas where purely national capabilities are not justified are highly important.

5. Conclusion

"Smart Defense" is the way to maximum effectiveness and efficiency defense. To be put into practice, "Smart Defense" needs the correct identification of required capabilities, availability multinational and, especially, of trust between partners.

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HUMAN RESOURCES AND THE OBJECTIVE CIVILIAN CONTROL

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Abstract:

Increase of the militaries' professionalism is, according to the Samuel P. Huntington writings, the way to achieve objective civil control, meaning the way to assure political neutrality of the officers. It is essential for this professionalism to be clearly defined in order to avoid transforming it into a dead word, an empty box, repeated constantly during the official meetings.

This paper is introducing a view on the military profession in Romania, noticing significant differences between the theories promoted by different famous authors, the related official documents and the actual perception of certain active officers on this concept. The necessity of a serious analysis regarding the characteristics of the military professionalism is outlined aiming to achieve the civil objective control.

1. Introduction

According to national strategic planning documents, Romania will have a fully professionalized army. The National Security Strategy of Romania [1] describes our country's military future: *"Romania aims to create a modern army, fully professionalized, adequately sized and equipped with mobile and versatile expeditionary force, rapidly deployable, flexible and efficient, capable of defending the credibility of the national territory, to fulfill the collective defense and participation in international missions in accordance with the priorities and requirements of foreign and security policy."* In turn, the Romanian Armed Forces' Transformation Strategy [2] states that *"the Romanian Army Transformation general aims achieve a modern structure, completely **professionalized**, with a high degree of mobility, efficient, flexible, deployable, sustainable, meeting the capacity to act and be engaged in a wide range of missions, both on the national territory and beyond it"*. We further try to explain what is meant by the professionalism, so important for ensuring an objective civilian control, according to Samuel Huntington's view. At the same time, point out obvious link between professionalization and human resources, the most important resources in the field of security and defense, as well.

2. Professionalism and civilian control

Do we really talk about a delicate subject? Is it a concept which prioritizes arbitrarily different segments of the society? Trying to isolate a significant part of the population, setting the limits of action and participation embarrassing? The answer is clearly NO. All democracies practice such control. Even democratic countries practice "kind" of civilian control over the military or the military. But try to describe as simple concept, especially considering that Samuel P. Huntington, one of the most important theorists of civil-military relations, says that *"this concept (civilian control – authors note) has never been defined in satisfactorily or"*[3].

Civilian control over the military is quasi-general answer to the question: *who runs the state - politicians or military commanders?* Surely the first question was put by human society since the state realized the advantages of peace and social compromise with the state of war and excessive discipline that restricts freedom of every individual. And this time was not as close today as we might think, and the handful example is given by the caste hierarchy in ancient India, no longer than four millennia ago. It is well known that Brahmins were at the top of the hierarchy, followed by the military and judges, craftsmen and servants, workers. Indian Army, so to speak, was controlled by *"civilians"* in high places. But we decided not to do a history of civilian control over the military and we will limit ourselves to modern times. In the latter part of the eighteenth century, *"U.S. founding fathers"* were reluctant to the existence of a regular army, which could use force to impose their will, other than citizens. In other words, maintaining an institution designed to protect the nation, you expose yourself to the danger of being attacked by it when that institution considers that there is legitimacy and opportunity. This attitude, enriched by the idea of multiple control (the separate powers - executive, legislative and judicial), gave birth to the idea that it appeared the concept of civilian control over the military, even if its application be held from immemorial time.

Simplified crucial decision on defense issues belong civilians (politicians) and, equally, and responsibility lies about it to those decisions. It seems the essence of the concept of civilian control, politician's nomination is a direct consequence of the rules of modern democracies and the society is represented in decision-making by politicians. We add here that, not an institution or organization able to support them (obviously put brackets medieval Tartar hordes and other similar forces), military spending public money obtained from civilian contributors, distributing money through legitimate representatives of the citizens, must therefore be subject to scrutiny.

It is considered one of the basic features of a liberal democracy the very stable civilian control over the military. This does not mean that there is no civilian control other than traditional democracies. Mao, for example, declared that *"Our principle is that the Party leads the army and the army will never be allowed to lead the Party."* It is about to discuss to which extent the Chinese Communist Party resembled more of a civil than a military organization, but amid his words are found in many other countries, including Romania, and we believe that it is a type of civilian control.

We return to Huntington, which assumes that essentially seeks to minimize civilian control of the military power against civilians and believes that there are two types of civilian control: subjective civilian control and objective civilian control. If the first tries to

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maximize civilian power, the second is based on maximizing the professionalization of the soldiers, so that their interest in political involvement to be minimal.

Subjective political control required by various political groups eager to maximize their power in military matters and involves progressive involvement of the military in politics, denial of the existence of an independent military sphere. Problem that reduces the stability and effectiveness of subjective civil groups is due to the diversity of interests, diversity preventing maximize their power as a whole. Huntington argues that, in fact, the civil power maximization means maximizing the power of a group or several groups of civil case that results in major changes under changing balance of political power. Thus, civilian control becomes more of a slogan of those groups who want to increase their power over other groups. Historically, subjective civilian control was achieved by maximizing the executive power, the ruling social class or by constitutional means.

This leads to objective civilian control of military power by minimizing the professionalization of the army which, according to the American theorist becomes *"sterile and politically neutral"*. Assumption of this approach is that the recognition of autonomous military professionalism leads to decreased political power of the military provided preserving elements of power required for the existence of the military profession. Huntington points out that, since the maximum professionalism to achieve any reduction of military power beyond the limits set are actually promoting civil group, then return to subjective control. Despite the advantages offered by the control objective nor modern Western societies could not provide such a high level of civilian control. The situation is due to the tendency of many civil groups to advocate for their interests and military subordination principles, even while the *"subjective civilian control is fundamentally excluded in any society where, through the division of labor was a separate category management specialists in violence "*.

3. The civil control in Romania

We think to make assessments on existing civilian control type in our country or the level of any objective review and not believe that such assessments have their place here. However, such an undertaking requires serious research, currently not seem very interesting to those entitled to ask. As far as we are concerned, we have long way to clarify the content of the military profession, so to set those limits necessary political power objective civilian control. Moreover, following such a path, you must first clarify basic concepts such as defense or military. On the other hand, we cannot fall into the trap of treating the subject "diplomatically", triumphantly repeating that everything is fine since we are members of NATO.

Therefore, we describe how civilian control is achieved in Romania today, from those civil institutions which make major decisions regarding the military. It is known that the fundamental law [4] contains an article that stands army serving the people, *"the Army is subject solely to the will of the people to safeguard the sovereignty, independence and unity of the state, territorial integrity and constitutional democracy."* Moreover, *"Parliament is the supreme representative body of the Romanian people and the sole legislative authority of the country "*. Obviously, relating the two provisions, the first institution exercising civilian control is the Parliament. Besides adopt legislation on the field, the Parliament has powers such as declaring total or partial mobilization, declaration of war, suspend or terminate military hostilities; approval of the

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country's national defense strategy, examine reports of the Supreme Council of National Defence, specified in the text of the Constitution.

As a component of the state, it is obvious that the military is civilian controlled by the President. The Constitution states that *"The President of Romania represents the Romanian state and is the guarantor of national independence, unity and territorial integrity of the country"* but also lists its main tasks in the area of defense: *"(1) Romanian President is the Commander of the Armed Forces and President of the Supreme Defence Council. (2) He may declare, with the prior approval of Parliament, partial or total mobilization of the armed forces. Only in exceptional cases, the decision of the President is subsequently submitted to Parliament for approval, within 5 days after adoption. (3) In the event of armed aggression against the country, the President of Romania shall take measures to repel aggression and bring them immediately to inform Parliament with a message. If Parliament is not in session, it shall be convened as within 24 hours of the onset of aggression. (4) In the event of mobilization or war, the Parliament shall continue for the duration of these conditions, and if not in session shall be convened as 24 hours from declaring them "*

The first paragraph of Article quote shows another important institution of exercising civil control: Supreme Council of National Defense. In fact, its existence is devoted to an article of the Basic Law: *"Supreme Defence Council unitarily organizes and coordinate the activities concerning national defense and security, participation in maintaining international security and collective defense in military alliance systems, and actions to maintain or restore peace."* At this point, we consider it necessary to emphasize the SCND's role on defense, and for this it is sufficient to present his powers, as they mentioned in the law on the organization and functioning. Also here we can raise the issue regarding the discretion of the adjective "major" in describing the concept of civilian control.

The Government is exercising the civilian control of the military, under its powers given by the Constitution: *"The Government, according to its government program accepted by Parliament, carries out the country's domestic and foreign policy and oversees public administration"*. From the perspective of policy fulfillment of alliances and partnerships, leverage civilian control is important, possible and at the direct coordination, intergovernmental and inter-institutional. There is a pin that the Secretary of Defense or the Department of Defense Policy and Planning of the Ministry of Defence would exert civilian control over the military. We cannot agree with such a statement as corroborating existing laws means that there is equivalence between the army and the defense ministry. Some authors [5] believe that some state institutions (Court of Auditors, the Ombudsman, prosecutors and courts) exercises, in turn, civilian control over the military. Our view is that these institutions are not relevant to the topic discussed by us. On the other hand, we believe that the work of NGOs, media, private research institutes in the field, can help increase the effectiveness of civilian control over the military but does not exercise such control.

4. Professionalizing our Army

On the military profession, discussions can become endless when it comes to our Army. For many, many years, what Huntington called the officer corps, that those people

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who are soldiers for an indefinite period, is, in our view, a genuine professional entity, meaning that cultural differences between civil eminently professional groups (teachers, doctors, lawyers, etc..) and the body are insignificant. Romanian troops generally live outside military bases, have a normally working program, like civilians, their families are not depending on the Army, so the main characteristics of the U.S. non-professional military are missing. The only major change is the abandonment of conscription based recruitment, and here is noticed as volunteers are, in fact, an extension of the officer corps. Thus, the dilemma given the fundamental question of modern military - is an institution or an occupational profession? - do not wake up in Romania, the same controversy as overseas. This is quite notorious the military is an occupational profession like all the other professions. The reflection as an institution exists, but it is only the meaning of the word used equally for school, court, hospital, ministry or government, that is a public benefit organization funded by the taxpayer in providing services.

What is the essence of this profession? Charles Moskos describes it in "smoother terms" than other authors (the management of violence): "The armed forces are invested by the nations with responsibilities hard to find in the civilian life, if not ever - defending the national interest, having a real possibility that members of the military to risk their lives in this role and, in recent years, the paramount responsibility of conducting and supervising nuclear arsenal". We appreciate, of course, the permanent concern of American author for the virtues of the institutional culture, but our view is quite trenchant. The essence of the military profession, to use force to fulfill the tasks entrusted, is made according to established procedures. In other words, we insist that employment scheme should be limited to purely military occupations, avoiding civilian ones such as those of accountants, financiers, teachers, waiters, drivers etc. Soldiers are infantrymen, tank operators, engineers, sailors, airmen ... all those people prepared to use force to carry out tasks related to the responsibilities specified by Moskos. If we look at it this way, we can say that we have a long way to full professionalization of the Army.

The biggest problem is linked to the professionalization of the Army recruitment, it is obvious that such a profession requires specific native qualities as well as the military profession. Given the special difficulties of selecting soldiers in a short period of time, we believe that the solution lies in creating a differentiated career advancement mechanism to motivate additional skilled recruits' before those with general skills. Effectively ensuring a professional fair career would lead, to our opinion, and to the attractiveness of the profession, avoiding the current situation (existing and other meridians), that the number and structure of the volunteers depends almost exclusively of the general labor market.

5. A few statistics on human resources in the military

It is obvious that the effectiveness of an army is achieved through substantial financial efforts, both for military reasons, but mostly to ensure all the components of a military capability. Besides general limitation of resources, Romania is not one of the European economic performers and financial resources allocated for defense are not and cannot be according to the measurable objectives.

In the following, we present some statistics regarding the expenditure Romania dedicated in 2010, so at the beginning of the global financial crisis. The data is taken from the EU statistics and comparisons we are interested in are primarily related to former communist European countries: Bulgaria, Czech Republic, Slovakia, Slovenia, Hungary,

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Poland, the Baltic countries. Of data provided by EDA portal, we especially chose those related to the percentage of GDP allocated to defense, the number of military personnel, civilian and cumulative in the defense systems, the average volume of investments depending on the number and the amount of personnel expenses.

In order not to be misunderstood, point out that, despite their importance, the defense funds are not sufficient to figure the effectiveness of an Army, even though this paper advocates intelligent use of available resources, especially for minimizing waste. Because waste is to maintain troops which will never fight, being unable to fight due to lack of skills and training, waste is an attempt to reproduce the entire (the Romanian society) in one specialized segment of his (military), especially given the endeavor of full professionalization, to achieve objective civilian control.

On the other hand, it is clear that underfunding defense system jeopardizes major performance objectives. Moreover, simultaneous maintenance of multiple objectives that cannot be financed put pressure on the other, reducing the effectiveness of the entire system.

Table 1 presents information taken from EDA statistics for 2009.

		% Of GDP	Military	Civilians	Staff	Investment / Military	Costs personal
		<i>%</i>	<i>person</i>	<i>person</i>	<i>person</i>	<i>EUR</i>	<i>million</i>
Romania	EN	1.2 9%	68340	12789	81129	1,775	1,182
Austria	AUT	0.86%	29533	9,030	38563	10524	1,608
Belgium	BEL	1. 12%	34156	2,073	36229	7,759	3,003
Bulgaria	BG	1. 74%	29803	8,470	38273	3,250	404
Cyprus	CYP	2.06%	12249	785	1303 4	5,862	236
Czech Republic	CZE	1. 39%	23186	8,782	31968	8,463	986
Estonia	EST	1. 72%	3,209	1,032	4,541	18127	75
Finland	FIN	1.50%	36479	6,682	43161	20186	789
France	FR	2.01%	233600	67500	3 011 00	50736	7,466
Germany	GER	1. 34%	246 244	30984	277228	28884	17835
Greece	GRE	2. 07%	124266	10601	134867	9,240	2,489
Hungary	HUN	1.04%	21196	3,653	24849	5,831	576
Italy	IT	1.40%	191231	30479	22171 0	16424	16245
Ireland	IRE	0.59%	9,550	730	10280	8,836	685
Latvia	LET	1. 08%	4,763	1,288	6,051	5,017	97
Lithuania	LIT	0.90%	7,922	2,164	10086	7,992	161
Luxembourg	LUX	0.47%	882	130	1,012	77241	84
Malta	MLT	0.71%	2,174	116	2,290	996	34
Netherlands	NL	1.4 3%	47660	14509	62169	30411	4,282
Poland	POL	1. 81%	97170	46280	143 45 0	16018	3,357
Portugal	ROP	1.61%	38927	7,336	46263	7,607	1,952
Slovakia	SVK	1.29%	14204	6,949	21253	5,932	504
Slovenia	SLO	1.62%	7,053	1,443	8,496	15978	359
Spain	ESP	1.05%	129723	26093	155816	11004	7,055
Sweden	SWE	1. 23%	14357	6,761	21118	79595	1,236
United Kingdom	UK	2.56%	192300	83060	2753 60	58960	14724

1. Table 1: Statistics on employment EDA

It can be seen that despite an important number of military and civilian personnel meant for defense, share of GDP is below the European average, but without looking very small. On the other hand, if we add the fact that he is, for years, constantly decreasing, and that the GDP per capita is very low in Romania, we can deduce that the evolution of defense funding is inadequate and does not actually allow reducing the gaps with the Allies. Figure 1 shows the position of this indicator in those countries.

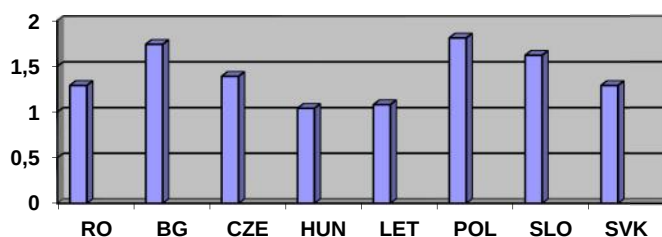


Fig.1. Percentage of GDP allocated for defense

A second indicator that seems interesting is related to investments made for each soldier. This time, Malta is on the last place, but penultimate is Romania, where the investments per soldier are approximately twelve times lower than the European average. We view this situation, given the same countries as in the previous figure.

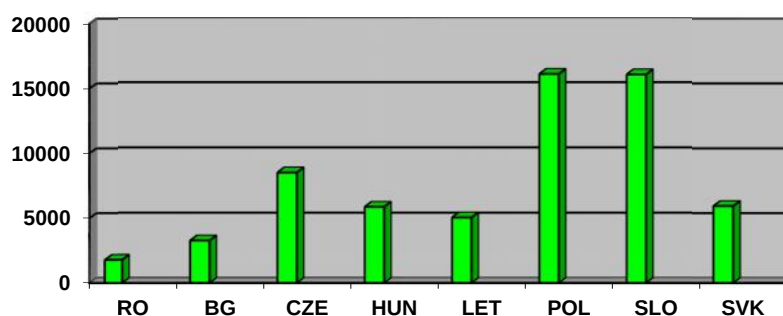


Fig.2. Investment volume and the number of staff

As can be seen, the position of the indicator is particularly critical in the group, its value being significantly lower in Romania than in other states.

Finally we seem relevant an indicator referring on personnel costs related to the number of soldiers and civilians in the system. As can be seen here, Romania, alongside with Bulgaria, has the lowest volume related to the number of personnel.

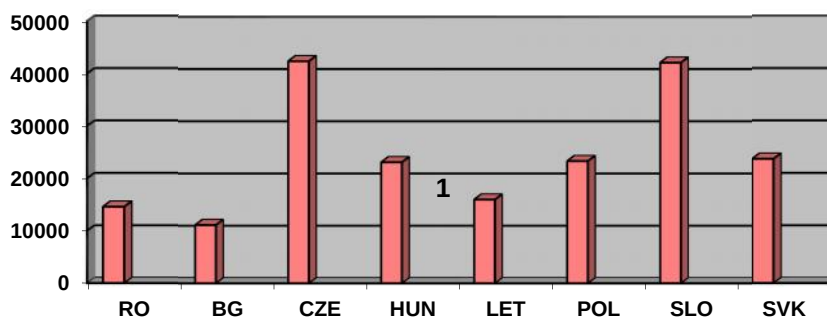


Fig.3. Staff costs per employee (EUR / person)

5. Conclusion

Full professionalization of the Romanian Army can be discussed from multiple viewpoints. If we see the professionalization exclusively as recognition of the military profession, equivalent to the civilian occupations, we can say that it is already professionalized. If we consider, however, that this profession requires skills and exercise its powers effectively, things are not good.

It is imperative a system of recruitment and career advancement greatly improved and a proper sizing of the available resources, including for the financial components, and in spite of its positive image within and outside the country, the Romanian Army needs new efforts to be effective and efficient. Given that the additional allocation would not to be expected, we believe it is necessary to prioritize and restructure the objectives and the system, so partners gaps to not become an insurmountable problem.

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THE MILITARY SCIENCE – SYSTEM OF HUMAN KNOWLEDGE

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Abstract:

An essential feature of human is his will of knowledge owed to its own needs or system needs he is part of. We born with instincts and die with more or less developed volume of knowledge. Anyway, human gets along his existence a value by the things he knows, by the things he can do and by his creations.

The military science by its content is a creation of humans which in the knowledge process use common but also specific techniques, methods, procedures, means, norms and principles.

Key words: military science, knowledge,

1. The Systemic Approach of Military Science

The military science in the ensemble of other nature sciences is regarded as a science particular for a field, respectively the military field. This doesn't mean certain elements of its content can't be also found in other sciences used by other fields. Actually, among many sciences there are interferences, subordinated elements, common elements which generally brings consistence to the science.

The great savants of the world grounded their discoveries on the valuation of knowledge from many fields of activity. Neither the military science remains a close system; therefore, there appear connections and interferences with the technical sciences, economy, psychology, army's sociology, etc.

Thus, the military science offers an explanation of theories, laws and principles of fight by using knowledge from other sciences of fields of other sciences. The reason to be of the military science results from the fact it offers to the commandants' efficient knowledge and solutions for the organization and leading of the armed fight, for the efficient preparation of troops.

As regards the results of the military science, they must find their practical value in the settlement of some acting forms, procedures and methods which creatively, constructively and particularly applied in concern to the situation to lead to the victory. The victory is the dream for any fighter and one of the demands that provide this is to respect the norms, rules and principles elaborated by the military science. It is known the military power of a state greatly depends on the ratio of development of scientific knowledge with military specific found in as the theory of military art. Therefore, here is another argument in the favour of the necessity to develop the content and functions of the military science.

The specialists' in the art of war strongly sustained, over the evolution of the military power, the need to get the knowledge needed for the preparation and conducting the operations and battles.

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Here is what General Constantin Hîrjeu stated referring to the theory and the art of military leadership: „*It remains to see which of them, the art or the science, weights more today in the leadership of war. A military genius creates, does art; a military commandant, excepting the geniuses, skilfully use the methods of battle and the principles of the military sciences deduced from the practise of war, in other words, he does military science (:). Without a genius, the leadership of war will have from here on need of judgement (intelligence) and science. The science will give us the knowledge and the judgement (intelligence) the mean to use this knowledge to the war practise (to know is one thing, the know-how is something else). We will have to use by the capacities formed by science because the military geniuses don't come when they are called*”.¹

If we would be to synthesise the things said by the General Hîrjeu C., we can tell the military science originates in the practise of actions' conducting, and the actions are the expression of the application of the knowledge system that brings content to the military science.

There are needed a series of clarifications to appreciate if the military science is assimilated to a system and by the presentation of the characteristics we hope to answer to this problem.

1.1. The structural elements of the military science

In the scientists' world, there isn't always a unity of views. Almost everywhere are opinions, commentaries, sometimes contradictory over the mean of understanding or perception of a subject, phenomenon, thing, etc. Thus, neither as regards the status nor structure of the military science there wasn't a consensus. In this concern, in the specialty literature appeared formulations as: „*knowledge of war and the armed fight is an art, therefore, there isn't military science; knowledge of war and the armed fight compose a science therefore the military science can't be identified with the military art*”².

Such appreciations which triggered new and harsh disputes, only lead to an obvious progress to the thoroughness of the military phenomenon and basically to the recognition of the military science as fundamental mean of knowing the military field in general and the military action in peculiar.

The last results obtained in the field of military action knowledge emphasize the following components of the military science: the object of the military science, the general theory of the military science and the military art.

The object of the military science

The description of facts and events specific for the military field known by “*military action*” collocation there's the studied object of military science. The military action is composed by military actions by essence (operations of strategic, operative and tactic levels), military actions by destination and actions associated to the fight.

In the military actions by essence of offensive, defensive type – the defining element is the violent military confrontation as result of using a diversified range of armament and fight technique. The military actions by destination (designed for the fight) represent those actions needed to fulfil a mission or to aim an objective. In this category can be considered the specific actions to provide the actions and protection of troops, the logistical manoeuvre and, sometimes, even the deployment.

¹ Constantin Hîrjeu, Pregătirea armatei pentru război. Studiu de organizare, de psihologie și de instrucțiune militară, București, Atelierele grafice SOCEC, 1921, p.191.

² Cf.Tratat de știință militară, vol.I, Editura Militară, București, 2001, p.20

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The third category, namely the actions associated to the fight are actions by which *“the military structures are prepared and brought to the readiness state in order to be able to undergo fight of non-violent military actions”*.³ Although here can be included other measures as: the preparation of territory and economy for defence, the preparation of population for defence, the creation of national defence system infrastructure, etc.

The range of these military actions underwent into a space and in a period of time forms the battlefield which in the most frequent situation is integrated.

The integrated character of the battlefield is given by the participation to the military action of many categories of forces of the army and types of weapons under a unitary leadership and in close cooperation in order to reach a common goal.

The military action is based on a complex social relation, namely the conflicting political relation (the social relation born by the armed conflict between the social groups, peoples, nations, states, coalitions, alliances) in its sharper form of manifestation, ***the violence***. For the entire social life, the constraint or violence stands fundamental. It represents the reality dominating and the harmony as ethical principle keeps the role of desiderate, although is superior as value.

The military action undergoes among violence (the armed fight) and non-violence (non-violent military actions). Still, it might appear the question: have the stability and support operations a violent compound? The same question is available for the intermediary operations. Still, by the experience of the late military conflicts it results there can be moments wherein violence to also appear in such actions.

As type of social action which aims the disorganization of enemy's system of actions, its capturing or annihilation, and also the destruction of armament and fight technique, the military action presents many similitude with the other types of social actions but also a series of peculiarities. Thus, the similitude of the military action with the other types of social actions origins in the generic definition of the action concept as a deviation or change of the normal course of events following the intercalation of the agent in their trajectory as a event marked by an intention or a goal to the action's structure.

The military annalists are unanimously accepting the differences between the military action and the other types of social action, inclusively the political action, come from the nature of the agent involved in the action, action's goal and also the used means of battle.

The political essence of the military action is given by the metamorphosis of the political goal as military goal and objectives which accomplishment priory comes to the national or allied military structures.

The general theory of the military science

As specific field of analysis, research and explanation of the military phenomenon as a whole or some of its important dimensions, the general theory of the military science

³ F.T.1- Doctrina Operațiilor Forțelor Terestre, București, 2006, Secțiunea a-2-a, Caracteristicile confruntărilor armate moderne

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occupies a meaningful spot in the military science. It comprises a system of fundamental ideas or generalizes the military practice and reflects the real processes of the armed battle.

It designs “*an ensemble of sentences logically organized which synthesize information about the totality of the elements composing the military action, as well about the reports and relations settling between them, between them and the whole (the military action as a whole), between the military action and the human action in general*”.⁴

Any scientific research finality is to build an operational system of ideas into a field or subfield. In this regard, the general theory of the military science is the final result of scientific research of the military field.

The general theory of the military science includes all the directions and means of knowledge of the military phenomenon.

In a conception that enjoys the broadest sense, the general theory of the military science comprises: the categorical system, the sentences’ system and the methodology (an ensemble of methods and techniques of investigation of the studied object).

The categorical system of the military science comprises the basic notions used in the research of the armed battle phenomenon and the resolution of the issues related to practical undergoing of the military action.

There can be numbered as defining elements of system of categories and notions, collocations or concepts as follows: the military action, mission of combat, norms and rules of engagement, armed force, military potential, power of battle, armament and technique of fight, operation standards, operation, manoeuvre, battle, intermediary operations, deeply combat, interdepartmental operations, surprise, safety, etc.

The military theorists appreciate in the military science is “*frequently operating with conceptual series of contraries, even if not every time are sensed the multiple senses and implications of those concepts, their strategic consequences and techniques*”⁵ expressed in couples as: offensive – defence; attack – counterattack; offensive – counteroffensive; space – time; manoeuvre – counter-manoeuver; hitting – protection; surprise – safety, etc. around which there were constructed systems of strategic, operative and tactical thinking.

The system of collocations is formed by statements with status of premises, hypotheses, axioms, logically organized definitions, characterized by systematization and uniqueness providing this single and specialized universe of theoretical discourse of armed battle phenomenon. A meaningful spot in the system of collocations is occupied by the axioms and this does as the general theory of military science to get along the character of logical system the one of axiomatic system. The axioms of the general theory of military science are formulations in form of the laws governing the military combat. They appear as essential necessary, repetitive and relatively stable reports between the intern dimensions of war phenomenon and also between them and other fields of social life determining the preparation and leadership of the military actions.

As element of the general theory of military science, *the methodology* is build of a system of methods and techniques of investigation able to be applied in the knowledge of military action.

Generally, the military action is presented as three stages: peace, crisis and war. Presently, the temporal and action delimitation of those stages become greater and increasingly delicate issue because there is certain interference of those.

⁴ Colectiv, *Tratat de știință militară*, vol.I, Editura Militară, București, 2001, p.22

⁵ Frunzeti Teodor, Mureșan Mircea, Văduva Gheorghe – “*Război și Haos*”, Editura Centrul Tehnic Editorial al Armatei, București, 2009, p.147.

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The thorough study of the armed fight aims to bring new elements as regards the knowledge about how are manifesting the laws and principles which governs the military action in relation to the qualitative mutations in the field of the military techniques; the elaboration of a unitary picture of different disciplines studying the armed fight; the emphasizing of multiple and complex mutual determinations and conditionings between the armed fight and the other types of social actions; the analysis of relational and functional modifications intertwining in the structure of military actions in the new conditions of war undergoing; the constitution of some strong, stable and mobile systems of action; the clarification of meaning of concepts, terms and notions describing the armed fight, etc.

The research methodology in the military science uses a wide range of methods and procedures, some common for many sciences or adopted from other sciences (empirical methods – the observation and experiment; analytical methods – induction and simulation, but also specific methods as the methods of applications and war games.

The military art

Along its existence, the military art as compound part of the military science was defined according to the evolution of the military phenomenon and of ensembles of ideas allowing a detailed analysis of it. The place and importance of the military science in the structure of military science are given by the fact it is the specialized field of organization and leadership of the armed battle. It comprises the principles, methods, procedures and rules of preparation and leading of the military actions and also the personal abilities needed for the commandants and troops to obtain the success in operations.

Clausewitz affirmations are suggestive for the correct perception of theoretical and practical-applicative part of the military art: „*Where the logician draws the line, where the premises end, which are the result of knowledge, where starts the judgement, there begins the art [...], where the goal is creation and production, there is the field of art; the science rules where research and knowledge are the goals*”⁶.

The content of the military art underlines its structure includes: the theory of the military art (technology of the armed fight) and the armed fight (the real undergoing of the operations).

The military art theory studies and generalizes the experience of the armed fight in order to know and elaborate principles, rules and procedures of action. It comprises the strategy, the operative art and tactics and is strongly related to the general theory of the military science.

The practical-applicative part of the military art known as “*the fight technique*” or “*the armed fight*” or even “*the execution of the armed fight*” refers to the real undergoing of the military actions.

The particularities of the military actions from the last two, three decades strongly emphasizes the importance of theoretical accumulations and practical experience in the projection and leading of operations.

1.2. The functions of the military science

The military science as any other science it hasn't an intrinsic goal. It is dynamic and useful because it satisfies the needs of knowledge and management of the military phenomenon, especially the armed fight.

⁶ Carl von Clausewitz, *Despre război*, Editura Militară, București, 1972, pp. 132-133

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The military sciences functions are: referential, explicative, predictive and instrumental (the science of practice).

The referential function consists in the military science offers an image, a representation, a pattern of the military phenomenon and the armed fight. This function answers to the question “*how are structured and functions different fields (subsystems) of the armed fight phenomenon*”.

The explicative function comes to emphasize and differentiate connections between the armed battle compounds and the fields of the military phenomenon. The military science look to explain a phenomenon, law, principle, to look for the cause of an event in order to be better perceived, understood.

By its *predictive function*, the military science makes predictions over the evolvement of military events and processes, of the military phenomenon. In this concern, there can be deduced new knowledge, appreciations and conclusions over the possible projection of the military phenomenon.

The military science it also has *instrumental (practise science) function* by which offers patterns logically built, reasonable guides of action. By this function is provided the action's improvement, the rapidity of operations' preparation and leading, the avoidance of some major malfunctions of the actions' systems.

2. Stability and Dynamism in the Military Science

Any science, in its essence and existence it has history, an evolution in time, according to other sciences impact and especially the transformations ongoing in the physiognomy of the studied object.

In the last decades, the scientific means of interpretation evolved. The discovery of discontinuities in the means to conceive the theoretical demarche (Thomas Kuhn, *The structure of the scientific revolutions*), the passing from the verifications' position to the promotion of assessments by comparing the theories and trials of identification of experiments able to falsify them if there aren't correct (K. Popper, *The logics of scientific research*), the critics which R. Boudon does to the causal analysis of social constitutes major contributions to the instauration of how the scientific demarche is conceived, effectuated and assessed.

2.1. Fields and disciplines of study in the military science

Is known the military science developed not only by the multilateral way of thoroughness and comprising of the studied object, the increase of generalization and abstracting ratio, and also on the way of delimitation inside it of some fields, disciplines and branches.

The war became very complex phenomenon with consequences over all the social life dimensions. From here results the need for enriching the fields and disciplines of study in the military science. Therefore, if in its period of formation it was composed by the strategy, tactics, fortifications and military history, presently, there can be considered as disciples of study: the general theory; the military art; the history of military art; the training and education of troops theory; wherein can be added: the military psychology; the military sociology; the military leadership (management); the theory of war games and others.

As long as the military phenomenon modifies from a day to another, we surely be assisting to an inter-conditioning and interference with other disciplines and fields. For

example, although it seems as SF field, the parapsychology is more frequently in the attention of researchers of the military field.

Still, all these can't lead to the substitution of the military science with other sciences. The military action remains undoubtedly the object, the field of study of the military science.

“The war will be in the XXI century the sharper manifestation of the conflicting political relations existent at one given time between great groups of peoples (nations, peoples, states, coalitions of states, etc.) organized from military regard”⁷. Such confrontation doesn't limit to the military field but involves all the social life spheres: political, economic, technical-scientific, ideological, diplomatic, informational, psychological and other nature. Therefore, the military science in the effort to exacter define the dimensions and physiognomy of the military actions must find, borough some data and information from such different fields. Otherwise, the military science keeps own identity in the future having well defined object of study, own methods and techniques of investigation.

2.2. Directions and orientations of research in the military science

Romania's adhesion to NATO presumes the continuation of the effort to modernize the armed forces in order to be able for a better answer to any type of actions' exigencies. Along a modern endowment and capability, the army must be solidly prepared in a system of ideas compatible with the NATO member states. This presumes a common language, a unitary informational support, a modern conception and lastly an adequate methodology. All these become possible under the conditions wherein all the efforts of the military science by consecrated or becoming specialists are directed and oriented to a corresponding finality.

The changes produced in the late 10-15 years in the conception of forces use to solve some complex situations on peace, crisis or war impose from the military science part a profound and logical approach of the military action. The apparition of terrorism “*at open scene*” and the engagement of the armed forces against it makes like the military science to encounter a new dynamic in its theoretical, formative but also in the practical-applicative dimension by its field – the military art.

As object of study of the military science – the military action – it has known a profound and consistent dynamic in all its ampleness. The great diversity of forms, procedure, techniques and norms standing on the basis of projection and leading of the military action enforces the military science to have a permanently open, new content but also a stability of some enounces collocations and norms.

A systemic, functional approach of the military action will lead to a superior explanation of theories, principles and laws governing the military phenomenon. Thus, it will be more clearly discovered the connection between the military phenomenon and multiple aspects of the social life. Of course, presently, and especially in perspective we will assist to military deployments aiming diverse goals, participant forces, means of action and also post-conflict arrangements.

By this regard, there can be identified some research directions for the military science as: the integration of the historical perspective in the scientific creation and construction of the military field (military science field); the amplification of constructive demarches of scientific theories; the increase of theoretical thinking role and others.

⁷ Mureșan M., Văduva Gh. – “*Războiul viitorului, viitorul războiului*”, Editura Universității Naționale de Apărare, București, 2004, p.83

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The frequent appeal to the history of wars, armed combat is determined by the deep methodological and conceptual transformations of the military science that reach the general frameworks of knowledge and the contemporary perceptive approaches.

By this regard, it comes from the understanding of the entire evolution of the military science needed to determine its future development directions.

In the historical perspective, we have the possibility to reveal the factors which analysis is conditioned the scientific explanation of the military phenomena as: the economic conditions founded in the economic potential; the social-political relations, especially the regime of state and its politics; the mean of development of the military science, techniques and culture, country's population and military practice.

Today, we assist to the formulation of a great number of concepts and theories over the preparation and conducting the military actions under very complex conditions. Moreover, there is necessary a critical assessment of elements with normative nuance under the conditions of some restructurings of all the military systems.

The crossing from the analysis of some reasonable, structural, systemic aspects will allow the widening of the informative spectre of the military science.

2.3. Modern coordinates for the assessment of the military science

The beginning of the XXI century created in the military science a series of problematic situations came in the asymmetrical actions field, of fight against terrorism, of stability and support actions (operations). To those, we add the issues related to the more aggressive and good informatization but with certain vulnerabilities of the newest results in the high tech fields; we can say certain collocations as the informational war or network-based war carries the military science a new effort of creation in the theoretical and practical plan.

The military science must continuously adapt the military actions' principles, methods, procedures and rules of preparation and leading therefore these to correspond to the organizational, structural and endowment transformations specific for the modern military system.

The era of information technology fundamentally modifies our perceptions over the military confrontation and asserts us to the profound research of phenomenon.

From the analysis of the already presented facts, it results the military system is an ensemble of elements in interaction, constituting an entire organized with specific properties and own functions, different from the ones of the composing elements, a distinctive and relative autonomous formation reported to the surrounding area which can be identified in any field (physical, biological, social, etc.).

The system's objects are, at their turn, structural totalities (subsystems) in which framework the system's laws aren't identical with the ones of the component elements. The adjacent (complement) of the concept of system is the one of environment wherein are included elements situated outside the system which influence it or are influenced by it.

The trends of evolution of the military science must be strongly correlated to the evolution of the military phenomenon as a whole. Under the influence of factors standing on the basis of changes in the modern physiognomy of war, the military science must continuously adapt its principles, methods, procedures and rules of preparation and leading of the military actions therefore these to correspond to the organizational, structural transformations and the endowment specific for the modern military system.

Even all types of conflicts and actions seem to reproduce in new forms the ones of the antiquity, Middle Ages and modern and contemporary époque, their comprising

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sphere, content and means of undergoing assert new rules, new configurations and even new principles. These are found in the reform of defence policies, doctrines and strategies of all countries and armies in the world.

NATO, the alliance that owns the supremacy in the field of modernizing forces, means, doctrines and strategies of use seems to continuously adapt to the necessary changes.

We live into a changing world, a world of sort of questions and all means of many questions. Some have simple answers, others have complicated ones, but many have undetermined answers. The questions over “the world war” are part of this category.

The military science must keep up with the evolution of all sciences with which it has common elements, the evolution of the military phenomenon and society in its whole. The military action, as object of study of the military science bears and will bear in the future essential modifications in concern to its goal, engaged forces and means, the conception of their engagement, all being connected to the political objective.

The military science must offer the complex framework to solve the problematic it involve the armed fight in the future wars, to share models for the resolution of challenges raised by the military phenomenon, phenomenon in a continuous change.

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ECONOMIC AND FINANCIAL DIMENSION OF THE EU DEFENCE AND SECURITY

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Abstract:

The Union has today set a new strategic goal for the next decade: to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth to provide jobs to more and better jobs and greater social cohesion .

Keywords: gross domestic product, budget, national defence, financial resources, defence planning

1. Introduction

In this article entitled: *Economic and financial dimension of the EU defence and security* - intend to analyze the European Union economy with the current financial crisis, progress in the development of common foreign and security policy, the involvement and selected solutions of the international and European organisations in solving the difficult situations on the continent. All these show that Europe is preparing to play an important role in its own security architecture, including the defence architecture, and to provide settlement patterns, on rational, equitable basis, of the relations between nations and states, through the harmonization of their interests. The security interests and objectives of the European countries do not generate conflicts, the security environment is positively influenced by European and Euro-Atlantic integration processes, the expanding community of states that share and promote the values of democracy and market economy, the deepening of regional cooperation.

2. Economic and Financial Dimension of the EU

The risks of an emergence of a traditional military confrontation on the European continent have been significantly diminished. „However, there are still occurrences of instability and crisis at sub-regional level and trends of fragmentation, marginalization or isolation of some states. Countries in Central, Western and South-East Europe are facing economic, social and political difficulties associated with the transition process to a society based on principles of democracy and market economy that can generate enough risks to the security of states in the region”¹.

Thus, the European Union was caught by this crisis without having created powerful tools for a coherent response, which, unfortunately, it rarely managed to provide, whether it was about the economy or the geopolitical field. Under these conditions, each head of state, every minister of finance, each national government has responded individually, fact that will make extremely difficult the proper

¹ <http://www.mapn.ro/strategiasecuritate/index.html> accessed on 12.01.2012

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functioning of the Union on a long term. The strong fragmentation of markets and this regionalization involves a high risk of economic disorder. The current owners of the world power will hardly allow the emergent economies to become world powers as well. Therefore, the struggle for power will not only be held on the realm of economy, but also it is expected that other mechanisms be involved. This perspective emphasizes the difficulty of estimating the E.U. progress towards a top place in the balance of world power. Through its economic, financial and commercial European Union occupies an important position on the world stage. As the largest trading power in the world with a coin which ranks second power level monetary, E.U. devotes more than 7 billion a year in aid to developing countries. Thus, the E.U. trade and association agreements with most countries and in most regions of the world. Comparable economic engine fueled by a population numbering about half a billion, E.U. plays an important role in international affairs. She begins to have a say, as you increase the number of decisions taken jointly by the Member States in terms of foreign policy. The E.U. was founded on the principles of liberty, democracy, rule of law and respect for human rights, it is with the U.S. and Japan, one of the three pillars on which the world system of pluralist democracy and market economy².

The European Union is the first world economic power combining economies of the 27 member states, with a gross domestic product (GDP) of U.S. \$ 16.748 billion in nominal parity. Thus, fourteen Member States have adopted a common currency, the Euro, the European Central Bank regulated. EU economy EU is a single market and is represented as a single entity in the WTO (World Trade Organization). Created as a zone of peace and prosperity, the European Union seems to fall prey to the debt crisis, which revealed a series of misunderstandings between the 27 Member States and ultimately could not find solution. The decision to link the richer by a monetary union but at the same time allowing them to retain control over national budgets and tax system has led today to a critical point. Further political and economic integration, such as the establishment of a central government could save the euro, and some international economists say that now is the best time to act. The latest economic forecasts of the European Commission, in 2010-2011, the E.U. has increased by about 1 ¾%, rising to 2% in 2012, as they increase investment and consumer spending. This will have slight positive effects on the labor market. The average E.U. unemployment rate is 8.9%. This is high compared with the U.S. and Japan. The unemployment rate varies between Member States, the lowest being in Ireland, 4.3%, while the highest is in Poland, 18.1%. Average for the 12 Member States of the euro area is also 8.9%. Unemployment varies significantly within the same Member State. The lowest unemployment rates were recorded in July 2009, the Netherlands (3.4%), Austria (4.4%) and Cyprus (5.5%) and highest in Estonia (18.5%), Latvia (17.4%) and Lithuania (16.7%). The main causes of worsening unemployment "are many and varied from one country to another, they ranged from economic slowdown, and hence, investment in productive apparatus structural crisis, following the introduction of technical progress and the need to restructure its"³.

The E.U. is the world's largest exporter and second largest importer. Internal trade between its Member States are facilitated by suspending barriers such as tariffs and border controls. Euro area trade is facilitated by the common currency is the euro. E.U. represents its members at the World Trade Organization (WTO) and speaks on

² Felicia Dumitru, *European construction*, Library Publishing, Târgoviște, 2004, p. 69.

³ Iulia Tanase Frasina, *Logistical support effects-based operations in the globalization era*, Publisher National Defense University "Carol I", Bucharest, 2010, p. 18.

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behalf of its members in case of conflict with countries outside the E.U. *Tertiary sector (services)* is by far the most important in the EU, accounting for 69.4% of GDP, compared with the secondary sector (manufacturing industries) that are therefore, $\sim$ 28.4% target of GDP and agriculture with only 2.3% of GDP. Therefore, domestic demand is expected to play an important role, as they increase investment and consumer spending. *The agricultural sector* is supported by grants from the EU through the Common Agricultural Policy (CAP). It is currently 40-50% of total expenditure in the E.U. It sets a minimum price for farmers in the EU, which is criticized as a form of protectionism that inhibit trade and cause damage to developing countries, one of the leading opponents of the CAP is the United Kingdom's second largest economy in the E.U. which has constantly refused to abandon the British rebate. France, the biggest beneficiary of the CAP and the third largest economy in the E.U., is one of the supporters of the CAP.

Whatever reforms, the CAP is the most integrated of all E.U. policies. Therefore absorbs a large share of funds. However, the European budget that is allocated decreased from 70% (in 1970) to 34% (during 2007-2013). Reduce budgetary resources allocated CAP indicate that the E.U. focuses on other aspects such as cost reduction and reform orientation rural development, which will be allocated 11% of the budget for the same period.

Conclusion

It is well known that the economic and financial dimension plays a decisive role in achieving national security. More so in a new phase of globalization dominated by partnerships and alliances, a strong economy and competitive performance, and dynamic is an important pillar of national security by ensuring conditions for social security. The economy has been and will always be one of the cornerstones of building a credible military power and achieve a sufficient level of security at national, regional or international. Only insofar as economic factors could be converted to defense and security resources differ from one period to another.

"The economic dimension of states is given access to resources, finance and markets, in order to maintain an acceptable level of welfare and state power"⁴. Despite the fact that all states pursue objectives to ensure the security and hence the safety of their citizens, "not all states have physical power or authority to carry out the functions of ensuring internal and external security that have been formally assigned".⁵

Thus, I believe that the economic and financial dimension of states and other international actors is therefore of particular importance in terms of their place in the international system.

Throughout history, great powers were defined in relation to their own capabilities. Although times have changed, financial and economic dimension remains as important. State "special economic performance", which is able to ensure security, "will be seen as a threat to the security of other states, and the state with a

⁴ Sorin Moise, *Facets of the concept of security*, Strategic Colloquium, National Defence University "Carol I", Centre for Defence and Security Strategic Studies, nr. 5 (LII) April 2006, http://cssas.unap.ro/ro/pdf_publicatii/cs05-06, p. 5. accessed on 29.01.2012

⁵ Edward A. Kolodziev, *Security and international relations*, Publisher Polirom, Iași, 2007, p. 163.

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underperforming economy, and national security issues have become vulnerable in their relations with other states ".⁶

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OCCURRENCE AND EFFECTS OF THE GLOBAL FINANCIAL AND ECONOMIC CRISIS

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Abstract:

"The biggest economic crisis since the Great Depression is not a natural phenomenon but a man-made disaster in which all play a role"

Keywords: crisis, inflation, investment, subprime credit,

1. Introduction

The year 2007 meant for all mankind, the global financial crisis, which has turned into a strong economic crisis. It was when central banks had to intervene to provide liquidity to the banking system. Referring to the disastrous consequences of its financial reputation appreciate George Soros: "We are in the midst of the worst financial crisis since the 1930s". In some respects, it resembles other crises emerged in the last twenty-five years, but is also clearly distinguishable from them: the current crisis marks the end of an era of credit expansion, with the dollar as the international currency of reference ¹, it is a result of while imposing and maintaining the paradigm that financial markets tend towards equilibrium, outside any system of national and international regulation and supervision.

2. The economic situation

From then until now the world economy has experienced a dramatic decline in key benchmarks, thousands of bankruptcies led to slowing economic activity, increased unemployment and lower living standards dramatically. To avoid global disaster, the main countries of the world have made major financial efforts in order to give new hope ongoing economic development. As the BBC² reports: on 6 august 2007, American Home Mortgage, one of the largest independent housing loan companies, went bankrupt after he fired most of the staff. The company said that it is a victim of the U.S. housing market crash, crash that led many lenders and borrowers of subprime³ credits with high risk. On 9 august, short-term credit market froze after a large French bank, BNP Paribas suspended three of its investment funds worth 2bn euros, citing problems in the U.S. subprime

¹ George Soros, *The New Paradigm of Financial Markets*, International Letter Publishing, Bucharest, 2009, p 7.

² BBC News, "Timeline subprime crisis: How did the subprime crisis?" [Http://news.bbc.co.uk/1/hi/business](http://news.bbc.co.uk/1/hi/business) accessed on 10.11.2011.

³ Subprime credits - those loans to people who either have a bad repayment history, or have poor financial potential in terms of conventional banks, are common in countries with developed financial markets from the point of view of the instruments operating in these markets, especially the United States and Western Europe. http://www.4women.ro/index.php?module=news&news_id=757844 accessed on 15.03.2012.

mortgage sector. European Central Bank made an infusion of 95 billion euro area banking system to move more easily than subprime crisis. U.S. Federal Reserve and Bank of Japan took similar measures. On 10 august, European Central Bank has provided banking funds still 61 billion euros. U.S. Federal Reserve said it would provide the shortest time how much money will be needed to tackle credit. On 13 August, the European Central Bank pumped 47.7 billion euros in financial markets, the third injection in as many days. Central banks in the U.S. and Japan have also raised over amounts previously granted. Goldman Sachs, the world's leading investment banking market, said it would provide \$ 3 billion to support a hedging⁴ fund hit by the credit crisis. On 16 august 2007, Countrywide Financial, the largest mortgage business developer, withdrew its entire credit line of \$ 11.5 billion. Australian mortgage lender Rams admitted also that it has liquidity problems. On 17 august, the American Federal Reserve discount⁵ rate halved to help banks solve credit problems. On September 13, it was discovered that Northern Rock, the largest British mortgage bank was almost insolvent. This situation triggered for the first time in the last hundred years in the UK, a rapid migration of customers to other banks. The crisis came with slow steps, but it could be anticipated since the end of 2000. Thus, the Federal Reserve decreased the federal funds rate several times, from 6.5% to 1% in only three years, ending in July 2003 to the lowest rate in the last half century. Cheap currency has created a housing market boom, an explosion in purchases of companies with borrowed money and other excesses. Mortgage lenders have low standards, and invented new ways to stimulate business and generate commissions.

At the same time, investment banks on Wall Street have developed a variety of new techniques to transfer credit risk to other investors, such as pension funds and mutual⁶. According to expert assessment *Alexandre Lamfalussy*⁷, financial crises are necessary in that they "are an indispensable sanction management errors" and the question arises crisis but not eliminating all those who "weighs heavily on economic activity and represent a systemic threat".

In the years that led to the economic crisis - financial crisis, growth in U.S. consumption and very low savings rates have contributed to the entry of fast growing economies in Asia and oil source states, a significant amount of capital stranger. These massive capital inflows and low interest rates in the period 2002-2004 led to unprecedented easing of credit conditions. As a result, real estate loans and exploded. Were easily obtained different types of loans (mortgage, credit cards, car), which have proven over time that could not be funded. Against this background, the current crisis was to debut July 2007 (TED spread spikes in July 2007 article published in the Wall Street Journal in May 2008 - since the loss of investor confidence in mortgages secured U.S. led to a liquidity

⁴ 1) Employing a futures market position, opposite cash position on the market (spot) to temporarily replace a transaction to be made on the cash market, as protection against the risk of an unfavorable price have. (2) Refers to any combination of long and short positions in securities, futures and options, which tends to reduce the risk position of the other, any strategy used to reduce risk investment. <http://www.eafacere.ro/dictionar.asp?fid=266> accessed: 29.12.2011

⁵ Discount rate (refinancing rate) - In the United States, the interest rate that banks perceive the Federal Reserve for loans to member banks. <http://www.eafacere.ro/dictionar.asp?fid=535> accessed: 05.03.2012.

⁶ Mutual funds or investment trusts attract financial resources from individuals and companies that invest in various financial instruments such as stocks, bonds or government bonds. <http://www.conso.ro/ghiduri/8/fonduri.html> accessed: 15.03.2012.

⁷ Alexandre Lamfalussy, former director of the European Monetary Institute, former chairman of the Committee of Wise Men on the Regulation of European Securities, considered one of the architects of the financial structure of the EU - <http://www.hemicycle.info/?p=1368> accessed: 17.12.2011.

crisis that caused a substantial injection of capital into financial markets by the U.S. Federal Reserve, the Bank of England and European Central Bank. The crisis worsened in 2008, when stock markets worldwide have collapsed or have entered a period of acute instability. A large number of banks, lenders and insurance companies went bankrupt in the weeks that followed. The production crisis is often held responsible Federal Financing Agency Housing (USA). Who best defined the causes triggering the financial crisis was Ben Bernanke, Fed chairman, Federal Reserve, which, in the interview journalist David Leonhardt, published in the New York Times (David Leonhardt, Bernanke's Midterm Tests, New York Times, January 30, 2008), identifies the following: considerable pressure on the global financial system for over a year and a half now and more extensive global economy, information asymmetry⁸, credit expansion, the impact was transferred the mortgage market, economic and financial ramifications were felt when abrupt halt in lending, increased credit risk and intense aversion to risk, maintaining a high level of systemic risk, lower business confidence in the stability of financial markets, the collapse of real estate prices, loss jobs.

By analyzing the expression of the current financial crisis, which seems to be much stronger than that of 80 years ago, the picture is reflected in the following: developed countries have significantly reduced the growth rate, which determined to stop the creation of new jobs, increased unemployment. All this has led to increased social tensions, to cap labor productivity and, in a word, the degradation of social ecology. Even within these developed countries, the crisis has triggered strong pressure on health and social protection, braking increase living standards and the proliferation of antisocial phenomena such as corruption, prostitution, organized crime generally underrepresented in developed societies. At the same time, because of the financial crisis the country is working to maintain the advantage of capabilities, using levers integration policies, benefits from the international division of labor and controlling new scientific discoveries, global finance and dissemination of technical progress.

3. Conclusion

The effects of the global financial crisis on developing countries and the underdeveloped much tougher. Pressure of population growth, low and even negative rate of economic growth, rising unemployment, rising prices, the level of military spending, increasing external debt and blocking their access to markets for products manufactured by them are just some of the effects of the global financial crisis leading to greater poverty, widening disparities and exerting strong pressure on their use of natural resources, renewable. If European countries, former socialist, there is a strong degradation of economic and social structures, a sharp rise in inflation and unemployment. If we consider progressive alteration living conditions, external indebtedness, amplification antisocial phenomena, lack of insight into the development of these countries, is becoming increasingly visible appearance of dependence developed Western European countries⁹. Thus, the current crisis has captured the attention of the world and goes beyond the initially affected sectors. Alan Greenspan¹⁰ recently defined the crisis as a "credit tsunami that occurs once in a century", caused by a collapse whose root causes are found in the U.S. housing sector. Instability wave propagated from one sector to another, first in the real

⁸ Adrian-Paul Iliescu, Financial Crisis 2008-2009: real issues, University of Bucharest-http://www.cadi.ro/docs/iliescu_information_asymmetry.pdf, accessed: 17.09.2012.

⁹ Paul Hirst, G. Thompson, Globalization in question, Bucharest, Publishing Three, 2002, p 18.

¹⁰ American economist who served as chairman of the U.S. Federal Reserve from 1987-2006

estate sector in banking and other financial markets, then the real economy across the economy. Crisis wave has crossed the borders between public and private, given that blows the financial systems of private companies imposed currently burdensome new requirements on public sector finances. Joseph Stiglitz, professor at Columbia University, a Nobel laureate in economics, former chief economist at the World Bank and member of the Clinton Administration, said the state billions of people in developing countries has been shaken by rich nations by international organizations such as the World Bank, and the measures of globalization, generating negative.

According to Joseph Stiglitz, expressed at a seminar held on the subject in Tokyo, the changes are not only possible, but inevitable. He resumed his famous criticism of rich countries, the World Bank, the International Monetary Fund and the many negative aspects of globalization. He stressed that "economic globalization has been faster than political globalization" and the manner in which it was made and carried out and it is managed "undermine democracy"¹¹. One consequence of the current financial crisis is the influx of capital from Arab states who finance financial bankruptcy of the democratic world. Billions of dollars available in the Arab world is creeping slowly and irreversibly in the developed economies which could lead to the paradoxical situation that they could be conquered from within. In this way the financial resources that can be allocated to the security of nations are beginning to diminish. In this respect, exemplary "intrusion" into the U.S. banking system successful so-called "sovereign wealth funds" of the Emirates Dubai and Abu Dhabi, China, Saudi Arabia, Kuwait and Singapore's, which came to have a significant interest even majority in the U.S. and Swiss banks in difficulty. No less significant in the top five global banks, financial institutions occupied China in first, second and fifth, third and fourth positions return to European society (HSBC¹² and Santander Bank¹³), and Citigroup¹⁴, the first leader of the area, is only in seventh position.¹⁵ Global financial crisis economic economy of unprecedented proportions after World War II, became the dominant theme and object of concern motivated throughout the world. Despite the massive interventions of the European and American governments, the financial crisis is far from having a reliable solution that provides a clear economic actors. Furthermore, the panic seems to take over the market though - the global financial system - were injected huge amounts of trillions of dollars and euros, although EU Member States, the European Central Bank, EDF, USA Japan coordinate more closely and more transparent than ever, and how intervention policies.

¹¹ <http://www.ecogesam.ac-aix-marseille.fr/Resped/Ecogen/stiglitz/STIGbio.htm>. și http://portal.unesco.org/fr/ev.php-URL_ID=6609&URL_DO=DO_TOPIC&URL_SECTION=201.html, *Joseph Stiglitz : "Réformons les institutions économiques internationales"* accesat: 22.09.2010.

¹² HSBC Holdings (The Hongkong and Shanghai Banking Corporation) plc is Europe's largest bank in terms of capitalization, founded in 1865 in Hong Kong and Shanghai. Headquartered in London, England, the company is present worldwide and has over 300,000 employees. According to Forbes magazine, HSBC was the fourth largest bank in 2008 worldwide in the property (2.348 billion dollars), the second in the world in terms of sales (146.5 billion USD), the largest stock exchange in the amount (180.8 billion USD) and the most profitable bank in the world with sales of 19.1 billion USD in 2007.

¹³ The largest bank in Spain and the first in Europe by market capitalization.

¹⁴ American financial services company based in New York City. Its formation was announced on 7 April 1998 by merging Citicorp and Travelers Group. More than 200 million customers have accounts in more than 100 countries and total assets of \$ 1.9 trillion is about.

¹⁵ Dan Stefan - "China, Russia and emerging economies, the main beneficiaries" - Chronicle Romanian, 19.10. , 2008.

The current global economic crisis is an important source of vulnerability and insecurity. Gravity and expansion is unprecedented immediate consequence consists in creating a disruptive effect that is felt and experienced in all structures and areas, including within the military system. This difficult situation undermines the defense and security needs of countries in the world, with effects in reordering the priorities of foreign policy in reshaping military budgets, purchasing and procurement programs and, not least, the equipping and training of forces. Without the necessary financial support, response and action of forces and national capabilities in case of tension, crisis or conflict and achieve internal and external missions undertaken will suffer in terms of efficiency. In conclusion, we can say that the whole world seems today that change course, heading towards a time when the role of the state will be higher, while the private sector will be lower. This is probably the most dramatic consequence of the current crisis. The economic crisis has only just begun and nobody knows when it will end. History teaches us that any crisis, no matter how hard it may be, comes and goes. After the crisis, the economic life will resume its course. After the crisis will end, history will not be called back without paying a heavy price for it. Will require new projects. While before the crisis planet still retain large areas of poverty, world gathered a lot of money and consumption grow without bound. In this race, there was suddenly a serious financial turbulence caused by surplus liquidity and overconsumption, which is now beginning to turn now to a classic crisis of overproduction. After the crisis, but the world will find that lifestyle will be different, that consumption pattern will change radically.

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**MAIN ASPECTS OF COLLECTIVE DEFENCE
RECONFIGURATION THROUGH THE LENS OF NATO
SUMMIT IN CHICAGO. USA AND RUSSIA
– STRATEGIC REORIENTATIONS**

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Abstract:

In the context of the current economic crisis, at the latest NATO Summit in Chicago efforts were made to reshuffle the Alliance on better and more equitable foundations. Essentially, it was an attempt of rebalancing between Europe and USA, on the one hand concerning budget contributions, and on the other hand concerning responsibilities. The cohesion of the Trans-Atlantic Community is under pressure because of the scarce financial resources, the political quasi-paralysis, the substantial institutional inertia and the emergence of new world powers, among which Russia and China. In its turn, USA is in a round-the-clock race for reducing its responsibilities in Europe and Afghanistan, reorienting itself towards the Asia-Pacific area. This summit has been described as the largest in the Alliance history, but also as one of austerity, Western armies being forced to cooperate more in order not to loose technological supremacy.

Key words: summit, alliance, smart defence, costs, political incertitude, antimissile shield.

1. Problems among allies before the summit

Just one week before the NATO Summit in Chicago, tensions within the military Alliance were more visible than ever. Americans were upset because the French, Italians and Germans sold state of the art weapons to Russians. On the other hand, British will endow their new carriers and thus, interoperability with the French Air Forces will no longer be possible, although recently, an agreement was signed between the two countries in this direction. Moreover, former British defence ministers claimed that the US are spending money on useless military projects¹.

Just two days before the summit, a US Congress committee report warned that unprecedented arms sales to Russia risk destabilizing the very security that the Alliance is committed to protect. The contract by which France engaged to deliver the Russian army four Mistral-class assault ships are the first sales of a NATO state of modern offensive

¹ Paul Ciocoiu, *NATO - Summitul aliaţilor dezbinăţi*, available at <http://www.evz.ro/detalii/stiri/nato-summitul-aliatilor-dezbinati-981065.html>, accessed on August 27, 2012.

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military capability toward Russia. Estonia, Latvia and Lithuania, as well as other NATO countries particularly expressed concern over the possibility that Moscow relocate these ships in the Baltic Sea.

United States opposed from the start to the agreement, which was signed in June 2011, warning that the decision is likely to send the wrong message to Russia and allies in Central and Eastern Europe. Congressional report criticizes Germany's decision to build in Russia a modern training centre, as well as an agreement whereby the Italian government will deliver tens of armoured vehicles to Russian army.

2. The agenda of the summit

NATO Summit in Chicago, attended by leaders of 28 NATO Member States and of 13 partner countries, was considered the most important since the creation of the organization; the outcome was a joint declaration signed by participants. The main topics approached at the event were the anti-missile shield, withdrawing troops from Afghanistan according to a concrete timetable, relations between NATO and Afghanistan after 2014, smart defence, the nuclear status quo and Alliance's partnerships.

NATO Alliance was faced with major decisions regarding future prospects – short-term, but especially long-term strategy. Chicago list also included issues such as: enhancing agreements on NATO transformation from the Lisbon Summit, the future NATO missile defence and the future of U.S. tactical nuclear weapons in Europe². It is at this summit that NATO declared operational the first phase of missile shield designed to protect Europe. This is the first of four stages in which European missile shield is to be installed, the defensive system being completed by 2020.

NATO formally announced that the anti-missile shield is going to be installed in Eastern Europe, essential elements being placed in Romania. The shield is an interceptor system of missiles that could target Eastern Europe from Iran; Russia, however argues the system is actually directed against it. The US-Romanian missile system is not a NATO integrated project. Missile capabilities installed in Romania will become operational from 2015. After this date, the two countries will discuss integration of this system within NATO framework. U.S. President Obama said in presenting the results of the summit that participants agreed that NATO "is declaring an interim capability for the system"³. Although the missile shield is strongly criticized by authorities in Moscow, the leader of the White House reassured them that it is not directed against Russia.

NATO leaders decided to continue the mission in Afghanistan by the end of 2014, when international forces' troops (130,000, soldiers) are going to be withdrawn, the responsibility for security of the country's being gradually transferred, and then Afghan authorities will have full responsibility on security. This issue included the establishment of the organization of Afghan troops, whose number could be reduced from 352,000 to

2 Adrian Marius Dobre, *Summitul NATO de la Chicago: fără Putin, cu apărare pe bani puțini și cu retragerea trupelor din Afganistan*, available at <http://pesurse.ro/2012/05/22/summitul-nato-de-la-chicago-fara-putin-cu-aparare-/>, accessed on August 27, 2012.

3 President Obama on Results of NATO Summit, The White House Office of the Press Secretary, *Remarks by the president at a NATO press conference*, South Building Chicago, Illinois, available at <http://london.usembassy.gov/obama268.html>, accessed on August 27, 2012.

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228,000 soldiers and policemen. Also, starting with 2015, NATO will provide over four billion dollars annually to fund Afghan troops⁴. According to estimates, Washington could provide about \$ 2.5 billion, but the rest is expected to come from Europe.

NATO involvement in this country for nine years has produced what some have described a collective fatigue among European and questioned the NATO engagement in conflicts outside Europe. After the mission in Afghanistan ends, NATO will remain without a major operation for the first time in the last 20 years.

The second challenge is the sovereign debt crisis in Europe, which forced the Alliance states to reduce their military spending. Before the crisis in Greece, NATO spending had dropped by 21% compared to 1991⁵.

Enhanced military cooperation is intended to mitigate the negative impact of reduced military budgets and meet Americans' exigencies, requiring Europeans to assume more defence responsibilities and obligations⁶. In this regard, the summit was a real springboard for the initiative called 'smart defence', which is about pooling funds to purchase military equipment. According to the NATO website and declarations of Secretary General Anders Fogh Rasmussen, smart defence aims to encourage allies to cooperate in the development, acquisition and maintenance of military capabilities in a more economically efficient way in a new era of economic austerity and cuts in defence budget. The goal is to do more with less money by changing mentality of NATO members on how to make purchases and be "smarter" when investing in defence capabilities.

A total of 25 projects were launched in Chicago, many of them referring to training of helicopter pilot and teams that serve these appliances on the ground. For instance, one project refers to earth monitoring system (Alliance Ground Surveillance, AGS) which would be financed by 13 allies, including Romania. The five drones (unmanned devices) will give the Alliance a platform for surveillance, intelligence and reconnaissance, otherwise exactly the kind of capability that proved crucial in the Libya campaign.

However, the U.S. administration has a problem in this respect, because it disagrees with the low level of defence spending and military relaxation in Europe. In order to reduce defence spending in the current global crisis, it is imperative that the U.S. administration convince European leaders to adopt a plan of military empowerment – structures, people, logistics, procurement.

North Atlantic project for smart defence is a multinational project, with shared responsibilities, doubled by cooperation projects such as joint air defence of Baltic states or Alliance Ground Surveillance (AGS) program that provides for the acquisition of five Global Hawk aircraft by NATO.

Individual projects such as precision munitions, mine defusing robots, maritime patrol aircraft, air armament centre, maintenance of mine-resistant armoured vehicles were

⁴Paul Ciocoiu, *Summitul NATO de la Chicago, cel mai mare din istoria Alianței*, available at <http://www.evz.ro/detalii/stiri/summitul-nato-de-la-chicago-cel-mai-mare-din-istoria-aliantei-prioritatile-de-pe-agenda-982292.html>, accessed on August 27, 2012.

⁵Luciana Pop, *NATO caută rețeta de supraviețuire*, available at <http://www.evz.ro/detalii/stiri/nato-cauta-reteta-de-supravietuire-982181.html>, accessed on August 27, 2012.

⁶Paul Ciocoiu, *Summitul NATO de la Chicago, cel mai mare din istoria Alianței*, available at <http://www.evz.ro/detalii/stiri/summitul-nato-de-la-chicago-cel-mai-mare-din-istoria-aliantei-prioritatile-de-pe-agenda-982292.html>, accessed on August 27, 2012.

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assigned to Denmark, Italy, Germany or the U.S., which will coordinate actions taken by the Alliance on these sectors.

An important issue for the Alliance that was not tackled at this summit was NATO enlargement. Although the summit did not address the expansion, analysts consider that NATO leaders must be extremely careful in future actions. Maintaining the enlargement project is necessary and reaffirming the potential adhesion to NATO of the four candidate countries – Georgia, Macedonia, Montenegro, Bosnia and Herzegovina – remains a goal. Securing the Balkans, especially in the current context, is also a challenge for NATO and its commitment to Europe.

3. USA's perspective on the Alliance in the new context

According to expert assessment, for 20 years, paying bills in the Alliance has been disproportionately distributed between the two sides of the Atlantic, the consistent effort, of about 75% today, belonging to the United States. Thus, an overdebted Washington hit by the economic crisis is not willing anymore to financially support the huge stowaway called Europe. In addition, another aspect that can not be neglected is the circulation of elites. On Capitol Hill, where it is decided how taxpayers' money is spent, there are emerging young legislators that do not have Euro-Atlantism in their blood. For many of them, "Atlanticism is no longer lived, it has to be learned"⁷. Meanwhile, politicians trained in the tradition of the Cold War, for which the contact with Europe via NATO axis represented their world, are becoming an endangered species. In this light, former secretary of state Robert Gates⁸ warned that future U.S. leaders might conclude that the benefits do not justify the costs of investment in NATO.

The new fiscal reality, complemented by the changing of elites and rebalancing of its priorities to the Pacific, forced Washington to rethink its policies depth towards Europe. Libya intervention was the first signal in this regard, the United States opting to "lead from behind". American participation was necessary, but not sufficient to ensure successful operation. It was Europe that has taken the leading position. This was the first time that the balance of forces in a NATO mission was decisively reversed between the two sides of the Atlantic. In this sense, Libya was the inverse of the operation in Kosovo: 75% of European air strikes were European, 90% of the aviation was European, pilots were Europeans, and European ammunition was launched. In reverse, in Kosovo, 90% of smart ammunition used was American.

USA's plan to transfer the most of its fleet in the Pacific

At present, China has control over the Panama Canal, owns all Greek ports, 90% of "rare earths" – minerals necessary for armaments industry and modern technologies. At the

⁷ Lord Robertson of Port Ellen, Robin Niblett, *Transatlantic Relations: A Case for Optimism*, 6 July 2011, available at <http://www.chathamhouse.org/sites/default/files/060711robertson.pdf>, accessed on August, 27 2012.

⁸ Kingston Reif, Emma Lecavalier, *Parting words: Gates and tactical nuclear weapons in Europe*, 14 July 2011, available at <http://www.thebulletin.org/web-edition/op-eds/parting-words-gates-and-tactical-nuclear-weapons-europe>, accessed on August 27, 2012.

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same time, China produces 80% of the components used by the U.S. Armed Forces. Moreover, China is the largest operator of natural mineral resources, has mines in Australia, USA, Middle East and Canada⁹.

In these circumstances, the United States has planned to transfer most of its naval fleet in the Pacific Ocean by November 2020 under its new military strategy focused on Asia. The announcement was made in May this year by the U.S. Secretary of Defence Leon Panetta, who, while in Singapore, said that the fleet movement from the Atlantic to the Pacific will take place before 2020, at the same time with the increase of collaboration with Vietnam and the Philippines¹⁰.

According to U.S. Secretary of Defence, the US Navy will reposition its forces from a proportion of about 50% - 50% at present, between Pacific and Atlantic at 60% - 40% for Pacific, including six carriers, as well as most of the ships and submarines. However, Asian experts wonder if Washington finds the money to meet the commitments made in the region.

The U.S. Navy has about 285 vessels, of which about half are conducted in Pacific. In turn, the Chinese navy increases rapidly, with warships and sophisticated missile systems. China announced this autumn the entry into service of its first aircraft carrier, in a context of strong territorial tensions with Japan, linked to several islands in the China Sea, in a conflict in which Taiwan intervened as well¹¹. However, Beijing seems determined to dominate the rich oil resources of the South China Sea, without taking into account the ambitions of Vietnam or the Philippines¹².

Although U.S. defence representative said that the relocation is not aimed at controlling China's military power, Beijing has suggested that it is not thrilled about strengthening U.S. presence in the Pacific.

In early January 2012, President Barack Obama presented the new U.S. military strategy, which equally aims a reduction of armed forces in the context of austerity measures, at the same time with the maintaining of America's military superiority in the world.

4. Russia's fear and reaction towards the USA antimissile shield in Romania

Launched in 2010, the missile shield project became one of the main contention issues between NATO and Russia, the latter considering it a threat to its security and urging security guarantees in writing that the system will not compromise its ability of

9 Adina Mutar, *Profilul Chinei in strategia Bilderberg*, Ziarul Național, 31.05.12, p. 7.

10 Luciana Pop, *Panetta: SUA își vor transfera cea mai mare parte a flotei în Pacific. Reacția Chinei*, Evenimentul zilei, available at <http://www.evz.ro/detalii/stiri/panetta-sua-isi-vor-transfera-cea-mai-mare-parte-a-flotei-in-pacific-reactia-984743.html>, accessed on August 27, 2012.

11 Online news, September 25, <http://www.hotnews.ro/stiri-international-13290766-video-primul-portavion-chinei-construit-coca-fabricata-urss-intrat-functiune-ziua-care-taiwanul-intervenit-criza-chino-japoneza.htm>, accessed on September 26, 2012.

12 Luciana Pop, *op.cit.*

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nuclear deterrence, but the Alliance refuses to give them, as it desires a strategic space of manoeuvre¹³.

The missile defence shield – which has just reached an interim operational capability – is under the sign of the following new logic: Poland, Romania, Turkey will host components of the “American Pillar” of the ballistic shield; other European countries will have a series of national contributions in the form of Patriot missile batteries and radars located on offshore platforms which essentially will form the backbone of the European pillar of the shield; NATO, as an organization, will provide the command and control infrastructure that will connect the two pillars in a whole.

Russia believes that the declared enemy for which NATO shield in Europe is being built, Iran, is just a cover for the real reason for the Allies. Iran has no missiles that necessitate such a shield and it has no technology to produce them in the near future, writes the Russian daily Pravda. Therefore, the objective remains getting close to strategic Russian areas.

The first two phases of the European defence system poses no threat to Russian missiles and submarines. However, the last two phases engender a risk for the Russians. What will Moscow do to eliminate the risk? The chief of the General Staff of the Russian Army, General Nikolai Makarov said in this respect: “Taking into account a missile-defence system’s destabilizing nature, that is, the creation of an illusion that a disarming strike can be launched with impunity, a decision on pre-emptive use of the attack weapons available will be made when the situation worsens”¹⁴ In plain words, if it considers it necessary, Russia will be ready to attack preventively the defence system in Europe, and, as U.S. is far overseas, Bulgaria and Romania will have to cope with that.¹⁵

With this purpose, in May this year, as announced by Russian spokesperson of the Defence Ministry, Vadim Koval, Russia successfully launched a new intercontinental missile, whose objective is to counter missile defence system, including missile shield developed by NATO¹⁶.

¹³ According to national press agency Agerpres, *Rusia se pregătește de contracararea scutului antirachetă: lansare, cu succes, a unei noi rachete intercontinentale*, May 23, 2012, available at <http://www.agerpres.ro/media/index.php/international/item/123689-Rusia-se-pregateste-de-contracararea-scutului-antiracheta-lansare-cu-succes-a-unei-noi-rachete-intercontinentale.html>, accessed on August, 27, 2012.

¹⁴ Andrew E. Kramer, *Russian General Makes Threat on Missile-Defense Sites*, May 3, 2012, available at http://www.nytimes.com/2012/05/04/world/europe/russian-general-threatens-pre-emptive-attacks-on-missile-defense-sites.html?_r=0, accessed on August 27, 2012.

¹⁵ Adina Mutar, *Rusii au testat „atacul preventiv” asupra scutului antiracheta al NATO*, National, May 23, 2012, available at <http://www.enational.ro/live/rusii-au-testat-%e2%80%9eatacul-preventiv-%e2%80%9d-asupra-scutului-antiracheta-al-nato-155879.html/>, accessed on August 27, 2012.

¹⁶ ***, *Rusia se pregătește de contracararea scutului antirachetă: lansare, cu succes, a unei noi rachete intercontinentale*, Agerpress national news agency, available at <http://www.agerpres.ro/media/index.php/international /item/ 123689- Rusia-se-pregateste-de-contracararea-scutului-antiracheta-lansare-cu-succes-a-unei-noi-rachete-intercontinentale.html>, accessed on August, 27, 2012.

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The tested device has achieved the target area of Kura polygon in Kamchatka peninsula located in the Russian Far East, near the Pacific Ocean; thus, the objective of this launch has been achieved¹⁷. The launch was carried out from a mobile platform in Plesetsk, northern Russia. This was the second missile test, after the failure of the first experiment on September 27, 2011. The first test was done with the first new Russian strategic missile, a ground-to-ground missile, an enhanced version of the Topol-M intercontinental missile with a range of over 10,000 km, which failed, the device falling shortly after takeoff. Several officials from the Russian military said the missile test was designed to counter NATO missile defence system in Europe, whose initial phase was declared operational in Chicago NATO summit.

5. Conclusions

The political uncertainty, which currently affects almost all major world economies, combined with economic unpredictability create a more uncertain context for the global markets. In this regard, changes in U.S., Europe and China have a direct impact on collective defence and global trends.

NATO countries have adopted in Chicago a comprehensive package allowing the Alliance to preserve an operational capacity adequate to the list of missions undertaken in its official documents. The program established under 'smart defence' concept requires conducting acquisitions and multinational investment in order to develop operational capabilities considered essential, but in a form of collective ownership. One of the projects engaged plans to create intelligent munitions multinational stocks; another project is about creating a multinational centre for training helicopter pilots. The principle is at the basis of NATO's strategic programs.

Unsurprisingly, the recent NATO Summit did not solve all problems. Among other things, Afghanistan is still far from the desired stability, and Russia, led again by President Putin will continue to be a difficult partner. NATO, especially European allies will have to find ways to balance expenditures within the Alliance. European allies cover only 21% of the Alliance's military spending, while Washington is increasingly expressing dissatisfaction in this regard. In time, this may reduce Washington's interest to ensure Europe's security.

The fundamental idea detached from the summit relating the nuclear status quo is that "as long as nuclear weapons exist, NATO will remain a nuclear alliance"¹⁸. In this respect, American officials stated that NATO is willing to reduce its number of nuclear missiles in Europe provided that Russia, whose stock is judged to be far more consistent, will do the same¹⁹.

¹⁷ According to Russian Ministry of defence spokesperson, Vadim Koval, quoted by Interfax news agency.

¹⁸ *NATO Strategic Concept*, p. 14, available at http://www.nato.int/strategic-concept/pdf/Strat_Concept_web_en.pdf, accessed at August 27, 2012.

¹⁹ Lucreția Berzintu, *Summitul speranțelor împlinite*, available at http://romaniadindiaspora.ning.com/profiles/blogs/summitul-speran-elor-mplinite?xg_source=activity; <http://www.europalibera.org/content/article/24589490.html>, accessed on August 27, 2012.

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After Chicago, we have a different NATO, an alliance that assumes political responsibilities as well, and the tendency of this organization is to become global, highly influential. Following this summit, NATO is stronger. Until now, it had two pillars that offered security: conventional forces (army, navy and air) and nuclear forces to deter threats; now, the third pillar was created: the missile defence system²⁰.

At least in the near future, it is difficult to believe that the European NATO members will significantly increase military spending, given the economic problems faced by many of these countries. Under these conditions, the development of joint projects in the 'smart defence' or EU 'pooling and sharing' initiative should be of particular interest for European leaders.

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²⁰ Declarațiile președintelui Traian Băsescu după Summitul NATO de la Chicago, <http://ghimpele.ro/prahova/declaratiile-presedintelui-traian-basescu-dupa-summit-ul-nato-de-la-chicago/>, accessed on August 27, 2012.

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**ASPECTS ON THE MODELLING AND SIMULATION OF
THE ROBO SECURITY MINI ROBOT MECHANICAL
STRUCTURE USED IN SPECIAL APPLICATIONS**

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Abstract:

In this paper, the authors wish to point at the means to integrate the software component for the modelling and simulation in a real-life environment of a mini robot mechanical structure with autonomous wheeled movement, a robotic structure used in military security applications. The “Robo Security” mini robot designed and built within the *Management and Technology* Research Center – the *Advanced Logistics Technologies* Laboratory within the “Nicolae Bălcescu” Land Forces Academy of Sibiu, can represent an additional element of a security structure, used for the relay and constructive jamming of a communication system. In order to demonstrate its usefulness, in terms of security features, the mini robot under study has in its structure a wire, which is controlled by an android system. The paper highlights the steps necessary for the 3D modelling and simulation of movement of the mechatronic system using several programming languages under several software such as: Microsoft Visual Studio 2010, by implementing libraries specific to programming within the OpenGL software using the C++ programming language as well as the MATLAB R2011b by using a peripheral device which captures the signal and transmits it to a special file in real time.

Key words: mobile robots, experimental models, computer programming, software, autonomous control.

1. Introduction

Today, although a high level of the reliability theory, efficient maintenance and availability in the field of practice can be observed, investigation and optimization face many problems, most of which are difficult or even impossible to solve in an efficient manner. Due to the conversion of this concept into a measurable parameter, reliability becomes a measure specified from the very definition of a product, this being mandatorily constantly monitored, controlled and analyzed throughout all the respective product's development stages. Thus it becomes one of the main characteristics that directs project managers since availability and reliability are crucial means by which the industrial society establishes its market reputation (Băjenescu 2003).

The success of a product in a competitive market that tends towards globalization depends on the designer's ability to integrate electronic and computing technology to the greatest possible extent with high mechanical procedures and processes. On the other hand, the performance of a current product, such as machines and robots, depend on the industry's ability to exploit technological developments and to implement them both in the design - research phase and in the production phase. The objective is to obtain cheaper, simpler, and easier to produce products, with a high degree of flexibility in comparison

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with previous products. Detrimental to market needs, we achieved an interdisciplinary approach to engineering design which is called Mechatronics (Badea 2011, Ispas 2004).

2. Programming the Mechatronic System Using MATLAB

The mini robot was designed to materialize the close relationship between the hardware and the software components, where the latter contains operating instructions and defines algorithms for the control of the system thus adjusting the processing module operation both to the environment and to the hardware component possibilities. Fundamental for the software module, it is focused mainly on microcontrollers and microprocessors.

In order to build the interface between the wire and the computer using MATLAB, a GUI application with multiple windows is used (Bidian, Pearsica 1997). MATLAB is a programming environment for developing mathematical applications, data analysis, numerical computation and design. The use of this program solves in a shorter amount of time technical computing problems as compared to the other programming languages, C or C++. In this context, with an especially designed application, Graphical User Interface, an interface that enables the user to easily handle and control, by means of buttons, interactive correlations between the windows. The first window introduces us to the system. The code written on seven lines is easy to manipulate and understand as it uses conditional functions adaptable to any programming languages, namely:

```
choices = menu('Robo Security Project ','Initiate Program','Description'); if choices==1  
initiation2 else description end,
```

hence this window provides us with two options: after running the editor, we can either be introduced into the program or be directed towards a short description of the system. By choosing button number two, we will go through the content of the next window, that describing the application. This window uses four code lines. The first code line describes what will be displayed, followed by what will be written on the windows button, back:

```
choices = menu('element additional to a security system, perspective must be  
developed','Back'); if choices==1 Spectrum end.
```

Through the only available option in this window, the name of the editor to be run is provided (in our case the *spectrum*), which means that we will return to the initial window. Given that the second option in this window has run, we are left with no choice but to choose the first option. For this, we will select the button suggestively called – *initiate program*.

At the moment of the selection, in the Command Window of the program, an imperative will appear that initiates the session of signal capturing by displaying the *start speaking* command. Concurrently, a new window appears and the content of the editing file corresponding to this window is run. When the time allotted to the recording ends, in the same Command Window, the *end of recording* imperative appears. This informs the user that the program no longer runs and displays a spectrum analysis of the captured signal's volume and time.

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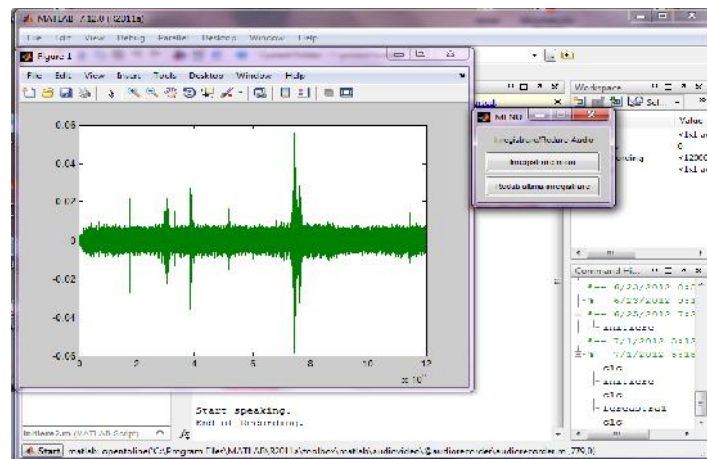


Fig. no.1 Spectrum analysis of volume and time of the captured signal

For this window the editing file has twelve code lines namely:

```
% Record your voice for n seconds. recObj = audiorecorder(40000, 16, 2); % frequency, nBits, nChannels; disp('Start speaking.') recordblocking(recObj, 30); %number of seconds; disp('End of Recording. '); % Play back the recording. play(recObj); % Store data in double-precision array. myRecording = getaudiodata(recObj); % Plot the waveform. (volume vs time) plot(myRecording); initiate2,
```

hence the first code line specifies the way the programming sequence is channelled. The following line defines a recording function with three parameters, frequency, number of bits and channels, respectively. The third line is the one using a display function in the *command window* of the first imperative, while the following line will establish the recording interval using the *recordblocking* function with its two parameters. The signal will be saved in the destined file so that it can be played and displayed in graphic form, as presented in Figure no. 1. The following option that appears in the window is the operation of saving the recording that can be played whenever needed by executing the following code:

```
% Play back the recording. play(recObj); initiate2,
```

this code sequence having three lines, the first representing a comment stating what the program is running, the following being a function with a parameter that runs the recording as such, while the last one sends you automatically back to the previous window.

3. The Simulation and Modelling of the Wheeled Mini Robot Using the Microsoft Visual Studio Software

The simulation of the application within which the *Robo Security* mini robot will be used was executed using Microsoft Visual Studio 2010, this being an integrated development environment composed of several programming languages. In order to build an application using Visual Studio, run the program and select *File* from the Menu Bar, then chose the *new* tab, and then select *project*, thus opening a new working window (Benoge, Mirza 2001). In this window the *empty project* tab must be selected and then the

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name desired for the application will be introduced. This is how the path of opening a new project is completed.

In order to be able to write in OpenGL it is necessary to include a series of DLL files and libraries, these being in default folders in order to be easily found upon program compiling (library examples: opengl32.lib, glaux.lib, glu32.lib, glut32.lib, glaux.h, glut.h etc.). If a new project is built, one of the files will be selected and on the right side the text editor associated to the respective file will appear.

This program supports the simulation and modelling application of the designed hardware device. The program draws and displays a wheeled mini robot that uses the associated commands received from a series of default keystrokes in order to be manipulated. In real terms, the device uses a similar, digital, menu designed especially for phones with embedded Android. The libraries required to run the program are also included, as well as declaring the functions and the global variables of the project:

```
#include "glos.h" #include <GL/glui.h> #include <GL/glaux.h> #include <windows.h>
#include <math.h> #include <stdlib.h> void init (); void CALLBACK display (void);
void reshape (int w, int h); void drawObject(); void centerOnScreen (); void keyboard
(unsigned char key, int x, int y); void idle(); GLUquadricObj* a; GLUquadricObj* b;
GLUquadricObj* c; GLUquadricObj* d; GLUquadricObj* e; int shortR=0;//flag
missile shortRange int longR=0;//flag missile shortRange float ahead = 0; int zoom = 0;
int angle_x = 0; int angle_y = 0; float vitx=0.02, vity=0.1;//speed shortRange float
vitlx=0.01, vitly=0.1;//speed longRange int ct; int window_width = 800; int
window_height = 800.
```

After this step, size is established and the window is initialized, background color is chosen as well as ambient light intensity, the diffuse component and light position:

```
void init() { glClearColor(1.0, 1.0, 1.0, 1.0); //settings for the light source GLfloat
light_ambient[] = { 0.0, 0.0, 0.0, 1.0 };//intensity //in the ambient component in the 0
source is null GLfloat light_diffuse[] = { 1.0, .0, 1.0, 1.0 };//intensity //in the diffuse
component in the 0 source is maximum for each component of //color GLfloat
light_specular[] = { 1.0, 1.0, 1.0, 1.0 };//intensity //of the specular component in the 0
source is maximum for each component of //color GLfloat light_position[] = {45, 0.0,
1.0, 0.0 }; //source of light in the x infinite axis GLfloat global_ambient[] = { 0.75, 0.75,
0.75, 1.0 }; glLightfv(GL_LIGHT0, GL_AMBIENT, light_ambient);
glLightfv(GL_LIGHT0, GL_DIFFUSE, light_diffuse); glLightfv(GL_LIGHT0,
GL_SPECULAR, light_specular); glLightfv(GL_LIGHT0, GL_POSITION,
light_position);

//Apply the light position glEnable(GL_LIGHTING);

//activate illumination glEnable(GL_LIGHT0); glEnable(GL_COLOR_MATERIAL)

glEnable(GL_TEXTURE_2D);// glEnable(GL_DEPTH_TEST); } void CALLBACK
myReshape(GLsizei w, GLsizei h) { if (!h) return; glViewport(0, 0, w, h);
glMatrixMode(GL_PROJECTION);

glLoadIdentity(); gluPerspective (30.0, (GLfloat) w/(GLfloat) h, 1.0, 20.0);
glMatrixMode(GL_MODELVIEW); glLoadIdentity(); }.
```


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myReshape function, which has two parameters, one setting the window width and the other setting height, is defined. This function updates the display matrix according to each of its volume variations display alterations:

```
void drawObject()
```

```
{ glPushMatrix(); glRotatef(angle_x,1,0,0); glRotatef(angle _y,0,1,0); glTranslatef(forward, 0, 0) }.
```

We proceed then to the actual drawing of the mini robot, and we accomplish that gradually, exploded, from trigonometric surfaces which are positioned in an assembly. Drawing each surface is performed by establishing the vertices with the three coordinates for each of the x, y and z axes. In order for the program to recognize which vertex (Fig.no. 2) is part of a selected surface, they will be defined in a structure that mentions the beginning and the end of the definition of each surface, also defining the surface that cannot be seen because of this perspective:

```
glBegin(GL_QUAD_STRIP); glVertex3f(-0.7, -0.5, -0.07);//v0 glVertex3f(0.5, -0.5, -0.75);//v1 glVertex3f(-0.7, -0.5, -0.07);//v2
```

```
glVertex3f(0.5, -0.5, -0.07);//v3 glVertex3f(-0.7, -0.3, -0.07);//v4 glVertex3f(0.5, -0.3, -0.07);//v5 glVertex3f(-0.7, -0.3, -0.75);//v6
```

```
glVertex3f(0.5, -0.3, -0.75);//v7 glEnd(); //for BlindTexture glBegin(GL_QUADS); glVertex3f(-0.7, -0.5, -0.75);//v0 glVertex3f(-0.7, -0.3, -0.75);//v6 glVertex3f(-0.7, -0.3, -0.07);//v4 glVertex3f(-0.7, -0.5, -0.07);//v2 glEnd();
```

After the step by step drawing of each trigonometric function in an assembly, we will model and build the mini robot under study. (Fig. no. 3).

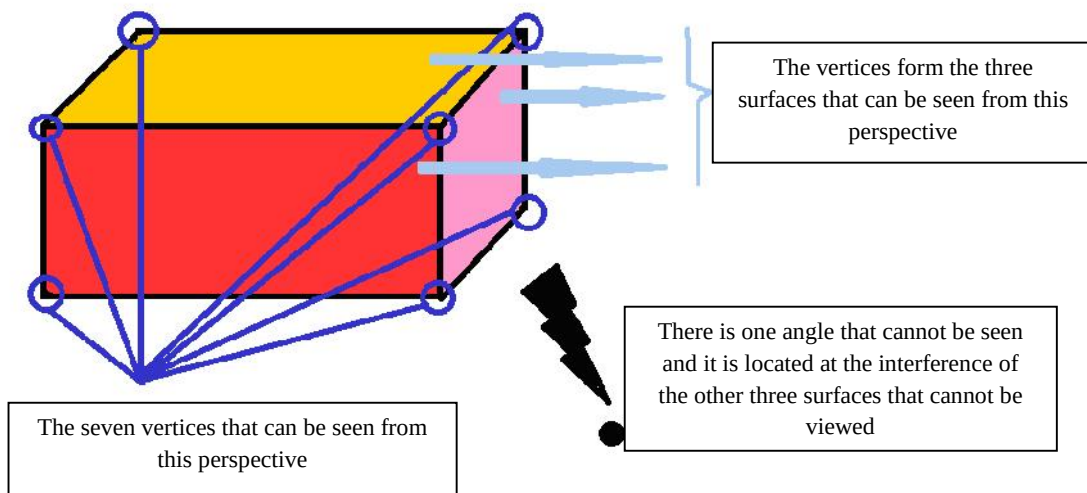


Fig. no.2 The Robo Security mini robot vertices

In the main class, a series of functions for the manipulation of the drawn object were established. The first two functions define what keyboard menu buttons perform, i.e. the up arrow zooms in the object whereas the down arrow zooms it

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out. The next two functions correspond to the right and left arrows which give the direction of movement. Then a series of keys were defined (A, S, D and W) in order to allow the rotation of the mini robot under study (when D is pressed the mechanical structure rotates clockwise along the y axis; when A is pressed the same movement is performed but counter clockwise). Additionally, vertical rotation was established along the x axis, by pressing the S and W keys. Because of the fact that the definition of these functions is not enough to achieve the objectives they were define for, in a *Main Menu* (Jamsa, Klander 2000), the connection between the button and the defined function is redefined. Below, the program performing the abovementioned functions is presented:

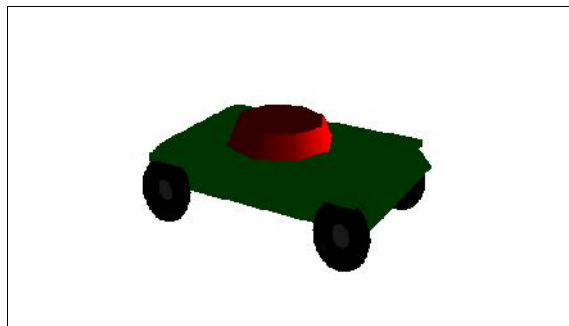


Fig.3 The View Window of the *Robo Security* mini robot modeling in OpenGL

```
void CALLBACK zoomPlus() { zoom += 1; } void CALLBACK zoomMinus() {  
zoom -= 1; } void CALLBACK forward() { forward += 0.2; } void CALLBACK  
backward() { forward -= 0.2; } void CALLBACK rotLeft() { angle_y -=15; }  
void CALLBACK rotRight() { angle_y +=15; } void CALLBACK rotUp() {  
angle_x +=15; } void CALLBACK rotDown() { unghi_x -=15; }.
```

```
int main(int argc, char** argv) { auxInitDisplayMode (AUX_SINGLE | AUX_RGB |  
AUX_DEPTH16); auxInitPosition (0, 0, 1024,600); auxInitWindowA ("Robo Security  
mini robot simulator ");
```

```
init(); auxReshapeFunc(myReshape); auxKeyFunc(AUX_UP, zoomPlus);
```

```
auxKeyFunc(AUX_DOWN, zoomMinus);
```

```
auxKeyFunc(AUX_RIGHT, forward);
```

```
auxKeyFunc(AUX_LEFT, backward);
```

```
auxKeyFunc(AUX_A, rotLeft);
```

```
auxKeyFunc(AUX_D, rotRight); auxKeyFunc(AUX_W, rotUp); auxKeyFunc(AUX_S,  
rotDown); auxKeyFunc(AUX_SPACE, shortRange); auxKeyFunc(AUX_RETURN,  
longRange); auxIdleFunc(Automove_Function); auxMainLoop(display); }.
```

In order to increase the object (the mini robot), the global variable is declared at the beginning of the program, which will then be used in the function, specifying its type (it is

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awarded an integer number value). Then the *zoomPlus* function is defined which will increment the global variable every time the established key is pressed. Then in *main* we perform the attribution of the function name to the respective established key, knowing that *zoomPlus* is the name of the previously defined function, while *AUX_UP* is the name associated to the up arrow key on the keyboard:

```
int zoom = 0;
```

```
void CALLBACK zoomPlus() { zoom += 1; } auxKeyFunc(AUX_UP, zoomPlus).
```

In case one wishes to use the number keys on the right side of the keyboard, *auxKeyFunc* will be replaced with *auxMouseFunc* and the fact that the second structure uses different parameters in a specific order should be considered. The same procedure is used for the rest of the keys.

3. Conclusion

In the unmanned ground means category, the autonomous wheeled mini robot, designed and built within the “Nicolae Bălcescu” Land Forces Academy Sibiu, has enabled the modelling and simulation of a means with strong scientific fundament and constitutes a pilot project that can be developed so that it can be used in various offensive and defensive operations. This project can be developed and dissimulated within interception and recording systems that can be extremely useful for structures dealing with data and information collection like HUMINT that work within operation theaters, but also for counterintelligence structures which work for force protection and to counteract terrorism, espionage, subversion, sabotage and organized crime missions (TESSOC).

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EVALUATION OF QUEUING DISCIPLINES OVER THE NETWORK PERFORMANCE

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Abstract:

This paper presents a simulation analysis of different queuing disciplines and how they affect the performance and the utilization of the network resources. Some of the common queuing disciplines, first in first out (FIFO), priority queuing (PQ), weighted fair queuing (WFQ) are implemented using OpNet Modeler. Finally, based on the practical results obtained we present the conclusions and the efficiency of the packet delivery for different network services when queuing disciplines are applied.

Key words: QoS, IP, Network, Opnet, FIFO, PQ, WFQ.

1.Introduction

In the Internet and intranets of today, bandwidth is an important subject. The amount of data that is being transmitted through the Internet is increasing exponentially. Multimedia applications, such as IP telephony and videoconferencing systems, need a lot more bandwidth than the applications that were used in the early years of the Internet [1]. While traditional Internet applications, such as www, Ftp, or Telnet, cannot tolerate packet loss but are less sensitive to variable delays, most real-time applications show just the opposite behavior, meaning they can compensate for a reasonable amount of packet loss but are usually very critical toward high variable delays [2]. A QoS can be described as a set of parameters that describe the quality (for example, bandwidth, buffer usage, priority, and CPU usage) of a specific stream of data. Quality of Service (QoS) refers to a set of service requirements to be met by the network while transporting a flow of traffic. The goal of QoS is to provide guarantees on the ability of a network to deliver predictable results of bandwidth, delay, jitter, and loss [3].

2.Queuing disciplines

In a store-and-forward network, routers maintain one or more queues for each output line. These are necessary as a packet may arrive and be destined for a line which is already busy. A queuing policy defines a set of rules for placing packets into the queue and taking them back out.

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2.1 First-in, first-out (FIFO)

The traditional policy is First-In, First-Out (FIFO), which is easy to implement and treats all data streams the same. Packets arriving from different flows are treated equally by placing them into the queue, respecting, strictly, their arriving order. Already in the queue they are dispatched in the same order they entered, this means, first packet that comes in is the first packet that goes out. Packets are transmitted from point to point without any guarantee for a special bandwidth or minimum time delay. With the best-effort traffic model, Internet requests are handled with the first come, first serve strategy. This means that all requests have the same priority and are handled one after the other. A packet which has newly arrived is placed at the end of the queue and waits its turn to be sent [1]. FIFO is the queuing discipline most used as default for routers. On Cisco routers, when no other queuing strategies are configured, all interfaces use FIFO queuing discipline by default. The traditional FIFO queuing in common Internet routers provides no service differentiation and can lead to network performance problems. Regular queues invariably employ the FIFO principle: The packet that has been waiting the longest is transmitted first. When the queue is full, and additional packets come in, tail drops happen.

2.2 Priority Queuing (PQ)

A priority queuing system is a combination of a set of queues and a scheduler that empties them in priority sequence [4]. When asked for a packet, the scheduler inspects the highest priority queue and, if there is data present, returns a packet from that queue. Failing that, it inspects the next highest priority queue, and so on. Priority Queuing (PQ) employs four separate queues: high, medium, normal (default) and low. By default each of these queues has 20, 40, 60 and 80 packets capacity. Traffic must be assigned to these queues, usually using access-lists. Packets from the High queue are always processed before packets from the Medium queue. Likewise, packets from the Medium queue are always processed before packets in the Normal queue, etc. The obvious advantage of PQ is that higher-priority traffic is always processed first [5].

2.3 Weighted Fair Queuing (WFQ)

WFQ tries to allocate bandwidth fairly to different conversations (typically TCP sessions) so high-bandwidth sessions don't get to monopolize the connection. WFQ is the default for lower-bandwidth interfaces. In a rate-based queuing system, such as Weighted Fair Queuing (WFQ) [4], the delay that a packet in any given queue will experience depends on the parameters and occupancy of its queue and the parameters and occupancy of the queues it is competing with. A queue whose traffic arrival rate is much less than the rate at which it lets traffic depart will tend to be empty and packets in it will experience nominal delays. A unique feature of this queuing discipline is moving of the real-time interactive traffic to the front of queues and fairly shares the remaining bandwidth among other flows [6]. ToS bits in the IP header is used to identify weight.

3. Simulated network topology

This paper has examined the behavior of different queuing disciplines and how they affect the performance and the utilization of the network resources. The application was realized in OPNET as in Figure 1 and the network consists in computers and servers, connected to router R1 and R2, which are connected using a link, with a speed rate of 44.736 Mbps. There are 4 workstations and 4 servers connected to routers using Ethernet 100BaseT link.

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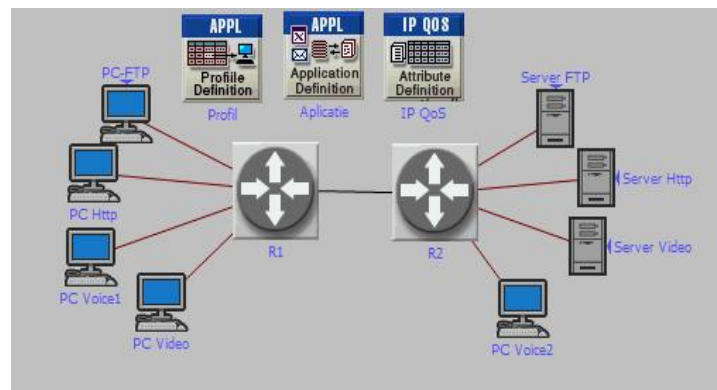


Fig.1 Network components

We set a high load for FTP application with file size (bytes) to a constant value of 1000000. The type of service is set to best effort (0). For Http application the time in seconds between page requests is set to an exponential value of 60 seconds. The start time for a page request is computed by adding the inter-arrival time to the time of the previous page request. We assign PCM quality speech for voice application with type of service set to interactive voice with a value number of 192. It represents a session attribute which allows packets to be processed faster in IP queues. The video application has a low resolution with a frame rate in frames/sec for the incoming and outgoing video streams set to a value of 10 frames/sec. The type of service is interactive multimedia with a value of 160. This is an integer between 0 - 252, 252 being the highest priority.

Profile definition is used to create users profiles to be specified in different nodes on the network. The start time (in seconds) defines when during the simulation the profile session will start, and is set to a constant value of 10 seconds. The operation mode is simultaneous, which means all the 4 profiles can start all at the same time during the simulation. For the queuing profiles, the default was used. For links between routers across the WAN we set the type of service profile to FIFO.

4. Simulation results

The simulation time is set for 3 minute data transfer between computers and servers, applying the three queuing disciplines. In figure 2 is shown the FTP traffic received by the PC from the FTP server.

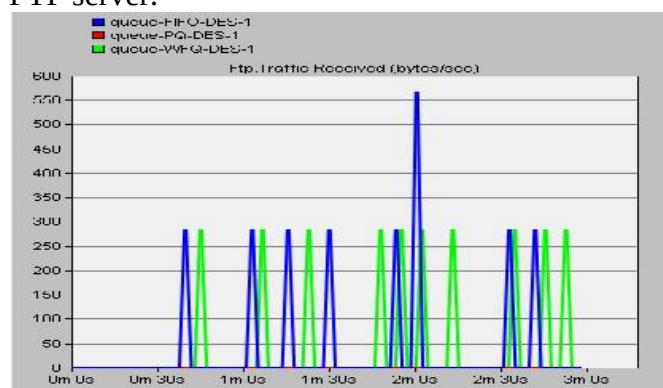


Fig.2 FTP traffic receive

When using priority queuing, the FTP traffic receive is zero, due to heavy congestion in the network or failures leading to exceed maximum TCP retransmission timeouts. Also, in the router R1 and R2, packets have been dropped for congestion reason cause by the

EVALUATION OF QUEUING DISCIPLINES OVER THE NETWORK PERFORMANCE

congestion attributes such as the maximum number of buffered packets or the queue sizes are too small. The IP traffic dropped is shown in the figure 3:

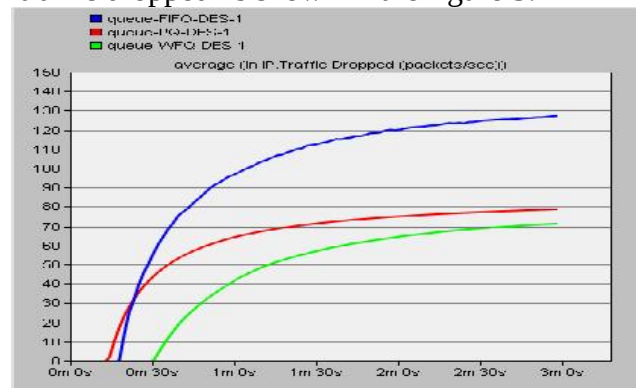


Fig. 3 IP traffic dropped

In figure 3 it can be observed that traffic dropped start around 15 seconds, while for WFQ traffic dropped is zero and by the end of simulation traffic dropped has a lower value.

Voice and video traffic received is shown in the figure 4:

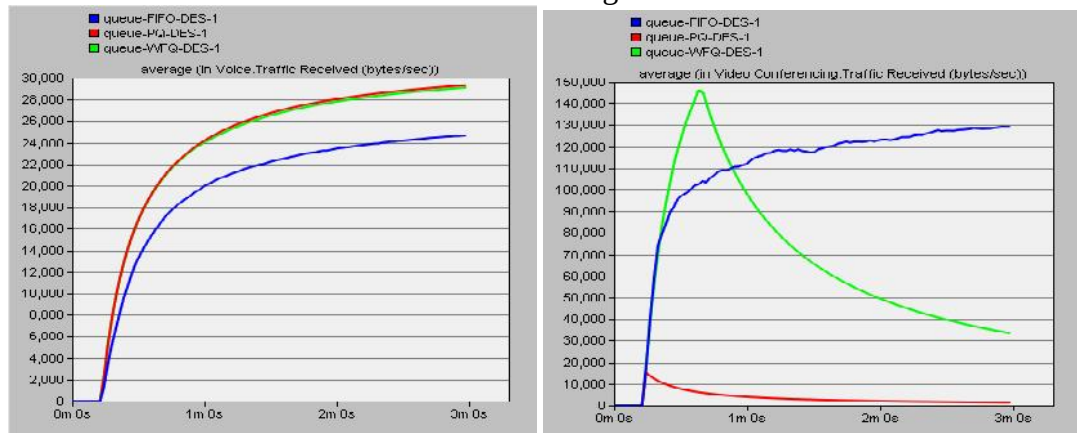


Fig.4 Voice and video traffic receive (bytes/second)

The performance graph line for FIFO is lowered compared to PQ and WFQ, (left side), but in case of video traffic received, the FIFO performance graph has a higher value. The queuing delay and utilization for the link between routers R1 and R2 is shown in figure 5. Queuing delay is a statistic that represents instantaneous measurements of packet waiting times in the transmitter channel's queue. Measurements are taken from the time a packet enters the transmitter channel queue to the time the last bit of the packet is transmitted. Link utilization represents the percentage of the consumption to date of an available channel bandwidth, where a value of 100.0 would indicate full usage.

EVALUATION OF QUEUING DISCIPLINES OVER THE NETWORK PERFORMANCE

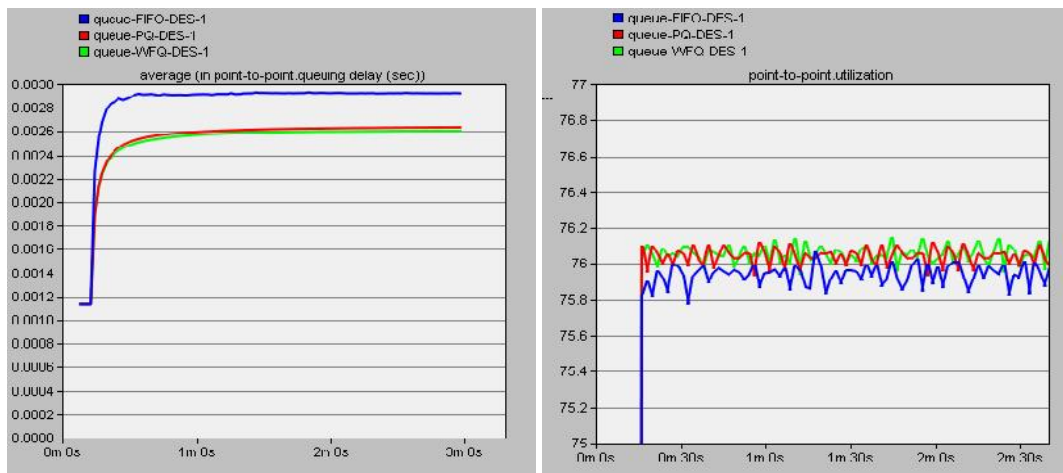


Fig.5 Queuing delay and utilization for R1 R2 link

5. Conclusions

Queues and queue-servicing algorithms are critical elements of traffic handling in providing network QoS. Queuing happens only when the interface is busy. As long as the interface is idle, packets will be transmitted without special treatment. Queuing disciplines roles is to achieve the required quality of service in today's network services. The loss of IP data packets in Priority queue and weighted fair queue discipline is less than FIFO queue. Priority queue has a relatively low overhead for software based routers. User traffic stream like voice, video, data can be easily transferred with its efficient level performance by using Weighted Fair Queue algorithm in routers where the voice, video and data streams are routed to go to their desired destination. The advantage of FIFO is the low computational load on software based routers, but the bursts traffic can consume the buffer and dominate the transmission. For WFO, network bandwidth is allocated to voice and data, network management becomes more complex comparing with the other two. In our days, there is a huge demand for the Internet applications, as the number of services keeps increasing. Each network should maintain a good Quality of Service to provide the best results to the users.

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AN ANALYSIS UPON PRESENT CONTACTLESS
SMART CARD TECHNOLOGIES

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Abstract:

In few years, the new electronic identity services will be introduced to the public in Romania. The system is based on the smart card where the identification information is stored. The goal of such a project will be to get an electronic identification (EID)-card for everyone, so the security of the cards will be an essential object of inspection. This paper is about electronic identity and smart card technologies focusing their emerging security problems. The main part of the paper is the descriptions of different attacks against the cards.

Key words: *IC – Integrated Circuit*
 EID – Electronic Identification
 ATM – Automated Teller Machine
 PIN – Personal Identification Number
 PKI – Public Key Infrastructure
 MSD – Magnetic Stripe Data
 EMV – Europay, MasterCard and Visa

1.Introduction

Firstly, a contactless smart card is any pocket-sized card with embedded integrated circuits (IC) that can process and store data, and communicate with a terminal via radio waves. When the old magnetic stripe cards could be used only as a static identification tool for specific operations (bank cards) or as a very small magnetic memory (telephone cards), the IC in a smart card makes it possible to use the card for much complex operations.

Secondly, is also characterized as follows:

- Dimensions are normally credit card size: $85.60 \times 53.98 \times 0.76$ mm;
- Contains a security system with tamper-resistant properties (e.g. a secure crypto processor, secure file system, human-readable features) and is capable of providing security services (e.g. confidentiality of information in the memory);
- Asset managed by way of a central administration system which interchanges information and configuration settings with the card through the security system;
- Card data is transferred via radio waves to the central administration system through card reading devices, such as ticket readers, ATMs etc.

2. Smart cards

2.1 Background

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Smart cards are slowly replacing the old-fashion magnetic stripe cards. The old cards have very limited memory and their information security is very limited. Most of the people had considered the old cards safe before that but nowadays their weaknesses are better known. Copying the magnetic stripe card is not an expensive action. That can't happen with IC cards because the card itself verifies the PIN code and the card can't be copied, at least not so fast and cheap as the magnetic stripe card.. Because an IC card actually includes a working computer, the contents of the memory can more easily be hidden.

Since first deployed for the Octopus card scheme in Hong Kong in 1997, smart cards with contactless interfaces have been increasingly popular for payment and ticketing applications such as mass transit. Globally, contactless fare collection is being employed for efficiencies in public transit. In more recent times, Visa and MasterCard have agreed to standards for general "open loop" payments on their networks, with millions of cards deployed in the USA, UK, France and globally. Smart cards are being introduced in personal identification and entitlement schemes at regional, national, and international levels. Citizen cards, drivers' licenses, and patient card schemes are becoming more prevalent.

2.2 Specification

There are two forms of the IC card, contact and contactless. The contactless card may have an own power supply as it is with the "Super Smart Cards" which have an integrated keyboard and LCD display. The operational power can also be supplied to the contactless card with an inductive loop.

2.3 Readers

Contactless smart card readers use radio waves to communicate with, and both read and write data on a smart card. When used for electronic payment, they are commonly located near PIN pads, cash registers and other places of payment. When the readers are used for public transit they are commonly located on fare boxes, ticket machines, turnstiles, and station platforms as a standalone unit. When used for security, readers are usually located to the side of an entry door.

3. Applications

3.1 Transportation

Since the Octopus card in 1997, numerous cities have moved to the use of a contactless smart card as the fare media in an automated fare collection system. In a number of cases these cards carry an electronic wallet as well as fare products, and can be used for low-value payments.

3.2 Contactless bank cards

Starting around 2005, a major application of the technology has been contactless payment credit and debit cards. Some major examples include:

ExpressPay - American Express

PayPass - MasterCard

Zip - Discover

payWave - Visa

Roll-outs started in 2005 in USA, and in 2006 in some parts of Europe (England) and Asia (Singapore). In USA, contactless (non PIN) transactions cover a payment range of ~\$5–\$100.

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In general there are two classes of contactless bank cards. Magnetic Stripe Data (MSD) and Contactless EMV (Europay, MasterCard and Visa).

Contactless MSD cards are similar to magnetic stripe cards in terms of the data they share across the contactless interface. They are only distributed in the USA. Payment occurs in a similar fashion to mag-stripe, without a PIN and often in off-line mode (depending on parameters of the terminal). The security level of such a transaction is better than a mag-stripe card, as the chip cryptographically generates a code which can be verified by the card issuer's systems.

Contactless EMV cards have two interfaces (contact and contactless) and work as a normal EMV card via their contact interface. The contactless interface provides similar data to a contact EMV transaction, but usually a subset of the capabilities (e.g. usually issuers will not allow balances to be increased via the contactless interface, instead requiring the card to be inserted into a device which uses the contact interface). EMV cards may carry an "offline balance" stored in their chip, similar to the electronic wallet or "purse" that users of transit smart cards are used to.

3.3 Identification

A quickly growing application is in digital identification cards. In this application, the cards are used for authentication of identity. The most common example is in conjunction with a PKI (Public Key Infrastructure). The smart card will store an encrypted digital certificate issued from the PKI along with any other relevant or needed information about the card holder. Examples include the U.S. Department of Defense (DoD) Common Access Card (CAC), and the use of various smart cards by many governments as identification cards for their citizens.

When combined with biometrics, smart cards can provide two or three factor authentication. Smart cards are not always a privacy-enhancing technology, for the subject carries possibly incriminating information about him all the time. By employing contactless smart cards, that can be read without having to remove the card from the wallet or even the garment it is in, one can add even more authentication value to the human carrier of the cards.

3.4 Other

The Malaysian government uses smart card technology in the identity cards carried by all Malaysian citizens and resident non-citizens. The personal information inside the smart card (called MyKad) can be read using special APDU (Application Protocol Data Unit) commands.

4. Common attacks on smart cards

4.1 Introduction for the attack classification

The smart card marketing people often claim that smart cards cannot be attacked successfully. But, nowadays, this is definitely not the case.

One method for classifying the possible attacks against smart cards is to categorize the attacks by the parties involved in the attack action [1]. The different parties in the smart card based system are the following:

The **cardholder** is the person who uses the card.

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The **data owner** is the party who has the control of the data in the card. As in case of the electronic ID card, the data owner is the person whose secret key is contained in the card.

The **terminal** is the device, which offers the interaction between the card and the outside world. As with EID card, this is the card reader and the computer attached to the reader with the screen and the keyboard.

The **card issuer** is the party who has issued the smart card. This party controls the operating system and the data in the card.

The **card manufacturer** is the party who produces the card itself.

The **software manufacturer** is the party that produces the software for the card.

The attack types described in the next sections are the ones that can be considered with EID cards. Attackers are considered as two different classes: those who are parties to the system and those who are outsiders.

4.2 Classifying the attackers

The possible attackers can be divided to following categories: [2]

Class I (clever outsiders). This type of attackers are often intelligent but their knowledge of the system may be insufficient. They may have access to only moderately sophisticated equipment. They seldom create weakness of the system by themselves but try to take advantage of an existing weakness.

Class II (knowledgeable insiders). They have some specialized technical education and experience. They may understand some parts of the system and have a potential access to most of it. They often have high quality tools and instruments for analysis.

Class III (funded organizations). They may assemble teams of skilled specialists and they also have great funding resources. They are able to perform some in-depth analysis of the system, design powerful attacks and use the most advanced analysis tools.

4.3 Attacks by the terminal against the cardholder or data owner

This attack class is also known as the *trusted terminal problem*. The cardholder must somehow trust to the terminal that the terminal does what the cardholder wants and only that. This is very important in EID system because of the digital signing service. If the cardholder wants to sign some data, he/she must have some confidence that the terminal doesn't sign anything else than just the wanted data. The above scam with the old magnetic stripe cards is the attack of this type. The terminal copied the card so that the cardholder didn't notice anything.

4.4 Attacks by the cardholder against the terminal

This type of attack is performed with fake or modified cards running some rogue software. The goal is to break the protocol between the card and the terminal.

4.5 Attacks by the cardholder against the data owner

With EID cards, this type of attacks are relevant only if the card has been stolen. The data owner should be the only one who knows the PIN code for the data (secret key) so the new cardholder tries to get or modify the data some other way. These following

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techniques have already used with great success against some pay-TV- and public telephone cards [2]. Also some early smart cards have been successfully hacked.

Tamper resistance must be considered more careful in smart card systems than in the old magnetic stripe card systems. The old systems had cryptographic systems in a secure place and the passcodes for the card were verified remotely from the card terminals. In smart card system, the card itself must be secured very carefully because the cryptographic keys are in the card itself and not in some safe deposit of the bank. The attacker can steal a card and take it to the private lab and examine it with care and time. When planning the tamperproofing, it's important to know the class of attackers we want the cards to be protected against.

The card may be vulnerable to the attacks, which try to operate the card in an environment, which is against the specifications of the card. For example, the card can be driven with unusual clock rate or voltage levels and this can cause some malfunctioning in the poorly secured card. This failure can cause an operating system crash or some output of secure data. These techniques are called **differential fault analysis**.

The attacker may also try a straight physical attack to the card like removing secure components or burning some parts of memory. The IC may not be so difficult to remove from the card than one might expect. The circuit in some of the cards can be successfully removed with some quite cheap home lab equipment so this type of attack could be performed even by class I attacker [2]. There is also some very sophisticated attack methods so tamperproofing is very essential process for smart card manufacturers.

Differential power analysis is quite new attack type, which has successfully used against certain smart cards. The power consumption of the card is measured and analyzed. If an attacker has some hint what the card might be doing when measuring the power consumption, the attacker can obtain a quite accurate picture of the internal behavior of the card. Multiplication, division and other arithmetic operations consume different amounts of power.

4.6 Attacks by the issuer against the cardholder

These types of attacks are typically some violations against the privacy of the cardholder. This is very important in the EID system because the issuer is able to generate the secret keys for the cardholder.

4.7 Attacks by the manufacturer against the data owner

When the data owner uses the card, how can he/she be sure what programs there are really running in the card?

For example, when verifying a pin code fails, how can we ensure that the card has actually tried to verify it?

Or what if the card accepts all the pin codes?

There are many possibilities for the manufacturer to attack against the data owner and these attacks would obviously be very harmful.

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5. Security problems in smart card based EID system

5.1 General securing issues

When planning the tamper proofing the card and other security issues it's important to classify the possible attackers against our system. EID system must obviously be protected against class II and even the class III attackers whereas for example in a case of PayTV-cards it could be enough if we just secure them against class I attackers.

Terminal and card reader security can be improved by setting some limitations for the allowed transactions and other user actions. For example, we could allow the user to sign only certain types of data. Also some time limits like actions per minute or maximum time for the terminal to access the card can be set. When the users will have their own card readers and software at home, it's very difficult to be sure that everybody has trusted security modules. Because of that, the most secure attack prevention mechanisms are those which have nothing to do with the interface between the card and the terminal. They monitor the terminals operations and log all the suspicious behavior in the information net.

The manufacturer of the card must be trusted organization, which has well known products. Also the organization, which has the responsibility for initializing the keys the card, must be known to be very reliable. The system, which creates the key pair, must secure itself that the secret key cannot be revealed. The organization, which personalizes the cards, must have a very high-class quality assurance. It must also have a clear way to administer the other important information for activating the card. The register organization must also be reliable and it must have a secure way to identify a person when issuing and registering his/her EID card.

The users themselves must understand their own responsibilities in the EID system and they must also have enough skill to use it. The authority, which offers some EID-related services, must ensure that the services work the way they are supposed to and that the secure information is certified and it can not be changed when delivered. The same authority must also be able to put time stamps for the data it handles. Also the help desk and blocking list services must be secure and some limited number of staff must be authorized to administer them and identify the users.

6. Conclusions

Electronic identification will come as a part of every-day life of all citizens. With that card, several public services can be reached from the Internet and other remote terminals. Internet is not safe by default so we must use strong public-key cryptography and other methods to improve the network security.

We specified smart card as a plastic card, which has an integrated circuit included. Attacks against smart cards can be classified by categorizing them by the parties involved in the attack action. Attackers can be categorized based on their skills and available funding resources and tools. EID Smart card system must be secured against the most powerful attackers. We must tamperproof the cards and also secure the card readers and computers, which they attac

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EUROPEAN ARMAMENTS CO-OPERATION STRATEGY

Călin AVRAM

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Abstract:

The European Defence Agency (EDA) works in a policy area traditionally characterised by high diversity among actors regarding basic notions of what level of integration and which principles of interaction in the defence sector are appropriate for the EU, which countries should participate in defence cooperation, and what coordination mechanisms and instruments should be used.

Key words: security, defence, policy, states, governments, cooperation, armaments.

1.Introduction

The European Defence Agency was established under a Joint Action of the Council of Ministers on 12 July, 2004, "to support the Member States and the Council in their effort to improve European defence capabilities in the field of crisis management and to sustain the European Security and Defence Policy as it stands now and develops in the future". The European Defence Agency (EDA) works in a policy area traditionally characterised by high diversity among actors regarding basic notions of what level of integration and which principles of interaction in the defence sector are appropriate for the EU, which countries should participate in defence cooperation, and what coordination mechanisms and instruments should be used.

2.Background to the European Armaments Cooperation

Armaments cooperation in Europe has a long tradition, the first cooperative programmes being launched in the 1960s, and their number increased considerably over the following decades. Because of the reductions of defence budgets, the increased complexity of military systems, their spiralling costs, and the requirement for increased interoperability within alliances, States more and more resort to collaborative procurement for their defence equipment. In a collaborative defence procurement programme, participating States agree to procure and manage together the development and/or production of a complex military system and/or its support. Procuring collaboratively is expected to have cost benefits during the development and the production phase of the system, operational benefits because of interoperability and standardisation of equipment across the participating States, industrial benefits such as technology transfers, and political benefits by helping the participating States foster mutual understanding. However, the most important factor encouraging collaborative procurement is the inability of most European States to procure complex

EUROPEAN ARMAMENTS CO-OPERATION STRATEGY

military equipment otherwise than either by buying it from the United States or by sharing its costs with other States.

Projects such as Transall, Tornado, HOT, Milan and Eurofighter – to name only a few – have illustrated both the political will and the technological capability to develop high-tech weapon systems jointly. However, this armaments cooperation was not entirely a success story due to some very specific factors:

- it has been limited mainly to aerospace and defence electronics, whereas land armaments and naval shipbuilding have remained by and large nationally focused
- armaments cooperation has traditionally been organised on a purely intergovernmental, ad hoc basis, which has implied complex institutional and industrial arrangements, leading to delays and cost overruns
- these programme-specific arrangements have not changed the fundamental weakness of Europe's armaments sector, market fragmentation, which results in costly and unnecessary duplication.

All this has put European countries under pressure to develop a more ambitious and systematic approach towards armaments cooperation, the latest twenty years showing a multitude of multinational initiatives at different levels and with varying memberships, leading to an extremely complex institutional landscape. The Western European Armament Group (WEAG), Western European Armament Organisation (WEAO), the Organisation for Joint Armaments Cooperation (OCCAR) and the Letter of Intent (LoI) are the most important multinational initiatives established during this period.

Even these initiatives seems innovative and promising, they have been developed outside the EU-framework. In general, the results have not been satisfying, the market fragmentation and duplications persisted, and the institutional setting remained a patchwork. In some areas competences overlapped, whereas others were not covered at all. The various initiatives were not coordinated, and there was no overall strategy, because a coherent armaments policy was missing.

3. European Defence Agency

In 2004, the Council of the EU created a European Defence Agency (EDA) to support the EU Member States in their effort to improve the EU defence capabilities in the field of crisis management and to sustain the development of the European Security and Defence Policy (ESDP). The European Defence Agency, within the overall mission set out in the Joint Action, is ascribed four functions, covering:

- developing defence capabilities
- promoting Defence Research and Technology (R&T)
- promoting armaments co-operation
- creating a competitive European Defence Equipment Market and strengthening the European Defence, Technological and Industrial Base (EDTIB)

These four functions form the chain for capability development, from defining requirements via research and armaments cooperation to industrial supply. This integrated approach will contribute to coherent capability development, where demand and supply are optimally connected in order to save time and costs for governments. More collaboration will, in turn, provide opportunities for industrial restructuring and progress towards the continental-scale demand and market, which industry needs.

EUROPEAN ARMAMENTS CO-OPERATION STRATEGY

The Agency conducts its activities within a strategic framework. It consists of four strategies, endorsed by EDA Steering Board.

- **The Capability Development Plan (CDP)** provides to Member States an auditable picture and assessment of capability trends and requirements, over the short, medium and long term, in order to inform national decisions on defence investments; this includes the identification of areas for cooperation for capability improvement, and the proposal concerning options for collective solutions. The CDP is the overall strategic tool, the 'driver' for R&T investment, for armaments cooperation and for the defence industries.

- **The European Defence Research & Technology (EDRT)** strategy aims at enhancing more effective R&T in support of military capabilities. The EDRT strategy defines the 'Ends' (in which key technologies to invest), the 'Means' (how to do this) and the 'Ways' to implement the ends and means through roadmaps and action plans.

- **The European Armaments Cooperation (EAC)** strategy is focused on promoting and enhancing more effective European armaments co-operation in support of CSDP capability needs. The EAC strategy defines how to improve the effectiveness and efficiency of European armaments programmes by a series of actions, applying lessons learned from past experiences through a 'Guide to Armaments Co-operation Best Practice'.

- **The European Defence Technological and Industrial Base (EDTIB)** strategy describes the future European defence industrial landscape, based on the three C's: Capability-driven, Competent and Competitive. The future EDTIB has to be more integrated, less duplicative and more interdependent, with increased specialisation, for example by establishing industrial centers of excellence. It refers to action fields for which Governments will be responsible, such as consolidating demand and investment. Logically, the strategy links the work on realising the future EDTIB to the Agency's activities on the European Defence Equipment Market. Special attention is paid to the importance of Small- and Medium-sized Enterprises with their typical flexibility and capacity to innovate.

These strategies provide for the destinations of EDA's activities in the four functional areas and for the course to be followed. But they don't produce capabilities by themselves. These have to be generated through concrete projects and activities.

4. European Armaments Co-Operation Strategy

The participating Member States (pMS') have developed sophisticated methods to identify their capability needs. They took account of their membership of the EU and other organisations and from these derived their political and military ambitions. One of the natural sources for identifying capability needs is through the EDA's Capability Development Plan (CDP), although it is recognised that not all needs will be fulfilled through co-operative programmes. A European policy approach to armaments was needed that links the future European capabilities needs with the future EDTIB and investment therein. In 15 October 2008 the European Armaments Co-operation Strategy (EAC) was approved by the Agency's Steering Board, having the following strategic aims:

- 1 - Generate, promote and facilitate cooperative programmes to meet capability needs**

- 2 - Ensure the EDTIB and investment therein is capability orientated and supports future co-operative programmes**

EUROPEAN ARMAMENTS CO-OPERATION STRATEGY

3- Improve the effectiveness and the efficiency of European armaments cooperation

One of the core messages in the Strategy is that Europe must seek to maximise opportunities in armaments co-operation and ensure that the option to co-operate is already considered in defence planning. This should not exclusively be for seeking co-operative development opportunities but also with a view to the potential advantages of co-operation on in-service support or upgrading existing assets as well as for other lines of capability development.

As a prerequisite for effective European armaments co-operation, the strategy focuses on the need for a solid European Defence Technological and Industrial Base (EDTIB) by drawing on attributes of the EDTIB Strategy. Conversely, effective co-operation on armaments programmes fosters the environment in which the EDTIB can be strengthened and can provide competitive products for European industry. Therefore, there is a need to provide greater transparency and mutual understanding between governments and industries to help ensure the EDTIB remains coherent alongside future European capability needs.

Identified capability needs are described in the Common Staff Target (CST). The CST is the main input for a Preparation Phase. The Preparation Phase is the initial phase of a co-operative armament programme or an activity to sustain an existing capability. It corresponds to the input of stakeholders working together on requirement consolidation and project management, with the aim to connect a harmonized link to capability requirement with the armaments and industrial arrangements necessary to deliver the resulting co-operative programme.

The Common Staff Requirements (CSR) translate the CST into military requirements across all Capability Areas, including the effect on all Lines of Development, measures of effectiveness, as well as numbers, costs, key programme dates and the acquisition strategy. Technology push and dual use issues will be taken into account, the overall risks to the programme assessed and mitigating actions taken or planned.

The CSR expresses the requirements with solutions in mind, and therefore technological, economic and industrial issues must also be considered, especially for the larger cooperative programmes where the stakeholder interaction and influence is complex. This process of generating the CSR is iterative and its content will reflect inputs from the contributing Members and other stakeholders participating in its production. During this process users' requirements should be harmonized and the consequences of unique requirements should be addressed.

Overall, implementation of the EAC Strategy will have a broad effect on defence procurement and acquisition in Europe and help to realise more effective military capability for the CSDP. A major step in translating the many facets of the Strategy into tangible action is the development of an "EDA Guide to the Conduct of a Programme Preparation Phase". This Guide provides the participating Member States and other stakeholders with a framework in which to prepare a cooperative programme, work together on common outputs and develop the necessary evidence to support their decisions regarding the next phases of the programme.

The Guide describes the necessary steps for the consolidation of capability requirements which have been outlined in the Common Staff Target (CST) during the requirement identification phase. The preparation phase starts with a Steering Board decision comprising a group of contributing Members declaring their intention to carry

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out a Preparation Phase and produce a Business Case (including the Common Staff Requirements (CSR) and Through Life Management Plan (TLMP)). The Business Case is to provide sufficiently compelling reasons for the contributing Members to take decisions, initiate further activities and commence negotiations for the following phases, prior to any formal commitment. It is the key decision document resulting from the Preparation Phase and covers the significant items that will affect a decision to proceed with a co-operative programme.

During the Preparation Phase within the EDA, a prospective programme is prepared in terms of an outline scope, time, cost, acquisition organisation and participation. A through-life approach is taken by considering the impact of the subsequent phases (definition, development, production, in service and disposal) and addressing the identified programme risks and opportunities as early as possible. However, each programme can be tailored to a subset of the above mentioned five phases which may influence the scope of interest for the TLM. Therefore all possible stakeholders responsible for the different programme phases have to harmonize from the beginning their approach to TLM.

5. Specific actions derived from the European Armaments Co-Operation Strategy

Armaments acquisition has many facets and it demands many actions from the pMS and the EDA to bring about more effective European armaments co-operation, as described in the European Armaments Co-operation Strategy. The following actions have been derived against each of the strategic aims.

Strategic Aim 1 - Generate, promote and facilitate cooperative programmes to meet capability needs, through:

- using the results and priorities defined by the CDP and pMS capability initiatives as the foundation upon which short-to-long term capability development activity within ESDP should be undertaken.
- EDA, in consultation with the pMS, to produce and maintain a 'Guide to the Conduct of a Programme Preparation Phase' that includes methods and tools to be applied and identifies the roles of stakeholders, the outputs and the decision points of the pMS both nationally and collectively.
- EDA to facilitate and support the harmonisation of Common Staff Targets (CST) and Common Staff Requirements (CSR) and encourage the pMS to inform others of their requirements early so that opportunities for co-operation can be optimised.
- Identifying innovative solutions to co-operation, notably by utilising 'dual use' technologies applicable to the military and security sectors.
- Constructing defence equipment or procurement plans on the premise that co-operation is considered as a potential solution, so that we are receptive to co-operation at the earliest opportunity.
- Opportunities to co-operate (throughout the acquisition life-cycle and for the harmonisation of capability needs) are shared amongst the pMS through the CDP Database and the co-operative option is considered in all acquisition decisions, so that no opportunities to co operate are missed.

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- The EDA analyse the pMS' intentions to upgrade existing major assets, and draw to the attention of like-minded pMS the possibilities for joint support solutions and user clubs and promoting them as appropriate.
- Consider all lines of development in order to maximise co-operation and interoperability.

Strategic Aim 2 - Ensure the EDTIB and investment therein is capability oriented and supports future co-operative programmes, through:

- Exchanging appropriate information between governments and industries on long term European capability planning and industrial long-term investment planning.
- Ensuring the key European industrial capacities is preserved or developed.
- Improving the assuredness in European security of supply and security of information as established in the EDTIB Strategy.
- Seeking a rational and more flexible approach to industrial participation that improves the efficiency and effectiveness of co-operative projects and allows industry to find the most efficient solution to support consolidated requirements.
- Enlarging the contribution of small and medium sized enterprises.
- Transparency and compatibility of procurement policies and practices, including budgetary planning and cycles, so that we may improve the way we do our business.

Strategic Aim 3 - Improve the effectiveness/efficiency of European armaments co-operation, as follows:

- EDA to develop with the pMS and other stakeholders an outline of how the EDA should interface with relevant executive agencies and service providers in the circumstance of the management of co-operative programmes.
- common understanding of the policies and processes applying to co-operative programmes developed where required through education, training and practical experience
- in developing publicity and providing briefings to explain the benefits of co-operation particularly to those national staffs involved in the initiation of programmes.
- in developing best practice defence materiel standardisation management.
- EDA to produce, maintain and promote a living 'Guide to Armaments Co-operation Best Practice,' developed in consultation with the pMS to tackle the breadth and diversity of co-operative programmes. This would include but not be limited to the above and:
 - Outline reasons to co-operate and the advantages of doing so;
 - Models for the efficient conduct of joint off-the-shelf purchases;
 - Procedures for applying through-life management and life cycle costing to aid decision making;
 - Best practice standardisation management;
 - European quality guidelines;
 - General Arrangement, that also draws upon a set of standard contractual conditions, which could be used as the basis for co-operative armaments programmes;

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- To support and promote risks management methods in relationship with European standardization bodies.
- A guide to co-operation in sub-systems and components;
- Improving security of supply and security of information;
- To promote functional and value analysis within the framework of the programme preparation phases;
- Innovative approaches to financing programmes;
- Analysis of lessons learned from ongoing co-operative programmes and share acquisition process best practice amongst pMS;
- Actions to optimise costs and time-schedules for co-operative armaments Programmes.

6. Conclusions

It has been argued that, within the EU, only the EDA could facilitate the development of the common vision necessary to increase the efficiency of collaborative procurement. Some have even argued that the complete management of the collaborative procurement process (including logistic support) should be delegated to the EDA, and that the EDA intergovernmental defence procurement regime should be extended to apply to collaborative procurement. It is certain in any case that the EDA has a key role to play in improving the efficiency of collaborative defence procurement in the EU.

The European Armaments Cooperation Strategy is a good step in the right direction. Its contents are strikingly coherent with the areas where collaborative procurement in Europe should be improved. If adequately implemented, the strategy would help streamline the pre-contract award phase of collaborative programmes, during which much of the delays and cost increases are created, and move away from *juste retour* and towards more cost-effectiveness whilst helping to provide the European armed forces with the equipment they need.

The strategy also shows that a European preference will likely be given for procurement in some strategic sectors still to be defined. It is probable that the definition of such sectors will lead to fierce battles among participating Member States.

Unfortunately, some of the actions identified in the strategy are phrased more as declarations of intent than as actual actions. It is unclear who has to perform some of them, how and by when. Even though their intent is worthwhile, they sometimes lack the concreteness required to get things moving. It seems that the participating Member States, whilst recognising the need for such actions, are sometimes reluctant to commit themselves to actually taking the necessary steps to bring them to completion.

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MULTINATIONAL APPROACHES IN MILITARY
ACQUISITIONS

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Abstract:

Political and military decision makers are trying to influence the future global security in a positive way. In the effort to tackle the new challenge, among other actions, EU launched the initiative for *pooling and sharing* while in NATO *Smart Defence* is at the heart of this new approach. Political environment has to strive to make *Smart Defence* successful. Is it possible to have the top priorities for NATO as the top priorities for each nation? Implementation of the *Smart Defence* concept is an opportunity for the revitalization of the defence industry particularly in EU.

1. Introduction

“Gentlemen, We Have Run Out Of Money; Now We Have to Think”

W. Churchill

Present times bring a political, social and security environment inconceivable at the end of WW II. This was possible due to unexpected developments in some fields: technology, demography or natural resources. The trends of the mentioned aspects and others interrelated with them put the future in the area of unpredictability. Therefore, what can be done? Should we remain in the reactive posture or should we try to have a proactive one? Being proactive is not an easy task anyway, but shaping, to some extent, the future is reasonable. The sum of all actions in this direction will affect finally the security environment that is the most important for contemporary and future society. Thus, political and military decision makers are trying to influence global security in a positive way.

In line with the unforeseen developments, already depicted, Europe has to cope with the extended economic crisis. The immediate reaction was to reduce the defence budgets.

Stockholm International Peace Research Institute provides data showing the defense spending in Europe increased by 4.1 %, during the 1st decade of present century, main contributors being UK and France, while in the most other European countries the spending was decreasing or stagnating. Conversely, China increased defence budget by 189 percent, Russia by 82 percent, the United States by 81 percent and India by 54 percent.¹ In 2011, for the first time, Asia spent more than Europe on defense.

Former U.S. Secretary of Defense Robert Gates warned on the risk of the “demilitarization” of Europe because an increasing number of nations cannot provide appropriate forces to NATO (or EU) operations.

¹ All data from SIPRI Military Expenditure Database 2011, <http://milexdata.sipri.org>.

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In the effort to tackle the new challenge among other actions (severe reductions in forces and equipment, restructuring of the armed forces), the initiative: *pooling and sharing* was launched. To emphasize the importance given by EU to this initiative I inserted the text below.

European cooperation on pooling and sharing of military capabilities represents a common response to European capability shortfalls, aiming at enhancing operational effectiveness in a context of financial austerity and a changing strategic environment.

In this context the Council welcomes the significant progress on concrete cooperative initiatives facilitated by the European Defence Agency (EDA) such as on Air-to-Air Refuelling, Medical Support, Training (Counter-IED, Helicopter Training Programme, Air Transport Crew, Fast Jet and Naval) and Maritime Surveillance.[1]

At the same time NATO was forced to take similar measures. The concept launched in the field of capabilities is *Smart Defence*.

Smart Defence is at the heart of this new approach. [...] technology grows more expensive, and defence budgets are under pressure, there are key capabilities which many Allies can only obtain if they work together to develop and acquire them. We therefore welcome the decisions of Allies to take forward specific multinational projects, including for better protection of our forces, better surveillance and better training. [2]

The declaration stipulates achievements and developments in the context of *Smart Defence* such as: interim ballistic missile defence capability as an initial step to establish NATO's missile defence system, Alliance Ground Surveillance system, air policing mission in the Baltic states, a new, leaner and more effective command structure, extended NATO's air command and control system and others.

Table 1 gives a synthetic image of the trans-atlantic cooperation on capabilities.

NATO Strategic Concept	Functional Category	Industrial relevance	TADIC relevance	New Element in NATO?
		(High-Medium-Low)		Yes/No
Collective Defence	TBMD	H	H	Y
	CBRN WMD	H	H	N
	Cyber	H	H	Y
	Anti-Terrorism	H	H	N
	Energy security	H	L	Y
	Emerging technology assessment	H	H	N
Crisis management	Civil-military approach	M	L	Y
	Monitor and analyse the international environment	H	H	N
	Enhance intelligence sharing	H	H	N
Cooperative Security	EU	H	H	Y
	Russia	H	M	Y
Reform and transformation	Reorganisation of NATO – Agencies	H	H	Y

Table1 (Involvement Trans-Atlantic Cooperation in the Lisbon Capabilities Package)[3]

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Burden sharing is a challenging endeavor in all multinational enterprises, but capabilities sharing are even more complex. This approach raises a number of concerns both military and non-military. Thus these concerns approached below should be addressed when dealing with *pooling and sharing* or *Smart Defence*.

2. Non-military concerns

2.1 Political environment has to strive to make *Smart Defence* successful from the national perspective, but mainly in a concerted action, to bring it at the expected level in order to provide required capabilities for the alliance.

Sovereignty concerns are difficult to be addressed within legal-cultural context. Although sovereignty seems to be bounded with the in border aspects, for the time being it is equally important abroad, especially within contemporary security environment; for instance, to protect economical interests. At the same level of importance, but on the pragmatic side, there are the *budgetary allocations*.

Beyond these areas, not new when dealing with military acquisitions, the *perspective* and the *comprehensive approach* are important because the political decision makers have the means to streamline the processes among military, economic and research and development organizations to meet the necessary coherence for a *Smart Defence*.

One of the main benefits of the new concept is the *economy of scale*. This is a well known economical concept that is not working only for the acquisition phase, but also for the lifecycle expenditures.

An additional aspect related with political domain is to align, the allied *level of ambition* with individual nations ones. The challenging part is to correlate them and multinational approaches on capabilities.

2.2 Economy is a crucial part of the system, having the *industry* as a main vector. Defence industry has the major task to balance among *profit*, *enduring existence* and the *protection* of corporate sensitive information.

Taking into account the tough competition for markets, it is a major endeavor for the defence industry to find the appropriate ways for long term cooperation, particularly under *Smart Defence* umbrella. Coherent and coordinated actions should be taken, mostly for the European defence industry, at least to maintain the position on the market.

Although, the governments are using all means to preserve national capabilities in the defence industry, providing a relative safety for the companies, a deep analyze and appropriate actions are necessary for the whole European specific industry, based on current developments and the decreasing European military budgets. The main directions will be toward limitation of intra-European competition and duplication of effort, then focusing on the developments in complementary areas within European space and Northern American industry as well.

2.3 Technology becomes a key factor in all aspects of human life, having a particular magnitude when discussing about military capabilities. In this case it is decisive in terms of efficiency and effectiveness. Preserving technological advance provides an important advantage in modern conflicts but it could be even more important if is shared among allies.

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Some of the characteristics of the modern warfare, accurate information, mobility, precision strike can make the difference only using state of the art technologies. But it is tremendously cheaper to diminish this gap in the era of hybrid conflict than to maintain or increase it. Therefore, it is the alliance duty to find the means to lead the technological field in an efficient way, making it available at a different scale, even through multinational capabilities.

2.4 Research and development has its essential contribution for a praised *Smart Defence*. What makes it special? This is the field that is dealing only with future. It is responsible to find not only what, but largely, how, offering viable solutions for future capabilities. These activities are expensive and, is difficult to determine their efficiency in short term. Thus, the simplest way to reduce the cost is to avoid duplication of effort, directing important resources to other areas according well justified priorities. There are a lot of initiatives in this direction between NATO and EU, for instance. It is still a lot to do from national perspective if the industry is put into discussion.

3. Military concerns

3.1 Defence Planning is the main process in the development of capabilities. A main issue arises from the different systems that are used by the alliance and by the nations, being difficult to evaluate the *effectiveness* in this case.

Furthermore, discussing about planning of multinational capabilities how can we deal with *prioritization*. Is it possible to have the top priorities for NATO as the top priorities for each nation?

Considering *perspective* as vital factor in planning the situation becomes even worse when managing medium term or long term planning, making almost impossible to keep the focus.

3.2 Capabilities are the aim of the processes depicted above and, to be more specific the effects obtained using them. The demanding modern battlefield and the shifting role of the forces in operations impose versatility as a requirement. Consequently a particular effect can be obtained using various capabilities. But *uncoordinated development of capabilities* may lead to some unfilled gaps in terms of effects.

Due to the changes in current operations the weight of the attack capabilities is downsizing. Conversely those capabilities required for protection have an increasing trend, raising the question: who is responsible for which capabilities?

Moving to multinational owned capabilities, to manage a growing number, can become an issue. In the same context – to which extent *modernizations* are affordable for all contributors?

3.3 Specialization is another vector of *Smart Defence*. This is not a new concept in NATO or in operations. It is normally used in current operations for the same reason that brought it as a decisive factor for *Smart Defence*, cost efficiency. But the dimension makes the difference. Whilst during operations it is considered only for that particular case, when we are talking in the context of the new NATO concept it is expected that a number of nations will be specialized on a number of capabilities for a non determined period of time.

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Under present severe circumstances, for small countries will be a great challenge. They will be forced to “bet” a significant amount of the resources on those capabilities. For those that cannot be provided they should rely only on the allies. This approach will conduct to deployed capabilities to cover the permanent gaps. This means to choose wisely the specialization for each country, keeping an eye on the complete pool of capabilities.

Moreover should be established which of these capabilities will be multinational and which only national.

Actually, the process of specialization, better said “despecialization” has been started in NATO, but in an erratic way, through dismantling capabilities in an uncoordinated fashion.

Besides the aspects mentioned above specialization may have a critical impact if a “specialized nation” don’t want to take part in a specific operation.

3.4 Operations are the ultimate confirmation for the effectiveness of military capabilities.

Sovereignty issues or particular interest of the contributor countries to multinational capabilities may lead to avoidance of involvement in operations with the crews.

On the other hand these types of capabilities are an important way to solve, even partially, one of the main issues: *interoperability*.

Modern conflict brings new challenges for operations planners, mainly in counterinsurgency in urban environment. Hence, the weight of kinetic missions was downsized in favor of non-kinetic missions. This doesn’t lead to the development of new capabilities, but to the different use of those from inventories. In this case *multinational training capabilities* may be used. Otherwise they will be difficult to be maintained by a unique nation for a decreasing number of specialized personnel.

3.5 Exchange of information is critical for the military field. Although is often used information sharing, for the purpose of this paper is better used the other term that shows a bidirectional flow. Capabilities developed multinationally contribute to an increased exchange of information among the nations, at least about best practices.

There should be treated carefully the aspects related sensitive information.

3.6 Operating and maintenance can be linked with two principal positive aspects, already brought into debate – *economy of scale* and *interoperability*.

Weak points may be connected with provider of maintenance, for instance, or the suppliers, or externalization of some services. Can this be treated in a different way for operations?

3.7 Logistic footprint is one of the major concerns for the current operations. Complexity of military equipment, both combat and support, diverse spectrum of missions, battle rhythm, operations in austere or remote environments, increased force protection and other factors contribute to the unpredictable escalation of the required logistic support. If some of the areas, mainly non military, can be covered through specialization or externalization, all the others should be provided by contributing nations. This means huge expenses and difficult management. Multinational capabilities are part of the solution.

3.8 Personnel are another part of the system. It becomes more and more difficult to provide the necessary qualified personnel due two significant reasons: *number of military*

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specializations and the duration and complexity of the education and training. Of course these can lead us to the financial resources, being perfectly justified. But this is only a part of the problem. Sometimes the entire structure of the personnel in the armed forces is not in line with the developments in fields like, operating and maintenance, operations, training and so on. In this case time is the critical factor. *Smart Defence* can be an answer allowing the covering of the deficits from a larger pool of personnel.

3.9 Education and training could be a good reason for the implementation of specialization. This approach doesn't affect the national capabilities and can be both efficient and effective. The resources (funds, equipment, trainers, etc.) will be managed centralized. Speaking about effectiveness, this approach allows the use of the best equipment, trainers or procedures. It provides a better visibility of the process from allied perspective.

4. Conclusions

4.1 Political spectrum should be determined, coherent, and acting in synergy, using all legal means available to move *Smart Defence* from the conceptual side into the pragmatic side for the benefit of the alliance and countries.

4.2 Comprehensive approach meaning, political, military, industry, R&D and any other stakeholders should find a common understanding of the concept, and contribute in a coordinated manner, avoiding useless competition.

4.3 Curtailment of the budgets and consequently the number of military capabilities is not a reason but a part of the current environment with a heavy impact on security, thus any initiative to balance the situation should be taken seriously into account.

4.4 Implementation of the *Smart Defence* concept is an opportunity for the revitalization of the defence industry particularly in EU.

4.5 Perspective for the long term commitments should be kept as a first priority in defence planning, having multinational capabilities with an increasing role within this process.

4.6 NATO, EU and national Defence Planning Systems should be adapted to ensure correlation and coordination in order to overcome the facilitator role of NATO.

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Motivation – theories

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Abstract:

This paper briefly characterizes the most well known theories regarding motivation and proposes an incipient new model.

Key words: tower, have, be, know, selfish, want to .

1.Introduction

Despite all the theories, to motivate employees remains so far an ideal for most of managers and this because of the lack in consistency of it. This happens because every theory starts from another point of view, an interesting and real one, but there is the need to integrate them and directs them to concrete and enlarge applications.

This work is an attempt to expose apart of them, especially the most known, in order to see if is possible to glimpse a very beginning of such one.

2.Theories

It is not enough that the purpose of an activity to be clear and right in order to reach efficiency and effectiveness. Experience demonstrates that motivation has a huge importance, thus without it or when it exceed, the results are compromised. It was establish that the motivation must be at an optimum.

But what is motivation?

Motivation - eagerness and willingness to do something without needing to be told or forced to do it;

Motivation – set of forces that cause people to behave in a certain way;

Motivation – the sum of the motives regarding to a particular people. The motive being a psychical structure which deals with orientation, initiation and regulation of the actions toward a goal.

According these definitions were developed different theories, which I try to astonish in the next table.

Theories:

Type	Examples
Behavioral theories	Reinforcement, Social information processing
Cognitive theories	Intrinsic motivation, Cognitive evaluation, Goal setting
Equity theories	References ,Choices if inequity , Inequitable pay , Justice, Rewards

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Type	Examples
Expectancy	VIE (expectancy, instrumentality, valence)
Need theories	Needs(McClelland), hierarchy of needs(Moslow),ERG (existence, relatedness, growth)

Table 1 Types of theories and examples

2.1 Behavioral theories

Reinforcement theory studies relation between exterior stimuli, especial reward and punishment, and behavior observed after the stimulus was applied. This theory can be applied to maximize results mainly by rewards, punishments been necessary and utile just in rare cases. B. F. Skinner observe that a stimulus determine behavior and results are consequences of behavior.

When rewards, which include incentives, promotions, job security, and many other things, are tied directly to performance, they serve as positive reinforcement. Increasing rewards work well when people are learning new jobs, new skills but with some limitations, thus they believe can perform better by making an effort and they will receive rewards for performing better, in addition the rewards must be liked.

Punishment, on the other hand, by presenting to the people things with unpleasant consequences, if they fail to behave in a desired manner, can cause responses as anger, resentment, hostility, or retaliation.

Social information processing takes in to consideration social cues consisting in adopting attitudes and behaviors from examples, like colleagues or impressionable, like new starlets. This can be observed especially to the young generation which grows with undesirable consequences sometimes.

We can conclude that this kind of theories deals with extrinsic motivation.

2.2 Cognitive theories

Motivation is studied from the flow experience, intrinsic motivation, cognitive evaluation and goal setting perspective.

Flow experience implies desire to repeat experience, if exists, concentration, and needs some characteristics as high skill levels, challenging and creativity and totally intrinsic motivations.

Intrinsic motivation comes from rewards inherent to a task or activity itself - the enjoyment of a puzzle or the love of playing. Intrinsic motivation has been explained by Fritz Heider's attribution theory, Bandura's work on self-efficacy, and Ryan and Deci's cognitive evaluation theory (which concludes that increasing extrinsic motivation reduces intrinsic satisfaction).

Goal setting studies relations between self efficacy, feed back, the importance of participation and the way of reaching the goal, meaning individual or in a team.

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2.3 Equity theories

The *equity theory* focuses on persons' beliefs about correctness and equal treatment applied to them in comparison to others from the same team, especially, or other people doing the same thing from different teams or organizations. J. Stacy Adams discovered that there is equity when individual's income equal to the income of others in the same conditions. People judge equity by comparing inputs (level of education, experience, effort, and ability) to outputs (wages, salary, recognition, bonuses, and promotion). When the ratio is unbalanced, inequity exists and, as consequences, individuals will reduce the activity by doing the following: *Change inputs* (increasing or reducing effort), *Change outcomes* (strikes for better salaries) or *Leave the job*.

2.4 Expectancy theory

Victor Vroom studied three chain relationships between effort-performance, performance-reward and reward-personal goal and obtained that are motivated to act toward rewards that they want and that they believe they have a reasonable chance to obtain. The preference for an output is called valence. To find this, individuals evaluate if they can reach the goal, the importance of it to them, and what course of action can be done. A person's expectation of finally achieving the goal is very important to success. This theory is useful to understand the motivation of individuals' from different cultures; their background may give each one a unique set of needs and unique perceptions of how to achieve them.

In conclusion, according to this theory Motivation equals valence plus instrumentality plus expectancy.

2.5 Need theories

Are the most known because needs are at the basis of motivation and knowing them permit setting a policy in order to fulfill those needs and conduct behavior.

Hierarchy of Needs Abraham Maslow proposed that individuals have a number of different needs that they attempt to satisfy in their activity. He presumed that unsatisfied needs motivate and once a need is satisfied another takes its place in the prim-plan of attention, so humans are "wanting beings". Needs are divided into externally, which have lower order (physiological and safety) and internally, which have higher order (social, esteem, self-actualization).

- *Physiological*: These are necessary for survival: food, drink, shelter, sleep. Work satisfies these needs offering a safe, comfortable designed work environment with enough salary compensation.
- *Security/safety*: People need stability, structure, order and protection from unknown.
- *Social*: People need affection, friendship and companionship. This need is satisfied by participation in teams with good relationships.
- *Esteem*: These include the need for recognition and status. People also desire self-respect and need a good self image.
- *Self-actualization*: These are human needs used to attain self-fulfillment. Individuals satisfy this need by being creative or accepting challenging jobs.

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He structured needs as in the following figure:

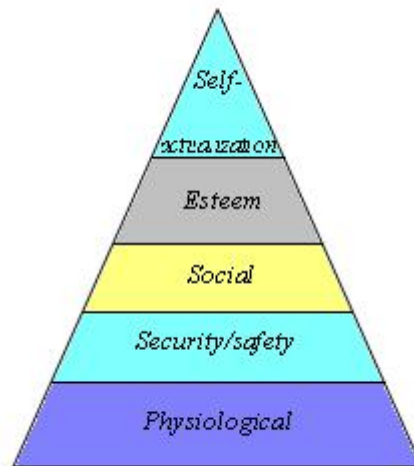


Figure 1 Hierarchy of needs

These needs are arranged in a hierarchy of importance, meaning the higher the level in the pyramid, the fewer the number of individuals who have met those needs.

ERG Theory ERG comes from existence, relatedness and growth which are core needs in this theory. Existence needs are in fact physiological and safety, relatedness needs means relations with others and growth needs refers to personal development. The real contribution of Clayton Alderfer consists in revealing the mechanism of satisfying needs: if a superior need can't be satisfied then would appear frustration, followed by regression to the lower level and at the end by intensification of the need.

2.6 My perspective

Definition:

Motivation – an internal process (meaning psychological) which occurs when exterior and interior stimulus are applied related to a goal and compared to the personal needs.

Starting from this definition I will shape my ideas which I would call my perspective.

I think the key to start the unification process is with an important actor, namely the individual. Maslow touched very well upon this aspect giving us the pyramid of needs, others the same but at different levels, more or less philosophical ones. Which are the critics against Maslow's theory? One is that, sometimes, some layers of the pyramid are inversed, depending on an individual. Something is happening here, there is another process acting, but the pyramid remains standing.

From my perspective I can imagine the process dealing with motivation, thus I will represent it as a tower, a "selfish tower".

I presume that the decision-related activity of a person considers three verbs especially "to have", "to be" and "to know". These three can be arranged like in Figure 3 obtaining a tower.

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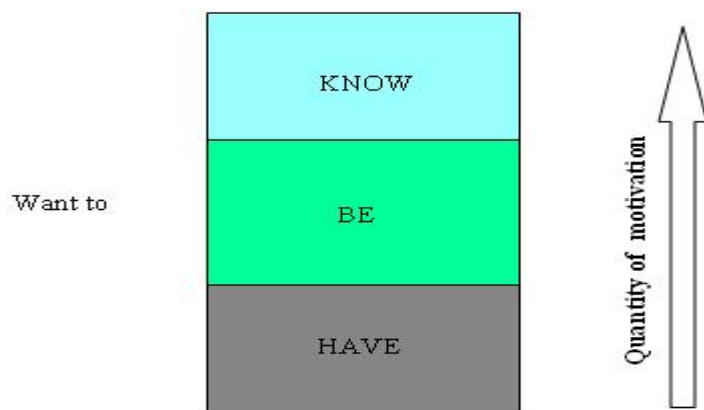


Figure 3 The selfish tower

This tower represents in fact desires, so if we assign “substance“ to one of this three verbs we will find personal goals.

Example: “X wants to have property”

So “property” is a personal goal for him, and so on.

But how this tower appears? It derives from the needs (pyramid of needs for example) under external (social) influences. The process can be imagined like this: when a specific task is assigned to an individual, that person builds instantly the tower looking with an eye at the needs (which exists independently of people’s will) and with the other one, at the results (what if the goal is reached). The building process stops depending on the individual’s analysis process (at “have” level or superior), but once it is finished and the person takes the decision, he or she jumps from that level in real life, and this represents behavior.

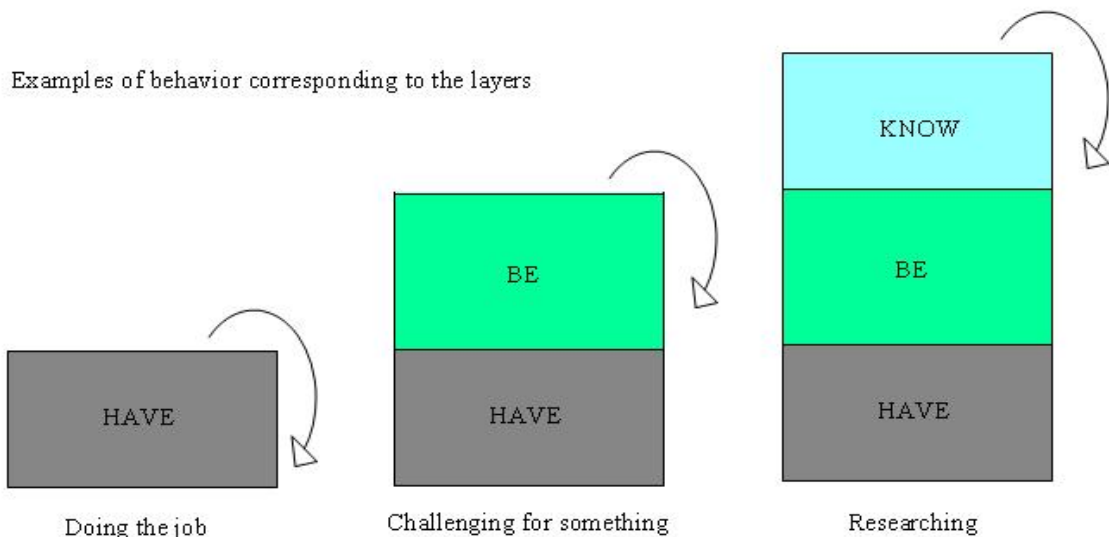


Figure 4 Behaviors depending of the level reached

According to Figure 4, “Have” level implies low motivation, “Be” level more motivation and “Know” level the highest quantity of motivation. In order to obtain a high level of motivation, first, the task must be well explained, and consequences, too, in

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addition, looking from the person's point of view, the task should be associated at least with "Be" level.

Let's examine again the example I gave above: "X wants to have property" it could be someone who can argue that if the property is big, and X is poor, and there is a real chance to reach this goal the quantity of motivation is higher than the "Have" level. It is true but, in this case the person climbs into the next level, namely "Be" level, meaning "He wants to be rich".

Considering "don't want" situation, the tower is inversed, like in figure 5:

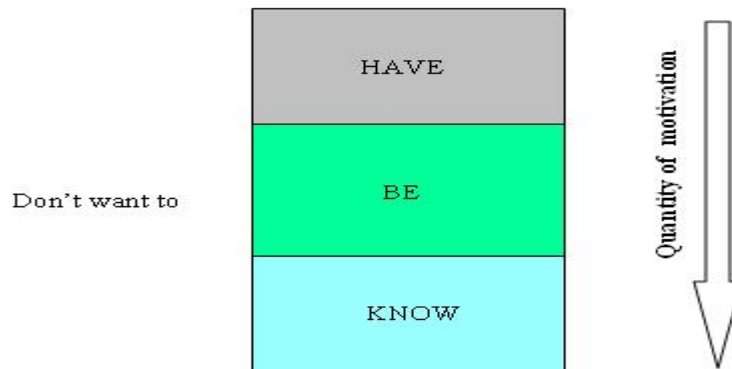


Figure 5 Inversed tower

Heretofore I try if this model can work, probably yes, from now let's see if this model has relations with the theories above.

Just two arguments and a figure:

- It can be seen that the model is between intrinsic (needs) and extrinsic (task and goal) factors so it unifies them.

- Considering "two factor theories" "Have" level and half of "Be" level correspond with Hygiene factors, and the rest correspond with Motivators.

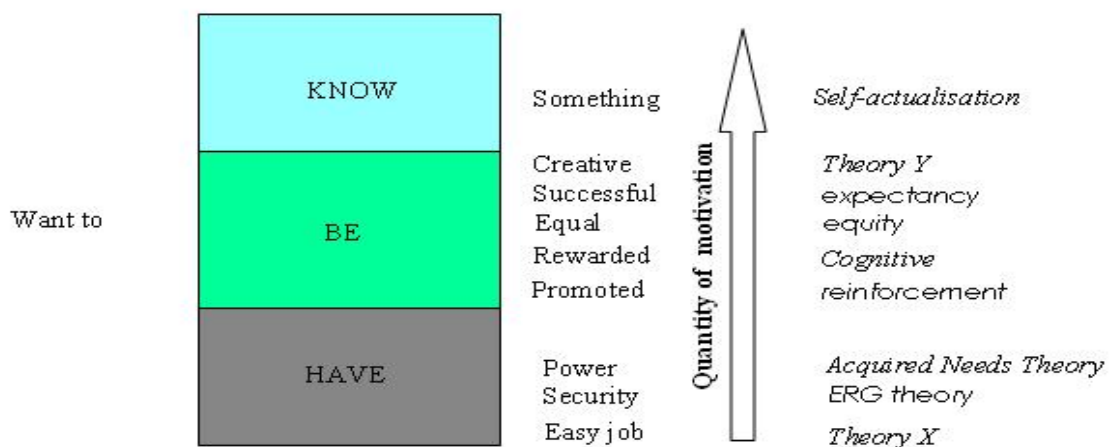


Figure 6 Possible relations with Motivation theories

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According to the Figure 6, if an individual decides that *He wants to Know*, related to a specific task, it is obvious that his responses were “yes”, in a way or another, for the two levels below and he reached the highest level of motivation. I insist that this *He wants to know* refers to accomplishing that specific task in a good way, not just to see what happened if he reaches the goal.

3. Conclusion

All the theories are extremely interesting. Moreover, all of them were validated by research, but there are still large spaces to develop and unify in a way motivational theories. The last model tries to capture what is in an individual's mind when a new task is assigned to him, the respective person being at the centre of the theory.

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**The 7th International Scientific Conference
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ITIL&FCAPS - NETWORK MANAGEMENT FUNDAMENTALS

Barbu Gheorghe

Air Forces

Abstract:

This paper briefly brings together the basics of two network management frameworks. The reader will understand that there are a lot of models used in network modeling and management processes, but only two of these all are essential in simplifying network representation, managing, preparing for the future and developing. Network management fundamentals frameworks as ITIL and FCAPS are the keys of success in these areas.

Key words: FCAPS, ITIL, Network management framework, information technology

1. Overview

Anecdotal evidence suggests that an operator's ability to manage a network decreases as the network becomes more complex. However, there is currently no way to systematically quantify how complex a network's design is nor how complexity may impact network management activities.

Network management is a large and complex topic. In nowadays diverse networking infrastructure, the network concept has to handle more instances of unified communications, video, and virtualization.

The role of the network management process includes not only monitoring for performance and security, but also anticipating and estimating future network problems and transcending technology to ensure everything runs well together, whether it's the network, the server, or the application.

Network management means different things to different people. As example, for the Chief Information Officer of an organization it would mean being able to ensure that the enterprise IT infrastructure (consisting of departments, locations and services) is performing optimally. On the other side, from the point of view of the network administrator, network management is defined as a set of activities where a variety of tools, applications, rules and devices are utilized by IT personnel to monitor and maintain information technology networks. To the network manager it would mean managing the details that constitute this high-level view.

As a general view, in the simplest terms, network management translates into managing fault and performance across applications, servers and networks.

2. Issues

In order to make an analysis with a more accuracy of what network management means, we need to find answers at the next questions:

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2.1. What are the needs to be monitored?

First, we need to define the scope of the needs to be monitored and managed when we are dealing with networked applications.

Secondly, in order to provide satisfactory performance levels, we must be able to identify an array of problems that can have their source in the applications themselves, in the servers on which the applications run, or in the network. In the network, devices, applications, connections and configuration can all have an impact on the end-user service experience.

Finally, we have to determine how to resolve these problems. So, for assessing monitoring and management needs at a minimum level, we must plan to monitor:

2.1.1. End-user experience

We need to know whether there are response time problems before end users call the help desk or service desk to complain. We need to know whether a business application or service could fail or slow dramatically, threatening business revenues or institution image.

2.1.2. Servers at both ends and the devices in the network

We need to know if everything is configured correctly. Are servers performing correctly? Do performance level trends indicate an emerging problem? Is anything near a saturation point?

2.1.3. Traffic through the network

We need to identify which applications are consuming the most resources. Is the routing appropriate? Are there bottlenecks and when and why these could appear? Are some resources (hardware or software) over- or underutilized?

2.2. Which monitoring tools do we have?

Once we understand what we need to monitor, we can move to inventory and assess which tools and application resources we have available to do that task today. Then, to determine what data and information is currently collected. This information can provide insight into what is happening in the operational environment and how it will affect business service delivery and performance commitments. Knowing which tools and data we already have available that will allow determining the additional resources that we need in order to perform the overall management task.

3. Solutions

Nevertheless, we still have not achieved the expected results and in addition there are two frameworks which can use for understanding and taming network management: **FCAPS** and **ITIL**.

3.1. FCAPS

FCAPS (fault-management, configuration, accounting, performance, and security) is actually a network management device also called the ISO Telecommunications Management Network. It is an acronym for a categorical model of the working objectives of network management, part of the OSI Network Management model. This model helps the network and system administrators to understand the major functions of network management systems and to provide knowledge to understand and surpass different issues in order to protect its environment. Without it, many system downtimes would occur and the organization may suffer a large financial or/and image loss.

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This framework includes five levels:

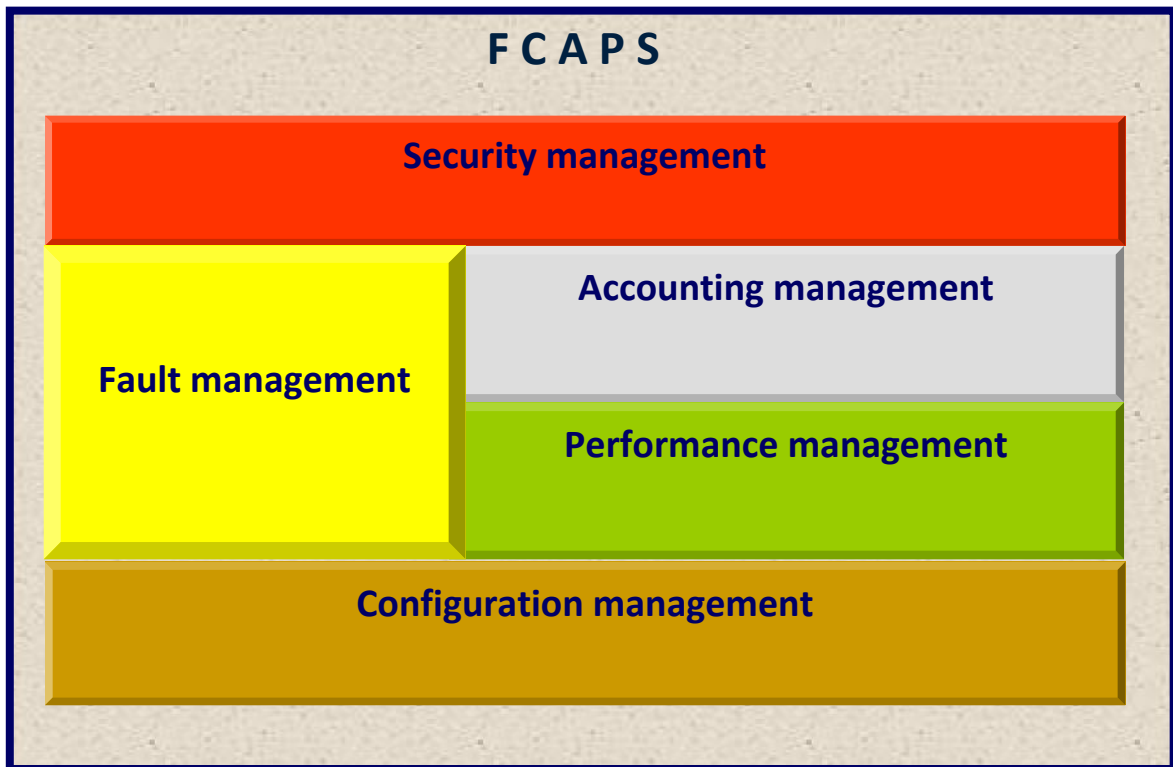


Fig. 1 FCAPS model levels

3.1.1. Level F—Fault management

At the F level, network problems are found and corrected. Potential future problems are identified, and steps are taken to prevent them from occurring or recurring. In this way, the network is kept operational, and downtime is minimized.

In Fault Management level, the aim is to recognize, isolate, correct, and log faults on the network. As a system and network administrator, it is your duty to put in right place efficient monitoring tools so you are alerted to when faults exist. For example, you want to be alerted when something (e.g. a critical service) goes down on the network. If there is a fault, you have to test, fix, update, and repair any faults that occur on the network.

A common fault management technique is to implement an SNMP-based network management system - such as HP Open View or Sun Solstice (formerly Net Manager) - to collect information about network devices.

3.1.2. Level C—Configuration management

At this level, network operations are monitored and controlled. Hardware and programming changes, including the addition of new equipment and programs, modification of existing systems, and removal of obsolete systems and programs, are coordinated. An inventory of equipment and programs is kept and updated regularly.

While it is possible to track these changes manually, a more common approach is to gather this information using configuration management software, such as Cisco Works 2000.

3.1.3. Level A—Accounting (allocation) management

The A level is for distributing resources optimally and fairly among network subscribers. This makes the most effective use of the systems available, minimizing the

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cost of operation. This level is also responsible for ensuring that users are billed appropriately.

Accounting Management is concerned with aspects of the system users. It mainly focuses on charging and billing users for services, and regulating service use (printing services, Internet/bandwidth, disk space usage, application and software use, etc.).

While this may not be applicable to all companies, in many larger organizations the IT department is considered a cost center that accrues revenues according to resource utilization by individual departments or business units.

3.1.4. Level P—Performance Management

The P level is involved with managing the overall performance of the network in order to meet the users and organizations desires. Performance management is focused on ensuring that network performance remains at acceptable levels (the network and systems services must be available, the speed must be efficient, there must not be bottlenecks and the network should never be used to its maximum capacity for prolonged period of times and potential problems are identified). System and network administrators must actively monitor the network performance to ensure problems do not occur.

A major part of the effort is to identify which improvements will yield the greatest overall performance enhancement.

But Performance Management involves network analyze too in order to gather information so that you can prepare it for the future (because performance criteria of a network varies all the time).

3.1.5. Level S—Security Management

At the S level, the network is protected against hackers, unauthorized users, and physical or electronic sabotage. Confidentiality of user information is maintained where necessary or warranted. The security systems (controls overall activities and ensure data security through authentication and encryption) also allow network administrators to control what each individual authorized user can (and cannot) do with the system.

As a network and system administrator, we are to address network authentication and security auditing to detect and prevent network sabotage, abuse and to prevent unauthorized access thereby:

- Record logs
- Firewall setup
- Control Spam
- Prevent Viruses, Trojans, Spyware
- Upgrade software, install OS patches
- Implement authorization techniques and password control (which is linked to accounting and configuration management)

3.2. ITIL - Information Technology Infrastructure Library

While the FCAPS framework is a great model for defining the objectives of network management, another best practices approach for service delivery was designed to align itself with current IT organizational structures and expand upon the FCAPS model.

ITIL - ISO/IEC 20000 (previously BS15000) standard - is a set of practices for IT service management that focuses on aligning IT services with the needs of business.

ITIL describes procedures, tasks and checklists (that are not organization-specific) used by an organization for establishing a minimum level of competency. It allows the

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organization to establish a baseline from which it can plan, implement, and measure. It is used to demonstrate compliance and to measure improvement.

ITIL procedures are widely implemented in a lot of organizations all over the world (such as NASA, the UK National Health Service -NHS, HSBC bank and Disney™, etc). ITIL is also supported by quality services from a wide range of providers including examination institutes, accredited training providers and consultancies, software and tool vendors and well known service providers (IBM, HP and British Telecom, etc.).

ITIL is not a theoretical set of information and process descriptions. ITIL tries to adapt working processes in IT Infrastructure and the aims are:

- to reduce costs
- to provide high quality IT services
- to create a basis for quality management
- to have satisfied customers
- to have a better communication between customers and IT staff

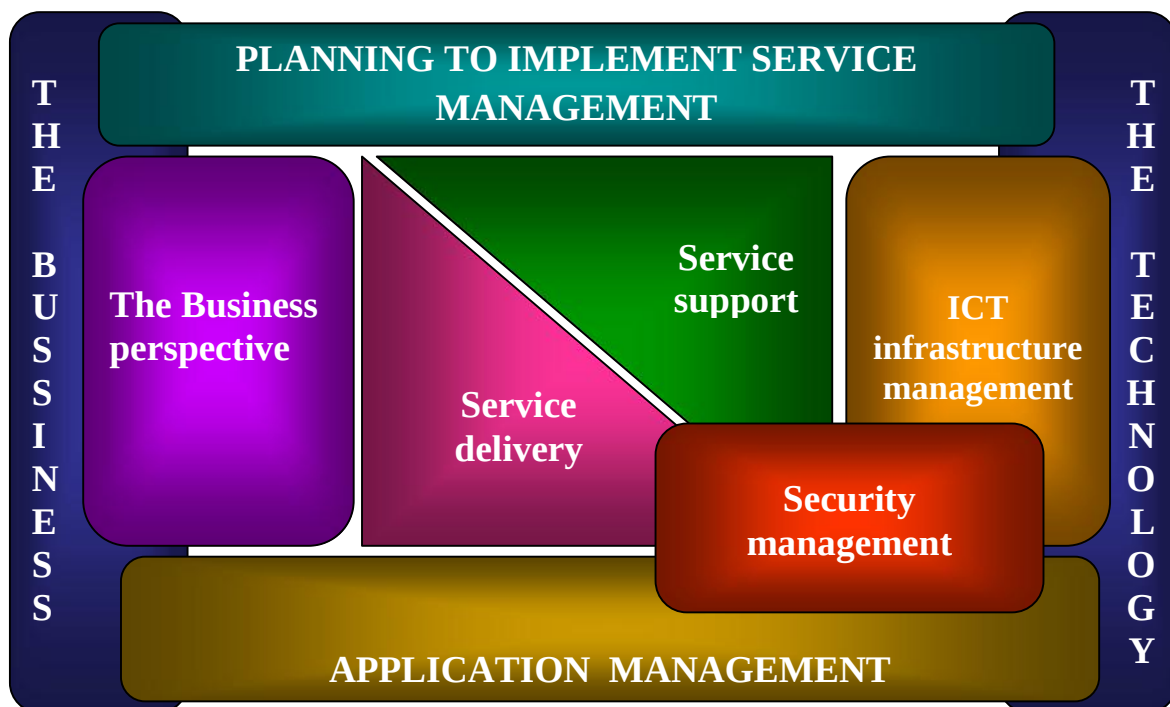


Fig. 2 – ITIL framework levels

ITIL was designed to provide a better framework to deliver high-quality, consistent application delivery over a network infrastructure.

To reach the above described aims, the ITIL framework is defined by the next levels:

3.2.1. Business Management

According to the 2011 edition of ITIL, business service management (BSM) is *"the management of business services delivered to business customers. Business service management is performed by business units."*

Business Management can be used to understand the impact of business needs on IT services and infrastructure, helping in the process of planning to ensure the portfolio of Business Services and IT Services aim to support these changing needs and objectives.

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This approach also helps to understand how technology, including incidents, changes and new developments, impact the business and customers.

3.2.2. Application Management

Application management is designed with the sole purpose of ensuring that an application has the right configuration and design to be implemented in the network environment. This discipline can cover many various aspects of network management, from number of application dependencies to delay timers for satellite links. Application management is designed to ensure that the application, end-to-end, is fully enabled to provide the service and delivery to the end users.

3.2.3. Service delivery

For many organizations, this is typically for network operations center (NOC). The service delivery process begins by defining the services to be delivered, the target consumers of the service, the business requirements and motivators for the services, and other high-level business issues.

The service delivery level is focused to ensuring to the end users the applications that they require. This area focuses on aspects of troubleshooting, help desk, and supporting new applications over the network. Problems management would track the number of incidents and facilitate troubleshooting of faults or performance problems that occur in the environment.

To troubleshoot a network environment, a good understanding of what devices are on the network and their configuration is handled by the configuration management (often referred to as configuration management database (CMDB)). Change management also involves both aspects of problem management and configuration management as the change board would approve planned changes for the infrastructure, update the CMDB, and record any problems encountered during the change.

3.2.4. Service Support

IT Service Management (ITSM) is concerned with delivering and supporting IT services that are appropriate to the business requirements of the organization. ITIL is fast becoming an international de facto standard, providing a comprehensive, consistent and coherent set of best practices for IT Service Management, promoting a quality approach to achieving business effectiveness and efficiency in the use of information systems. Service Support focuses on ensuring that the customer has access to appropriate services to support business functions. Issues covered include Service Desk, Incident Management, Problem Management, Configuration Management, Change Management and Release Management.

3.2.5. Security Management

A basic concept of security management is the information security and the primary goal of information security is to guarantee safety of information (the confidentiality, integrity and availability). The goal of the Security Management is split up in two parts:

- The realization of the security requirements defined in the service level agreement (SLA) and other external requirements which are specified in underpinning contracts, legislation and possible internal or external imposed policies;
- The realization of a basic level of security. This is necessary to guarantee the continuity of the management organization. This is also necessary in order to reach a simplified service-level management for the information security, as

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it happens to be easier to manage a limited number of SLAs than it is to manage a large number of SLAs.

Security Management involves protecting a network from all kinds of unauthorized access. This includes many sub functions like collecting and reporting security related information, proactively detecting and preventing intrusions, etc.

Security Management covers the following aspects:

- Intrusion Detection (Network and Host) –(Eg. OSSEC, Prelude Hybrid IDS, Snort or Suricata, Nessus)
- Configuration Management of remote nodes (Mercurial, Rancid(routers), CVS, Subversion, git)
- Analysis of data collected at the remote nodes (Cacti*, Hyperic, Munin, Nagios, OpenNMS, Sysmon, Zabbix)
- Taking action based on analyzed data
- Real- time response to certain types of intrusions

3.2.6. Information and Communication Technology (ITC) Infrastructure Management

In larger organizations, the teams that design and troubleshoot the systems are separate entities than the team that installs the equipments. This is why an accurate configuration management is essential to the success of IT organizations. Infrastructure management is responsible for the installation and physical configuration of all network devices in the organization. When changes are approved by the configuration management team, infrastructure teams are the army that enforces these changes based on the designs by other architects and engineers.

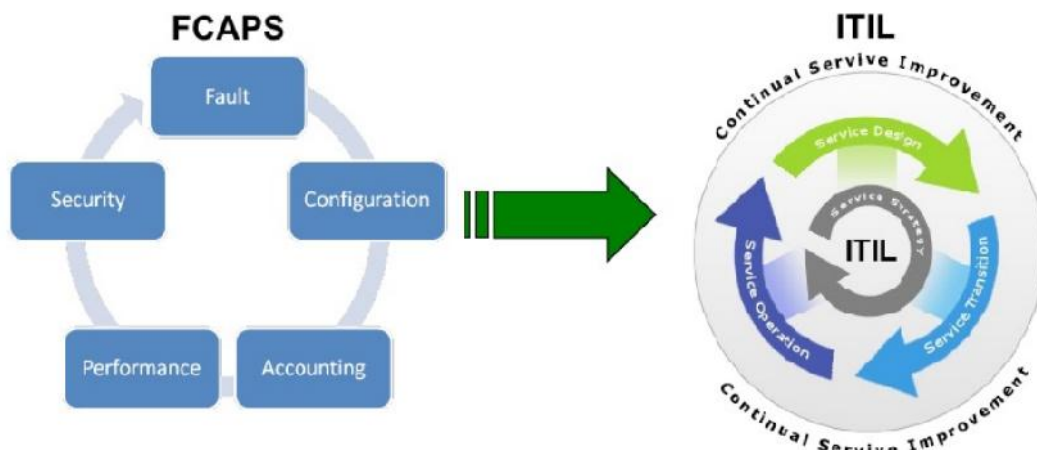
Software asset management is often considered a vital aspect of managing an organization. Software licenses and products are expensive commodities. Software asset management is designed to be partially configuration management as it provides essential information about the software installed on each device, its revision or platform level, and how many instances are required. Accounting for proper licensing and software maintenance is a big business with many larger IT organizations.

4. Conclusions

A simply review of these standards shows that ITIL and FCAPS overlap in terms of concept that they address. It is true that they do speak some of the same concept but they do so at completely different levels of abstraction. While FCAPS is primarily focused on the concept of technology management (starts with a technology centric view), ITIL is all about the process for how to run an efficient IT organization (ITIL focuses on process and workflow).

FCAPS has proven to be a logical and low risk starting point. As a recommendation, start with FCAPS concepts and put a plan in place to optimize the organization by developing ITIL best practices.

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We can start with FCAPS and implement ITIL across our corporate !

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**The 7th International Scientific Conference
“DEFENSE RESOURCES MANAGEMENT
IN THE 21st CENTURY”
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MILITARY BUSINESS ETHICS

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Abstract:

The modern military has to match its political and economical limits and ethical constraints with what it wants to do. Today it is well known that a professional military reflects the nation's major values within its culture and shows the general concern for its present and future. Universal moral knowledge is like scarcity embedded into any budget for the reason that no matter how much money we have in a given budget there will always be a problem of not having enough money for spending. The problem is to harmonize issues and challenges of ethics impact on defense and welfare of the nation as a pervasive need.

Key words: military, business, ethics, character, moral, management, social, responsibility, negotiation

1.Introduction

In the last decades a new conception emerged in military business that generated a large debate: managerial approach from an ethics perspective and social responsibility. Comparing with the way we were conducting military business in the past, when ethical problems and organizational responsibilities had marginal importance, in our time it has occurred such a weight so we are talking now about “ethical organizations” and we are promoting a “socially responsible management”.

Modern military comes along with new concepts about sharing capabilities between countries as: “Smart Defense” and “Pool and Sharing”. These fields must be explored and anchored in ethics to enable managers to perform responsible, effective and efficient in delivering organization's resources when and where they are needed.

2.What business ethics stands for

Military business ethics is a form of applied ethics in a business military environment, endorsed by laws but not necessarily. Describing ethics is unfolding what makes you respected or blamed by society from three different cultural approaches: a secularly tradition value based and a universal value based and a special value based.

The first one is a package of particular values related to anthropological culture, developed during the history of a country as a set of rules for preserving a specific culture, implying the use but not limited to: color's code for mourning, food and alcohol drinking interdictions or preferences, genders rules for domestic life and occupational positions, negotiations when purchasing an item, the importance of being on time or being late to a meeting, including a personal fee to a transaction etc.

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The second one is more refined and it is related to a set of universal values and rules as: honor, courage, sincerity, justice, and altruism, to not steal, to not lie, to not cheat, respect your parents, and keep you promises etc.

The third one is a set of special values specific to evolved society and used for deconflicting the particular values and universal values by prioritization in the case of: protocol, medical, legal, professional, environment and business etc.

3. Military business ethics importance

As civilian business type increases in the military we have to be aware about the power and the influence of business organizations that is more significant now than it was in the past and about immoral policies frequently encountered in the business field that may produce huge damage and prejudices to individuals, communities and environment.

A question of morality is always there in the business debated by the public: the well being of individuals, society or shareholders. The withdrawing of the state administrations from some economic sectors and companies, partially or totally, in the favor of multinational companies, created a gap in taking over the responsibilities the state used to have. Recently, the public opinion became more demanding on public and private companies to deeply involve in eradicating all problems from contemporary society.

Military comes as a stakeholder in society together with local communities, consumers, companies and workers affected directly or indirectly by the activity of companies. They are not only passive to the business playground but as well as active players involved and without their implication the military activity will be impossible.

Moreover the globalization and regionalization of the modern business environment raise moral issues that must be subject to ethical behavior in conducting our military business in a multinational and multicultural context. New problems can occur regarding the early certainty values being replaced with the relativity of morality fairness in a dynamic changing complexity.

4. Military business management

The growing importance of military ethics is explained by the structural and strategy changes of the military organizations into a more welded body, national or multinational. Traditional managerial theories are based and focused on ethics only at the level of top hierarchy management.

The modern managerial hierarchy is driven by a more flexible flattened staff than an elevated rigid one, where more decisions are made at lower levels by a large number of people. That makes very important understanding the complexity of ethics issues, the values and essential goals of the organization, as it will be reflected in business.

The moral criteria embedded in military business are most significant because the new organizational structure comes with new complications without traditional precedent regarding: data flow, information administration and empowerment of individuals.

Initiatives like “Smart Defense” and “Pool and Sharing” capabilities are the vivid examples about seeking solutions for the modern warfare. It is a renewed military culture of cooperation at the highest level of trust between stakeholders that encourages them to cooperate in developing, acquiring and maintaining military capabilities under an alliance.

Pooling and sharing capabilities, setting priorities and coordinating efforts comes with or along with the decisions process, risks and more ethics issues.

The management of such an enterprise as mentioned above looks like a new one but in fact there are multinational business that works this way. Some of them are making

money as a profit but some are involved in not money profit business as NGO's, for the purpose of delivering well being or support as: medical aid, preserving environment, disaster and famine relief.

Following the idea it comes that delivering a profit like defense may be done starting with the know-how from other field of expertise and management as well. Of course a new issue is brought up by the society obligations versus the community obligations, under a larger umbrella usually known as duty.

5. Military management ethics

A military manager has to deal with resources tangible as materiel, people, and money and so on and with no tangible resources as information including ethics. When deliver a moral reasoning he must deliver a full package containing the ethics component and a strategically or a tactically component.

The military business moral obligations for its shareholders as government and employees, aside their obligations to military business are mainly internal obligations that are born from a communion of interests. The obligations for the recipient of defense aside the contributors, creditors, competitors and other stakeholders are external obligations. Both types of obligations can be managed if the profit is not incompatible with morality, under the idea "good ethics is good business".

Military management ethics is multidisciplinary and intercultural applied ethics on the field of military personnel, in command positions, focused on criteria as: good and bad, correct and incorrect, just and unjust. It is a set of mixed rules, even they are legal or collective consciousness required, that military leaders must obey to perform any military actions under a master rule "where no ethical constraints are applicable the only constraint is the law". There are three different ways to accomplish a military task by being moral, immoral or amoral.

In the first place comes moral reasoning on military decisions of life and death is all about being rational and necessarily having character. It is based on a long term planning in the light of healthy ethics, as honor and the sentiment of duty, by the law and the spirit of the law.

Next comes the immoral way of thinking, where the manager has no character. His actions disregard ethics that are not endorsed especially by the law.

In the end, the amoral approach in the military is situated between moral and immoral, when the manager has little character. He is working by the law and he is not bad intended, applying ethics, but he is not concerned about the implications of his actions.

Business military ethics refers not only to social responsibility behavior, but also to the means used by leaders and their subordinates in achieving objectives and goals. Rules of Engagement define in a pragmatic way the military solution on ethics issues about life and death situations or crisis.

6. Military ethics on social responsibility

The military organization is appreciated not only for outstanding military results but also for considerable achievements on social goals. A military organization must be active involved in social responsibilities as: human rights, honoring national heroes, protection of the environment, preserving natural resources, public security, healthcare, family, education, intellectual property etc. This involvement is regulated by law but there is enough room for initiative in solving social problems, and that will make the difference.

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A current debate is in place on social responsibility for the military organization, where those who are against assuming responsibilities out of the legal framework are right being afraid of diversion into no man's land, and those strong characters that are not afraid of doing the right thing, step forward. Such issues are the proof for a mature organizational culture and this is good for the military, as well as for our society.

When you are in a multinational organization implementing "Smart Defense" and "Pool and Share" concepts, you know social expectations from behalf of your nation, but you should know what the social expectations are from other contributors to the organization. For this reason education on ethics is needed on upper levels of the military, where decisions are made accordingly with the desired future state of the multinational organization.

7. Negotiation ethics

As in any business conducting proper negotiation may be the key for success, so it is the same in the military. It is very important to be professional during official meetings and to understand the importance of personal meetings and talking as an access ramp for negotiation. Business ethics will help you in taking optimal decision and balance sensitive opposite opinions during negotiation.

We value a manager by the results of his strategies and tactics applied in business and negotiations especially during and after a conflict situation. A functional conflict is related to efficiency in business and a dysfunctional one is usually related to the end of cooperation on an ethical issue.

The common sense is the right approach for solving an issue about ethics, and first thing to do is not questioning the other part about the issue before finding answers to questions as: "What is the negotiation objectives?", "How my partners will respond to a negotiation proposal?", "Who will affect my situation?" and "How I will be affected by my partners actions?", "Do you trust each other before starting the negotiation process?" and "Is needed a tactical break?", "Are my partners ready for negotiation and willing for a fruitful negotiation?", "What end state of negotiation will satisfy all parties?" and "What could be my partners questions?".

If you are open minded these questions will help you to correctly evaluate the type of conflict you are facing with, and honestly recognizing your ethical dilemma to your partner will create a bridge between cultures and finally you will find a feasible solution together.

When the questions time is part of negotiation you must be willing to understand your partner's ideas about the ethical issue and take into consideration more common sense like it is: "Do not start with questions about your partners will disagree." and "Do not criticize your partners about being in error.", "If an adjustment must be done start it gradually."

8. Conclusion

Military ethics is not a new preoccupation for academics and it comes from the necessity of being competitive and viable on long time crisis, on the ground of uncertainties, driven by dynamic changes of cultures and technological development.

The most demanding for military is achieving wisdom to use the appropriate tools to reach the desired end state result of using lethal force. The right path to accomplish wisdom is proper education for your soldier and best education for your top level military.

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Nevertheless this does not mean that in the military organization is a need for undereducated personnel, but for adequate education in decision making process.

Debates about professional military ethics are still undergoing and all opinion seems to be pertinent even they agree or disagree upon the subject, but when you have to couple an ethical dilemma you will find the correct answer in knowledge or common sense.

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CONSIDERATION ON ANTIVIRUS PROTECTION AT
ARMAMENTS DEPARTMENT

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Abstract:

Network's infection by viruses is a cause of majority companies and governmental organizations losses. In some circumstances such infections appear despite antivirus protection existing on workstations. Ones can ask: *Okay, but I have antivirus on each station, though I was infected. Why?* The answer is many times simple: because the solutions were not correctly configured, installed and/or were not thought to work together. In this paper will be provided some piece of information about how these issues are approached at Armaments Department.

Key words: antivirus, network, protection, security, Armaments Department, BitDefender

1. Introduction

Now more than ever, institutions are concerned about the security. The number, variety and strength of the threats to computer and network security have dramatically increased and businesses need to be prepared against an ever-changing landscape of attacks.

Armaments Department is the structure of Romanian Ministry of National Defence[MoND] responsible for the management of major defence acquisition programs, R&D, testing and evaluation of military equipment and technologies, contracts for domestic and foreign acquisitions, quality assurance and surveillance at domestic suppliers. It also coordinates Military Technical Academy, Military Equipment and Technology Research Agency and C.N. Romtehnica S.A.

Led by a secretary of state, Armaments Department consists of three main directorates (planning, R&D and contracting) and independent subordinate microstructures (including IT service).

IT infrastructure implemented to sustain organization's activities includes the following systems, organized according operational needs:

- LAN to access public INTERNET services,
- LAN interconnected with INTRAMAN, the private MoND restricted WAN,
- independent workstations (desktops and mobiles).

Having in mind the value of information stored and processed, a real growing asset despite the other lacks, the antivirus protection is very important. Safety is not a privilege is a must.

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Security doesn't have to be complicated, time consuming, or expensive. Government knows that there is a real need for security, but may be skimpy about cost issues.

2. Antivirus protection

With computer literacy increasing dramatically and the line between private and business use of computers and networks blurring, organizations need to keep a close eye on their employee's activities on their IT infrastructure and ensure that their security is not at stake.

There are many solutions, but all have a single starting point, namely that of a thorough analysis of network status, of software requirements and practical arrangements for security. Following this analysis supply may develop based on which you can go and search companies' offers to provide corporate antivirus solutions that meet the requirements set.

Now comes the most complicated part in the bid selection. At this point you should take into consideration not only the price you can get for a certain number of licenses, very important is what you get for that price!

Technical support, upgradeable and responsiveness of the company providing at the time of infection is particularly essential.

Since 2002, following a public acquisitions procedure, a virus protection solution from the Romanian software solution provider Softwin, a.k.a. BitDefender, has been implemented at Armaments Department.

At the beginning, the protection was configured for each workstation and server individually. As systems developed, both hardware and software, in conditions of increasing threats, we fully benefited of provider's launch of more complex products with integrated management features.

I will not make an in-depth description of products but leave the discovery temptation to those interested. What I intend to do is to introduce some general information about the software solution and reveal some particular aspects which finally allowed a real cost effective antivirus protection implementation.

2.1. Antivirus Architecture for networks

The core element for networks protection is BitDefender Client Security, a robust and easy-to-use business security and management solution, which delivers superior proactive protection from viruses, spyware, rootkits, spam, phishing and other malware.

It enhances business productivity and reduces management and malware-related costs by enabling the centralized administration, protection and control of workstations inside companies' networks.

BitDefender Client Security includes the following components:

- Management Server
- Client products
- Management Agent
- Management Console
- Deployment Tool
- Update Server

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2.1.1. Management Server

Management Server is the main component of BitDefender Client Security. Its purpose is to manage all security solutions inside a network based on customizable security policies. Using Management Server, client products can be remotely installed and managed.

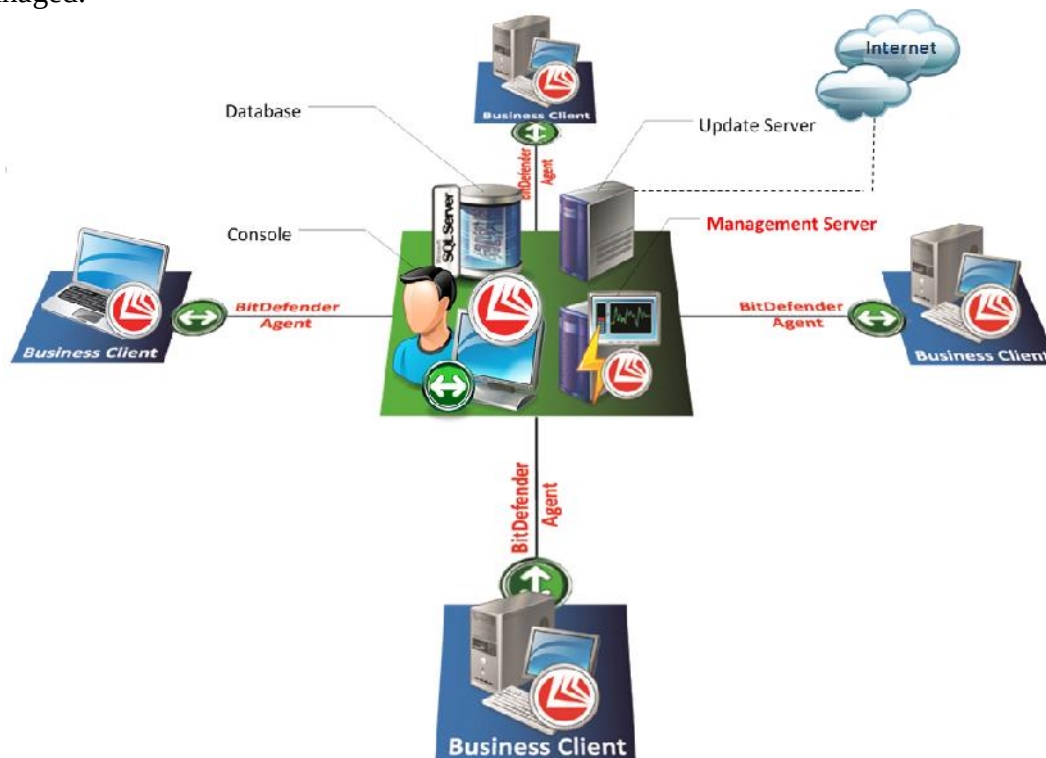


Figure no.1: Remotely Install and Manage BitDefender Client Products

The "brain" of the product

The policies received from the user through the management console are forwarded to the workstations in order to be executed, while the information received from the workstations is processed by Management Server. The information is then forwarded to the management console where it can be viewed and interpreted by the administrator.

Management Server can be dynamically extended to perform various other security-related policies that users may need. Clients can also be managed from a workstation other than Management Server.

Connected to Database

Management Server will stay permanently connected to a database (for example MS SQL Server Database) that stores information about all product configuration files. In this way, BitDefender Management Server can manage a huge amount of information in the shortest possible time.

Password-protected

Management Server is password-protected in order to prevent unauthorised access.

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2.1.2. Client Products

A client product is a product that Management Server manages remotely, through policies.

BitDefender Client Security smoothly integrates with and manages:

- Workstation Client Products :
 - BitDefender Business Client
- Server Client Products (Gateway Level) :
 - BitDefender Security for Mail Servers (Windows, UNIX)
 - BitDefender Security for Exchange
- Server Client Products (File Server Level)
 - BitDefender Security for File Servers (Windows)
 - BitDefender Security for Samba
 - BitDefender Security for SharePoint

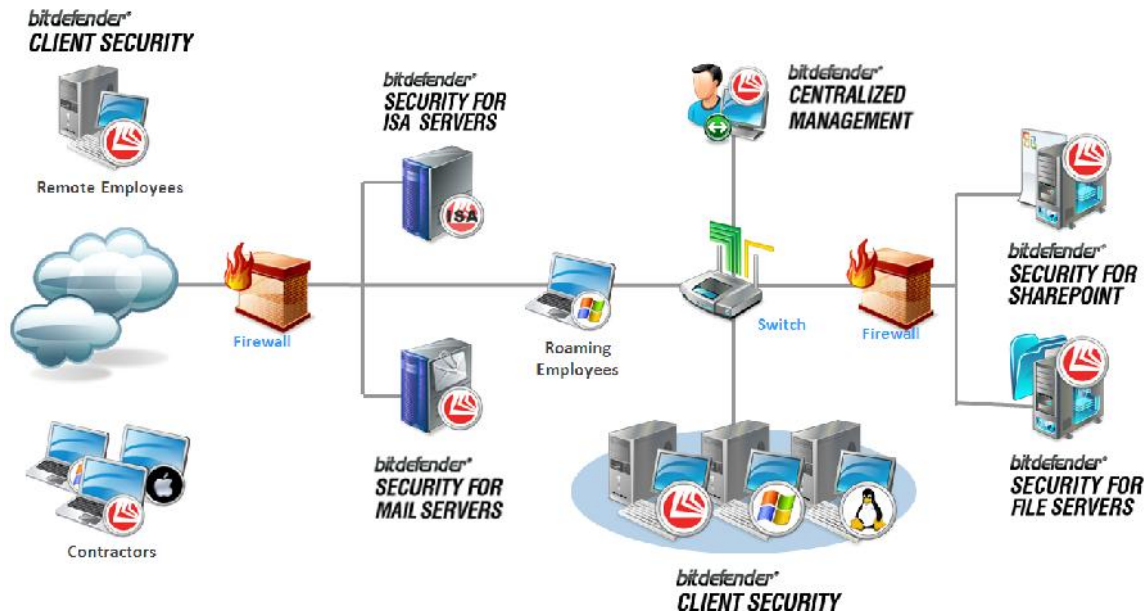


Figure no.2: BitDefender Client Products

2.1.3. Management Agent

Management Agent is the component deployed on each workstation to be managed by Management Server. It is used to ensure communication between Management Server and the client products installed on a specific workstation. It fulfils three main functions:

- queries Management Server to learn the security policies that need to be applied to the local workstation,
- applies the security policies received from Management Server,
- sends the results of the applied policies to Management Server .

2.1.4. Management Console

Management Console represents the graphical user interface (GUI), created to allow the administrator to interact with BitDefender Management Server.

By using the management console you can:

CONSIDERATION ON ANTIVIRUS PROTECTION AT ARMAMENT'S DEPARTMENT

- visualize the entire network (managed computers, computers that are not currently managed by Management Server, computers excluded from management),
- remotely deploy Management Agent on detected network computers or on computers from Active Directory,
- remotely deploy BitDefender client products on managed computers,
- set Management Server to automatically deploy Management Agent and Business Client on newly detected computers,
- find out detailed information about a managed computer,
- assign policies to managed computers or to computers from Active Directory in order to configure and even to install client products,
- run management tasks on managed computers in order to remotely perform administrative tasks,
- check the results of the assigned policies and network management tasks,
- configure Management Server and monitor its activity,
- obtain centralized easy-to-read reports regarding the managed computers,
- remotely remove client products installed on managed computers.

2.1.5. Deployment Tool

Deployment Tool is an independent component that helps to automatically install, remove or repair products on remote network computers. This tool also enables to create unattended installation packages for use on offline computers (or when remote installation fails).

2.1.6. Update Server

Update Server is an independent component that allows you to set up a BitDefender update location within the local network. In this way, you can reduce Internet traffic because only one computer will connect to the Internet to download updates while the others will update from this local mirror. Moreover, updates will be performed faster and even on the computers that are not connected to the Internet.

2.1.7. Supported Client Products

Management Server smoothly integrates with and manages both workstation and server security solutions.

Business Client

BitDefender Business Client integrates antivirus, firewall, antispam and antispyware modules into one comprehensive workstation security package, tailored to meet the needs of corporate computer users.

Server Client Products

Security for Mail Servers

BitDefender Security for Mail Servers protects Windows or UNIX-based mail servers for known and unknown security threats with award winning proactive antivirus, antispyware, antispam, antiphishing, content and attachment filtering technologies.

The solution secures organization's email services and provides increased productivity by blocking spam and providing common centralized management tools.

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Security for Exchange

BitDefender Security for Exchange safeguard's your organizations critical messaging services to protect against email-borne viruses, spyware and spam. Integrating seamlessly with Microsoft® Exchange Server, BitDefender Security for Exchange combines malware protection, antispam, antiphishing, and content filtering technologies to increase productivity and ensure the overall integrity of your email platforms.

Security for File Servers (Windows)

BitDefender Security for File Servers provides optimized protection of both the server operating system and data file structure for critical back-end systems. Easy to install, configure and maintain via the centralized management console, BitDefender for File Servers protects against viruses, spyware and rootkits to minimize the impact of malware propagation throughout the network.

Security for Samba

BitDefender Security for Samba enables organizations to deploy antivirus and antispymware protection for their Samba network shares running on Linux, FreeBSD and Solaris systems. Deployed and maintained centrally within the network, Security for Samba scans cross-platform data structures and file stores for malware, keeping network users safe from virus infection.

Security for SharePoint

BitDefender Security for SharePoint provides proactive protection of SQL document repositories against known and unknown viruses, spyware, Trojans and root kits.

Real-time, optimized session-based scanning of uploaded, downloaded or accessed files helps to prevent Microsoft SharePoint deployments from storing and sharing of infected files within the network.

2.2. Antivirus for Stand Alone Computers

Options for protecting independent computers were for standalone category products.

BitDefender released three type of products, mostly targeted for home users. Taking into consideration the operational requirements (working without any communication), the option was for the less complex : Bitdefender Antivirus Plus.

Some of the product characteristics are the following:

- Active Virus Control - A proactive, dynamic detection technology which monitors processes' behavior in real-time, as they are running, and tags suspicious activities.
- USB Immunizer - Immunizes any Flash Drive from viruses, when connected to computer,
- Rescue Mode - If e-threats, such as rootkits, cannot be removed from within the Windows operating system, the computer is re-booted in rescue mode—a trusted environment which is then used for cleanup and restoration,
- Vulnerability Scanner - Checks for missing or outdated security software, missing Windows security patches, as well as potentially unsafe system settings.

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A second option, in the future, could be Bitdefender Total Security that integrates extra features which would be of interest:

- File Shredder – Completely erase sensitive stored files on PC or media,
- File Encryption – Locks up confidential files in an encrypted vault.

2.3. Implementing on LAN to access public INTERNET

LAN to access public INTERNET services consists of one Microsoft ISA server, two domain controllers, one file server, one web server hosting Armaments Department internet website www.dpa.ro, one server for webmail (HMail with SquirrelMail) and client workstations.

The implementation is presented in Table 1.

Equipment	BitDefender product						
	Management server	Management agent	Update server	Management console	Security for ISA	Security for File Servers	Security for Mail Servers
ISA server					X	X	
1 st domain controller		X				X	
2 nd domain controller	X	X	X	X			
Web site server		X				X	
WebMail server		X				X	X
Workstations				X*			X

* installed only on administrators workstations

Table 1

Using management server, computers were organized in specific groups according to the structure the organization and the rights to access mobile storage devices.

Clients can be sorted by name, description, IP address, the time when the agent last synchronized, agent version etc.

A set of default policies were created and tasks are assigned to specific clients or to entire client groups (even to the entire Managed Computers group).

BitDefender Business Client can operate in two modes: restricted user and power user. In the restricted user mode, the user cannot configure the product, but only perform basic tasks, such as launching a default scan task, updating BitDefender or backing up data. In the power user mode, the user has full control over BitDefender Business.

Except administrators' workstations, all business clients operate in the restricted user mode.

Real time protection is set on every client and can be changed only by power users.

First action, when a file is detected as infected is set to *disinfect* and second to *delete*, this last option being preferred instead of quarantine.

All alerts are sent by e-mail to administrators group.

CONSIDERATION ON ANTIVIRUS PROTECTION AT ARMAMENT'S DEPARTMENT

Using tasks, deep scans are assigned and executed on servers every night and once a week on workstations.

The first update location is set to the internal update server and secondary the internet site of the provider (<https://upgrade.bitdefender.com>). Clients are set to search for update every hour.

2.4. Implementing on LAN interconnected with INTRAMAN

LAN interconnected with INTRAMAN consists of one domain controller, one Microsoft Exchange server, one Windows Share Point & file server, one application server, one WSUS server and client workstations.

Table 2 summarizes LAN –INTRAMAN implementation.

Equipment	BitDefender product							
	Management server	Management agent	Update server	Management console	Security for SharePoint	Security for File Servers	Security for Exchange	Business Client
Domain controller								
Exchange server		X				X	X	
WSS & file server		X			X	X		
Applications server		X				X		
WSUS	X	X	X	X		X		
Workstations				X*				X

* installed only on administrators workstations

Table 2

The domain controller is managed exclusively by INTRAMAN administrators who are responsible with all security of this server. Only issue of concern is the compatibility of antivirus protections.

Using management server, computers were organized in specific groups according to the structure the organization.

Access to mobile storage devices is allowed only at the transfer station. Except administrators, all business clients operate in the restricted user mode.

Some shared folders from application server are locally mapped as network drives on few workstations. In order to avoid simultaneously double scanning (by file server and client antivirus) a set of exclusions were established and assigned using WMI policies.

A set of exclusion is also implemented in order to make possible the normal function of WSS and Exchange servers.

Real time protection is set on every client and can be changed only by power users. Considering the LAN and potential threats, the following modules were inactivated: antispam filters, antifishing both on Security for Exchange and Business Clients.

The first action when a file is detected as infected was set to *disinfect* and second to *delete*.

All alerts are sent by e-mail to administrators group.

CONSIDERATION ON ANTIVIRUS PROTECTION AT ARMAMENT'S DEPARTMENT

Using tasks, deep scan are performed on servers every night and once a week on workstations. The internal update server is the single update location. Updates are manually transferred from online Internet update server to the intranet update server, using mobile storage, at least once a week. Clients are set to search for update every day.

2.5. Implementing on independent workstations

Bitdefender Antivirus Plus is used for protecting stand alone computers.

Real time protection is set on every client and can be changed only by power users. Considering potential threats, some modules were inactivated: antispam filters, antifishing, firewall, parental control. Mobile storage are automatically scanned each time are used in system.

Automatic update is turned off. Updates are manually transferred from internet site of the provider (<https://upgrade.bitdefender.com>), using mobile storage, and installed at least once a week.

First action when a file is detected as infected was set to *disinfect* and second to *delete*.

Using tasks, deep scans are automatically performed twice a month.

3. Organizational measures

Some organizational measures complement software installation in order to provide a more safety environment.

Procedures for installing, for reporting and intervention were issued; administrators and user has been instructed how to react in specific conditions (eg. when viruses are detected or different tasks are launched etc.).

At least once a day administrators verify management server reports, logs etc.

Duties to update products and viruses signatures on systems without internet connections and keep the track were established.

4. Partnership

As previously mentioned, technical support, upgradeable and responsiveness of the company is particularly essential. By contract, two type of support are provided: online assistance and onsite intervention.

Online assistance is provided via e-mail or chat, a tracking system providing traceability from the notification to the resolution.

Onsite intervention is performed each time online assistance is not enough or specific needs require it.

Being both local provider and producer brings lots of advantages and reduces time to communicate and solve problems.

In an unwanted situation of infection, specific targeted disinfection tools are made available in time. For example, that was of a great help when systems were infected with Conficker. Normally it shouldn't happen, but because of budgetary restrictions, expired licenses were not renewed for more than 2 months and systems get infected. Using the tools provided, despite the contractual situation, all systems (more than 250 workstation in both networks) were disinfected in less than a three days.

Access to the latest versions of products is implicit within the contractual framework and a special discount is available for new products. Access to beta releases is also provided. That facilitated the possibility to test and familiarise with antivirus solution for virtualized environments.

CONSIDERATION ON ANTIVIRUS PROTECTION AT ARMAMENT'S DEPARTMENT

An widening direction for future collaboration would be products customisation in order to make possible the use of MoND's own algorithms in File Shredder and File Encryption features.

5. Conclusion

Organization's growing dependence on IT and IT-based controls, information and IT security risks increasingly contribute to operational and reputational risk.

Even security is an internal issue (it can't be bought), a cost effective antivirus protection is of crucial importance and relies on technical measures, procedures, personnel training and responsiveness of the provider.

Leaders at Armaments Department understood the legal, managerial and operational considerations that converge in an enterprise security program and provided sufficient resources to implement and maintain an adequate antivirus protection.

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**THE ANNUAL PRODUCTION PROGRAM OF THE
MAINTENANCE CENTER FROM LAND FORCES**

LTC ENG Nicolaie BUCICA

102 MAINTENANCE CENTER “BUCOV”

Abstract

This paper presents the annual production program from maintenance center, its structure the preparation, approval and data reporting stages .

1. Introduction

The Maintenance Center (CM) is a non-deployable structure subordinated to the Land Forces/Logistic Base that is assuring planning, management, control and execution maintenance activities of military equipment, in time of peace and in situations of crisis and war.

For production activity that has provided production structures type sections and in subordination Military Equipment Maintenance Sections (MEMS). Military Equipment Maintenance Sections are placed in area of responsibility of big units and units whom they support.

Document that plans, executes and evaluates production activities of productive units of MoD is “The annual production program” (APP). It is elaborate by the productive units, except MEMS subordinated maintenance centers. That is based on hierarchical tasks received from the upper echelons, according to the skills, capacity of production and allocation of funds.

The skills of maintenance center are given by:

- the infrastructure;
- the machineries and the existing equipments ,
- the technical and engineering personnel, training and expertise of them;
- the existence of the technological documentation;
- the permits obtained from the competent structures for different activities;
- the attestation of capability for the work that is performed;
- the experience from the past.

2. Preparation and Approval

APP is prepared and sent for approval and advice until November 15 to major program director or to secondary authorizing officer ,following the advise and approve within 30 days of receipt of the approved budget but no later than February 15 .

THE ANNUAL PRODUCTION PROGRAM OF THE MAINTENANCE CENTER FROM LAND FORCES

If project budget or PPA is not approved project until 31 December, productive sections and MEMS runs their activities based on the monthly extract of APP project, made by maintenance centers based on the task gave by upper echelon.

For the preparation program project the planning office and production tracking is doing a rigorous analysis, this is based on the following:

- ❖ the organizational structure (number and specialties of the production staff) of the productive sections and workshops;
- ❖ the competence of these structures about production activities;
- ❖ tasks received from the upper echelons;
- ❖ the need for cooperation with other productive units;
- ❖ uniform distribution of the productive tasks;
- ❖ assimilation in repairing / manufacturing of the new military equipment;
- ❖ running dismantling of military equipment for free storage space parts available in their storages;
- ❖ previous experience.

Office planning proposals are reviewed and approved by the commander and chief engineer it is prepared the final product program project.

3. The annual production program elements

The annual production program contains the followings:

the advisal and approval tab;

- the annual production program form;
- the economic-financial indicators and usage of the fund of time:
 - goods production value-value of the entire production executed, delivered or to be delivered on a specified period of time;
 - total cost for manufacturing production of goods;
 - the average number of personnel-is the ratio between the amount of total daily number of staff directly and indirectly productive and the number of days in the period considered;
 - workforce productivity that is calculated using “goods production”-that is calculated by dividing the indicator "value of the goods" to the average number of personnel from the unit;
 - the indicator of utilization to production capacity for: repair and revision, fabrication, recondition, assimilation, technical assistance and other activities- represents the percentage of the total time used for executing various types of activities.
- calculation of the fund production time;
- calculation of average hourly wage;
- the table with the structure of indirect cost and generated by administration, calculation of unique quota for unit.

The fund production time is calculated taking into account:

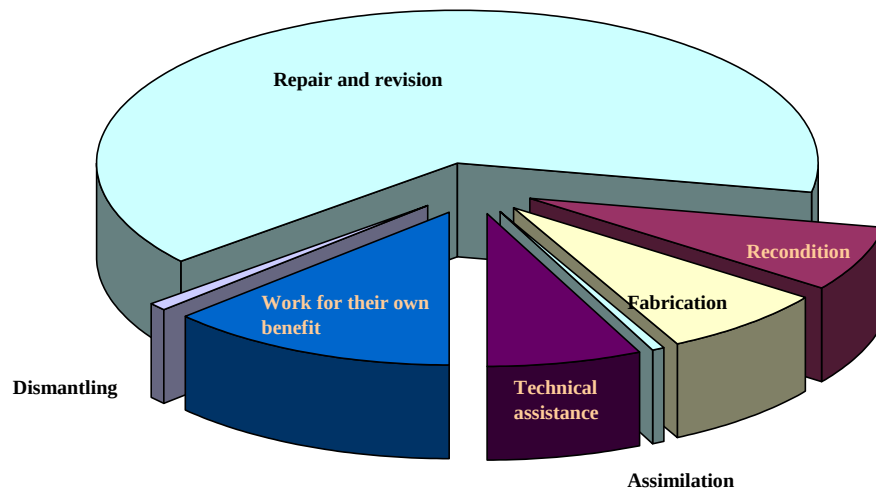
- maintenance center and production departments structure ;
- total number of productive staff and their specialization;
- unproductive activities (holidays, military-specific activities, study leaves, sick leave, permissions).

THE ANNUAL PRODUCTION PROGRAM OF THE MAINTENANCE CENTER FROM LAND FORCES

It will result the production capacity available at that time, structured into sections or chapters of plan that present below:

The production structure	The production capacity (hours)
1st Section	
2nd Section	
.	
.	
.	
nth Section	
TOTAL MAINTENANCE CENTER	

The production capacity planned for....



We can observe that the largest share in productive activity have the activities for repair military equipment.

Production fund for maintenance differ between centers because their organizational structure has different features and the number of directly productive staff is not the same.

The annual production program is structured into the following chapters:

Chapter I - repair and revision/overhaul of military equipments;

Chapter II - fabrication and modernization of military equipment;

Chapter III - Other works which include:

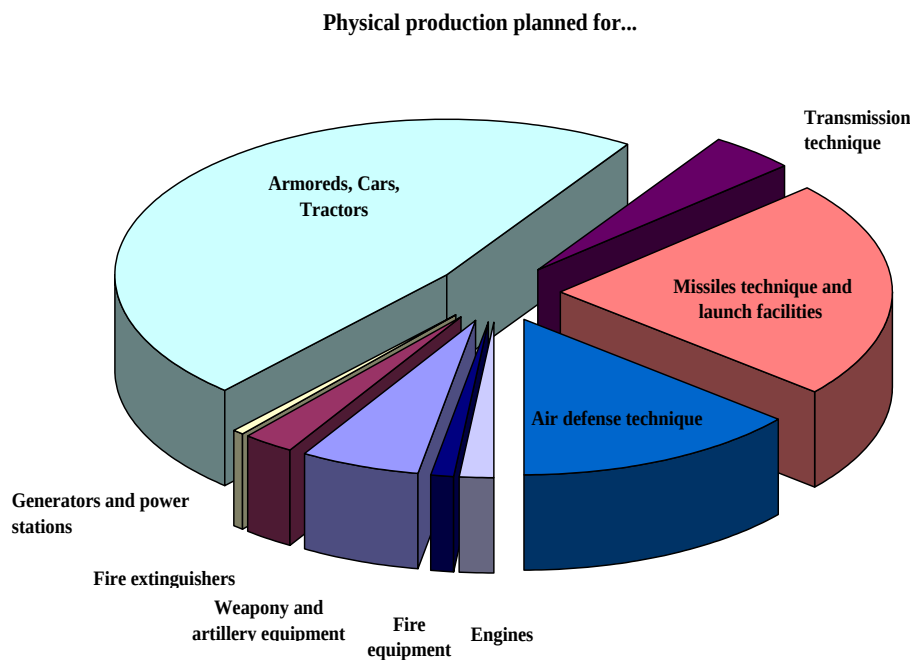
- recondition of parts and subassemblies;
- fabrication of parts and subassemblies;
- assimilation of new products;

THE ANNUAL PRODUCTION PROGRAM OF THE MAINTENANCE CENTER FROM LAND FORCES

- technical assistance and periodic technical inspections;
- endowment on their own with production equipment;
- dismantling, demilitarizing;
- work for their own benefit;
- maintenance or repair equipment for production;
- provide of services for civilian persons/institutions;
- cooperation with other productive units;

The productive units which are providing works for the benefits of other directors of major programs are structuring the annual production program for each director.

The production program graphic may look like this:



4. The evaluation and monitoring of the program

Evaluation and monitoring of PPA execution is done as follows:

- Weekly of the MEMS and the productive sections and the workshops of the structure.
- Monthly, until ..., the center commanders are analyzing the program stage for the previous month based on the report about the accomplished of the production program per month ... received from MEMS, also the report of the production sections from subordinated structure.
- Quarterly, until of the next month, MC are sending the state of annual production program accomplishment per quarter..and cumulated from the beginning of the year . The situation of accomplished of the main indicators economics and financials per quarter... and cumulated from the

THE ANNUAL PRODUCTION PROGRAM OF THE MAINTENANCE CENTER FROM LAND FORCES

beginning of the year. The explanatory report on the causes for failure of APP tasks.

Based on periodic reports Land Forces can compare maintenance centers about labor productivity, efficiency and effectiveness of production activity.

5. Conclusion

Knowing and analyzing very well:

- ❖ the production tasks received from the upper echelons;
- ❖ the production capacity of unit;
- ❖ the skills of unit;
- ❖ the necessary of funds, it is prepared a very realistic annual production program that can be put into practice in a very good, effectiveness and efficiency way.

If we compare the activity of a civilian factory and maintenance centers we will observe:

- ❖ in the civilian factory- the productive activity always takes place with minimum cost and maximum efficiency;
- ❖ in the maintenance centers- the productive activity is carried out to maintain functionally complex and important equipments. This activity, if is possible, takes place following the effectiveness and the efficiency and.

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A EUROPEAN WAY OF WAR [1]

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Policies Directorate / Bucharest / Romania

Abstract:

Through establishment of ESDP/CSDP in late 1990s, following the French-British Declaration in Saint-Malo, the EU has developed a defence and security dimension in its own right and has managed to launch more than 20 civilian missions and military operations. While ESDP/CSDP is to be seen as the operational arm of the EU's foreign policy, this essay tried to identify whether the Union had also its own way of waging wars, by that actually meaning to conduct crisis management operations based on an integrated / comprehensive approach. With a large array of instruments at its disposal, civil and military ones, the EU seems quite well prepared to respond to international crises, although of a limited scope and at the rather lower intensity spectrum. With the Treaty of Lisbon providing for a mutual assistance clause and due to the recent statements on a possible US retrenchment, the Union seems to have to assume greater responsibilities on the international stage. While the economic crisis requires innovative solutions to compensate for the cuts in MS' defence budgets, the EU should try to demonstrate that it has both the will and the ability to strengthen its role as a meaningful security actor and complement NATO's actions in this field.

Key words: ESDP/CSDP, crisis management, operations, missions, collective defence

1.Introduction

Since the establishment of the EU, back in the 1950s (initially in the form of a European Economic Community - EEC), the topic of a genuine **European defence** has been *de facto* a taboo for most of the period until 1999. Quite surprisingly the European Security and Defence Policy (Common Security and Defence Policy after the Treaty of Lisbon entered into force in December 2009) has emerged in the past 12 years or so as the spearhead of the EU's foreign policy and a major asset in the respective policy toolbox.

With more than 20 military operations and civilian missions on most continents, after a shy start in 2003, the EU made a huge leap forward in terms of asserting its identity on the international stage.

As put bluntly by the former director of the EU Institute for Security Studies in the eve of the ESDP launching back in 1998 “Of all European ambitions, the build up of a political Europe able to shape the international environment has in fact constituted the most conflicting and the least fruitful one since the end of 1950s. Is it stupidity or fatality? Would it be money, weapons or diplomatic and military know-how the European partners are lacking?” [2].

More than a decade later, it is worth ascertaining the way Europeans managed to answer such questions making use of the ESDP instruments. This is an endeavor which explains the need for short look into the evolution of ESDP proper.

A EUROPEAN WAY OF WAR

The trigger for the ESDP-related developments was twofold: on the one hand, the EU managed to reconcile the tensions between its civilian and military side of the house, while the disputes on the primacy of the Union and NATO as security actors have evolved into an acceptance and even support from the American side towards enhancing the European capabilities, on the other hand [3].

Without focusing too much on the evolution of ESDP/CSDP as such, the intent is to analyze whether the Union is heading into the right direction in terms of establishing a particular way of waging wars, although limited to the management of international crises for the time being.

As the 2003 first European Security Strategy ever puts it: “In almost every major intervention, military efficiency has been followed by civilian chaos” [4]. While this holds true for a basic tenet of ESDP/CSDP, i.e. the EU’s ability to draw on a broad spectrum of soft- and hard-power resources [5], civil and military ones, to tackle crises around the world, this does not necessarily infer that the Union is to assume in the future crises response operations only the a sort of “cleaning” role while NATO or various “coalitions of will” will play the game of war proper, especially when it comes to the high intensity spectrum.

2.From the European Defence Community to the ESDP/CSDP

After a short period of recovery in the aftermath of the World War II, inspired by the example of the European Coal and Steel Community (ECSC), Europe tried to establish a so called European Defence Community (EDC), with a view to allow German soldiers to operate within a European Army without having to create a German one. The refusal of the French Assembly to ratify the EDC Treaty led to the failure of this initiative in 1954.

A direct consequence of this endeavor was the establishment in 1954 of the Western European Union (WEU), integrating also West Germany.

Later on, in 1960 and 1962, France put forward the idea of a “European Union” with a common foreign and defence policy to operate on an intergovernmental basis outside the European Economic Community (EEC). This attempt was also doomed due to the EEC partners fear that the French plans were aimed at undermining both NATO and the EEC. The following decision by France in 1996 to withdraw from NATO’s integrated structure and pursue its own military and nuclear doctrine has kept the European defence and security policy at bay until 1998.

It was only through the Franco-British Declaration of December 1998 in Saint-Malo that the ESDP/CSDP process was launched, reinforced by a gradual rapprochement of France towards NATO, leading to the decision to reintegrate France into the military organization of the Alliance, as recent as in 2009.

The choice made by Europe in 1950s and 1960s to rather remain a “civil power” led to the impossibility of the EU to react properly to the crises in its backyard, i.e. the Western Balkans, in early then late 1990s.

Although the Treaty of Maastricht in 1993 meant already a shift in paradigm for the EU, the organization being now able to take gradual measures leading to a common defence, if the European Council so decides, there were almost two additional decades needed to have a ESDP/CSDP in full swing, by the entry into force of the Treaty of Lisbon in 2009.

3.The development of the ESDP/CSDP

While Europe was qualified as “an influential <<soft power>>” [6] more than ten years ago, the EU still needs to further develop the <<hard>> side of its clout. The following sections deal with the developments related to the ESDP/CSDP contributing to the build up of the operational arm of the EU’s foreign policy.

In the context of the Balkans crises in early 1990s and due to a change in attitude by the United Kingdom in late 1990s towards a need for more Europe as an international actor, as a means to rebalance the transatlantic relations and safeguard the future of the Alliance, the EU could launch the ESDP/CSDP.

The adoption of the Franco-British Declaration in December 1998 was followed swift by the goal to establish ESDP/CSDP in the EU, during the European Council in June 1999. Moreover, half a year later, in December 1999, in Helsinki, the EU made the commitment to develop credible military capabilities to respond to international crises.

The Level of Ambition (LOA) of the Union established in Helsinki especially in military terms acted as an incentive to enhance the EU capabilities needed to manage international crises. Although various authors stating that the respective LOA was merely a recognition of the need for the Europeans to be able to tackle in the future a crisis at the scope and intensity of the one in Kosovo [7], one should admit that by setting targets for the EU Member States (MS) was a significant leap forward for the realm of security and defence by itself.

While the big picture seems to have been already painted it is worth noting that the Union’s ESDP/CSDP relies on several pillars hereinafter shortly described and assessed.

An extremely important one is the institutional setup of the ESDP/CSDP. By establishing the Political and Security Committee (PSC), the EU Military Committee (EUMC) and the EU Military Staff (EUMS), the Union endowed itself with a set of instruments to monitor the international situation, speak with a harmonized voice on the international stage and make decisions when required. This institutional setting was further enhanced by the establishment of the European External Action Service (EEAS) incorporating civilian and military structures with responsibilities in the field of security and defence.

Another pillar of the ESDP/CSDP consists of its very capability development process. Whenever trying to describe this process one aspect should be crystal clear: the EU aims at developing a set of [civil and military] capabilities, based on the voluntary contributions of the Member States, in order to be able to respond to crises around the world (using civilian and military means, either separately or in a coordinated manner) and not with a view to establish a “European Army” as many still believe unfortunately. And this process is already **a good indicator on the European way of war as it stands now and as it is likely to stay at least in the short and medium run**: to tackle crises if possible before they arise (as the EU is the biggest world donor in terms of development aid this role fits rather well the organization as a credible foreign policy actor) and to use the whole available set of instruments, i.e. civilian and military ones, in order to have a comprehensive approach to crisis situations. As long as the Europeans have not developed yet neither an intricate set of military capabilities to tackle crises nor to allow them to respond to complex situations by themselves, as showed more recently by the operations in Libya in 2011, their biggest comparative advantage in front of other organizations consists in the ability to combine civilian and military power and provide an integrated response to crises.

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Not least important, one should also pay attention to the operational pillar of ESDP/CSDP. With twenty plus operations and missions around the globe the EU turned itself in a rather short period (from 2003 onwards) into an active international actor sought after by the other organizations with responsibilities in the field of international security, especially the United Nations (UN) and the African Union (AU).

And in order to have the full picture of ESDP/CSDP the various partnerships of the Union towards other organizations, such as the UN, NATO and AU, as well as the strategic partners US and Russia-type (with the other states in the BRICs [8] group following suit), should be also seen as an important part of this particular dimension of the EU establishment.

4.A European way of war?

4.1. Ascertaining ESDP/CSDP

Before answering the question proper it is worth noting the main trends in the evolution of ESDP/CSDP over the last decade or so, i.e. from 2000 onwards.

First of all, on a positive side of the overall picture one could mention: the swift growth of EU-led operations and missions, in spite of their limited scope, size or intensity, the increasing interaction between civilian and military side of the EU house in tackling crises, as well as a streamlined capability development process better harmonized with NATO's defence planning.

However, there are plenty of challenges and shortfalls: the need to envisage the possibility of taking on more demanding military operations, both in scope and terms of an increased role for the <<hard>> power; the need to improve cooperation with other international actors involved in a conflict; the need to make good the already "old" but by no means obsolete or no longer up-to-date capability shortfalls stemming both from the strategic planning process (i.e. the analysis and evaluation of MS voluntary contributions at the EU disposal against the defined set of requirements enshrined in the Requirements Catalogue 2005 - RC 05) and the operations/missions run by the organization (via a lessons identified process).

It is absolutely clear that the scope and size of most ESDP/CSDP operations and missions conducted so far has been rather limited but the main purpose of launching such endeavors lies rather in the power of the example and precedent it sets as the vivid proof of the ever closer Union at work in the sensitive realm of security and defence.

While the ESDP/CSDP has clearly contributed to the strengthening of the role of the High Representative of the Union for Foreign Affairs and Security Policy [9], it has also added a new dimension to the Common Foreign and Security Policy of the EU, beyond its role in development aid, negotiations with other economic blocks and so on.

Although the European Security Strategy in 2003 and its adapted version in 2008 played an important role in the evolution of the Union as an international actor, there seems to still be a void in terms of clear cut conditions and criteria based on which to decide when and where the EU should initiate ESDP / CSDP operations and missions.

4.2. How do the Europeans wage a war?

These all boil down to the fundamental question: is there a particular way of Europeans to wage wars (although one has to admit this is a very limited approach to the war concept) by that meaning to conduct military operations and civilian missions in response to international crises?

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A possible simple answer could be hammered out by referring to the existing set of instruments, both civilian and military ones, made available for the EU, mostly by the MS and sometimes by NATO, in order to respond to international crises. This integrated or comprehensive approach to crisis management can and in fact makes the difference between the EU and other international organizations. But the question of the scope of such endeavors and their real impact on the areas of the world in real need is still a meaningful one.

However these are just bits and pieces of an overall approach to crisis management, bearing in mind the potential of the Union (as the largest donor of development aid in the world and the second global defence spender after US). The biggest difference consists, more likely, in the way the Europeans have decided to use the huge defence allocations in order to have their flag on the international stage: rather maintaining obsolete and costly capabilities matching the Cold War era security paradigm instead of investing in modernization of their armed forces across the full spectrum of lines of development of a capability (from personnel, equipment and infrastructure to training, performance, readiness and through deployability and sustainability) [10].

But the US is now “calling for an ESDP with teeth, contradicting the argument that European defence means a weakened Atlantic alliance” [11]. Reflecting this crucial shift, the April Bucharest NATO Summit in 2008 followed up suit with the Alliance’s first explicit statement of support for European defence.

Is there any sense for the Europeans to try to match the American prowess though?

Bearing in mind the American way of war, based on state of the art technology and complex sets of doctrines and procedures, it seems that there is no or at best little way of catching up for the Europeans.

Based on the facts mentioned above when ascertaining the overall ESDP/CSDP performance it seems that neither the scope nor the nature of the EU-led interventions cannot, by no means, match the American prowess.

On the other hand, the Europeans have to always rely on the “unanimity rule” in the field of defence which not only slows down the decision making process but also means that each and every decision for the EU to act has to be also be assessed against a set of sometimes diverging interests of the various MS.

This also makes the beauty of the contest and process: once agreed upon a set of principles all the MS will then have to play from the same sheet of music although sometimes the common denominator can really be so small that the impact of the EU endeavors fades away as a meaningful actor.

Beyond capabilities and decision making proper, another aspect seems to come into play when assessing and evaluating a European way of war: the will of Europeans to assume a greater share of the burden to respond to international crises. The relatively recent American decision to support the development of European capabilities to reinforce NATO as an international security actor, corroborated to the repeated statements on the advent of a “Pacific century” at the expense of the US presence on the European soil should act as incentives for the European political masters to pay attention to the developments in the defence sector [12]. But while the US will “of necessity rebalance towards the Asia-Pacific region” [13] the old continent is recognized as the US “principal partner in seeking global and economic security, and will remain so for the foreseeable future” [14]. This comes also at a cost: the need to be a reliable partner able to provide credible capabilities, as noted by different analysts: “The shifting focus of US foreign and

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security policy as a response to evolving conventional and emerging threats lends urgency to counter these threats through European political will and military capacity” [15].

The implementation of the EU Battlegroups concept represents for sure a case in point: therefore the debate over the flexibility and usability of these multinational formations and the already famous saying “use it/them or lose it/them” as an instrument contributing to enhancing interoperability and a vehicle for transformation of the armed forces in the participating MS is more relevant than ever.

The process of professionalization of the Armed Forces in the majority of the EU MS is also a step into a improving the military instrument, provided that the resources freed up from the conscripts-based system are directed to the upgrade and development of capabilities.

Another good step into the right direction seems to be the growing sense of complementarity between NATO’s Smart Defence process and the EU’s Pooling and Sharing initiative, both aiming to make better use of the scarce defence resources in a challenging financial context.

The Treaty of Lisbon, already mentioned above, provides for a mutual defence clause in case of an aggression against the territory of an EU MS, but no real, concrete steps have been taken in this respect so far. Does this mean that the Europeans will continue to focus on those capabilities allowing them to rather react to the lower spectrum of crisis management operation or will they assume a bigger share in the realm of security and defence?

The “US strategic defence guidance” [16] sees Europe as largely peaceful requiring less US assistance than the country currently provides.

This should clearly have an impact on the way the Europeans should prepare to wage wars, i.e. to better adapt the mix of capabilities to the needs of the 21st Century defence. **A defence who’s first lines are no longer at the borders of the MS proper but in demanding and protracted operations and missions to respond to international crises in remote areas of the world.**

And to add even more to an already complicated picture, there is still another cumbersome question: the decisions to go for filling various “niche” capabilities rather than building full-spectrum military forces were the right ones? Let alone the painful outcome of the respective decisions on the local industry in various MS.

Are those authors right referring to the emergence of a genuine European pillar of NATO or is it merely a speculation [17]?

4.3. Looking into the future

The experience of the operations in Libya in 2011 proved that America is prepared to step back and rather assume a “leading from behind” role while the Europeans are to take on greater responsibilities.

The list of necessary improvements has not changed dramatically since late 1990s when the late Western European Union (WEU) conducted the audit of forces and capabilities: command and control (C2), intelligence, surveillance and reconnaissance (ISR), strategic transport and air-to-air refueling, precision guided munitions (PGM) [18].

The legitimate question continues then to be out there: what will Europe do to become more relevant in the security and defence realm?

As the US actually admit that Europeans continue to be America’s best allies, at least at declaratory level within the US “strategic defence guidance” there may be some sense of relaxation on the “old continent”.

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However, the best solutions for Europe seems to be, in the short and medium run at least, to make meaningful contributions within NATO and by that to demonstrate that the Alliance has a role to play in the US security (hence a need for the latter to strengthen the Alliance), while enhancing the mix of civil and military instruments to be deployed in the management of crises around the world. The jury is still out whether the balance is to be tipped in the long run to a <<hard>> power Europe at the expense of merely <<soft>> one.

5. Conclusions

Defining a set of principles or identifying issues underpinning the development of a specific area seems to play an important role in advancing on the path to progress.

If there is also some structural approach in the respective proposals and meaningful solutions to overcome the identified challenges and shortfalls then the goal of such an endeavor may have been reached.

The Europeans have clearly benefited from NATO's and especially US presence over the last 60 years or so, both economic- and security-wise. The end of the bipolar world in early 1990s gave rise to a unipolar [19] and nowadays multipolar world where the EU wanted to have its share.

Although for much of the first decade after the demise of the Soviet Union and during the Western Balkans chain reaction crises the Europeans rather paid lip service and were reactive in nature, there was a shift in paradigm in 1998, once the French and British leadership decided to back up the establishment of a genuine ESDP/CSDP.

The set of structures and mechanisms, backed up by capabilities and leading to more than 20 operations and missions across most continents are clear signs of EU's intent to assert its identity on the international stage in the realm of security and defence.

The set of instruments at its disposal, civil and military, interlinked in a comprehensive approach to crisis management, is an important feature of the EU as an international actor.

In spite of the list of recognized shortfalls and challenges flawing ESDP/CSDP, the biggest weakness of Europe seems to consist in its limited capacity to agree upon set of universal principles to describe the strategic vision to underpin its international actions in terms of criteria to lead to the launching of operations and missions. And this goes in hand with the indecision to start implementing the provisions of the basic treaties, such as the possibility to go for a permanent structured cooperation as a step to a definition of a genuine common defence policy leading in time to a common defence, if the European Council so decides.

But of course the art here would be to devise such a process in a way that strengthens ESDP/CSDP, on the one hand, while assuming a significant share within NATO and convincing the US that Europe is serious about security and defence, hence it is a credible and reliable partner.

As rightly pointed out some years ago and still valid today "the EU and NATO are different organizations with different purposes. The EU needs a defence capability because it has, on some issues, a common foreign policy (...) NATO serves a different purpose to the EU – which is to promote transatlantic cooperation on security policy and military affairs (...) The ESDP is needed for when the Alliance as a whole is not engaged" [20].

Hopefully, the initial lukewarm support to the establishment of a ESDP, embodied in the so called 3 Ds policy [21], i.e. decoupling / de-linking, discrimination, duplication, expressed by the then US secretary of state, Madeleine Albright, in 1998, shortly after

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Saint-Malo moment, has made room for more Europe in the field of security and defence and seems to be plenty of space on the international stage for both the EU and NATO.

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LIFE CYCLE MANAGEMENT

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Abstract:

The necessity for a methodical, integrated, and comprehensive approach to system acquisition became obvious during last 20 years. Consequently it was important to develop an exhaustive method which can explain the life cycle needs of a system, from the early beginning until the end, during its life. Lacking this, the product (or systems) performance through life can not be achieved at the expected level. Without a broad understanding of all aspects of life cycle component, a system in use involves spending more money after the acquisition phase than it was intended. Therefore, I think a summary of the concept of Life Cycle Management only provides some clarifications on issues that often are not taken into account when a product is acquired.

Key words: *life cycle management, life cycle cost, process, process planning, concept, NATO.*

1.Introduction

To better understand the life cycle management (LCM) it is necessary to point out what a life cycle of a product means.

Product life cycle (PLC) refers to the average lifespan of a product. The most used comparison is the analogy with biology when products, like living creature, are born, grow, mature and then get older. The whole product life cycle, from project and development to its final withdrawal, includes the following phases: raw material acquisition, manufacturing, packaging, distribution, use, recycling, and product recall from the market, or eventually refurbishing (which can generate another life cycle process).

One of lifecycle definition that refers to all the successive phases of mentioned above concept is : *"The life cycle includes the following phases: conceptualization, development of project ideas, study engineering, process planning, manufacturing, operation, maintenance (repair) and withdrawal "*. [1]

The standard ISO 14040:2006 describes the principles and framework for life cycle concept and the general definition of the product life cycle which is : *life cycle is "consecutive and interlinked stages of a system-product, from raw material acquisition or generation of natural resources to post-use "*. [2]

During life cycle analysis, specialists can identify all potential impact regarding the product, compare one or more aspects of specific products or processes, establish baselines for further exploration, and improve permanently the expectation of the end user. Inside life cycle concept, we can use different tools for the decision-making process. These tools are generally used in conjunction with other tools such as risk assessment, environmental impact assessment etc.

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Product life cycle is highly dependent on the life cycle stages of the system. A life cycle of a product may consist of several phases: 1) concept / vision, 2) feasibility, 3) design / development, 4) production, 5) phasing in use. [3]

In a speech-focused approach, product life cycle stages are, design, engineering, manufacturing, and service. (Fig. 1. **Life cycle**)

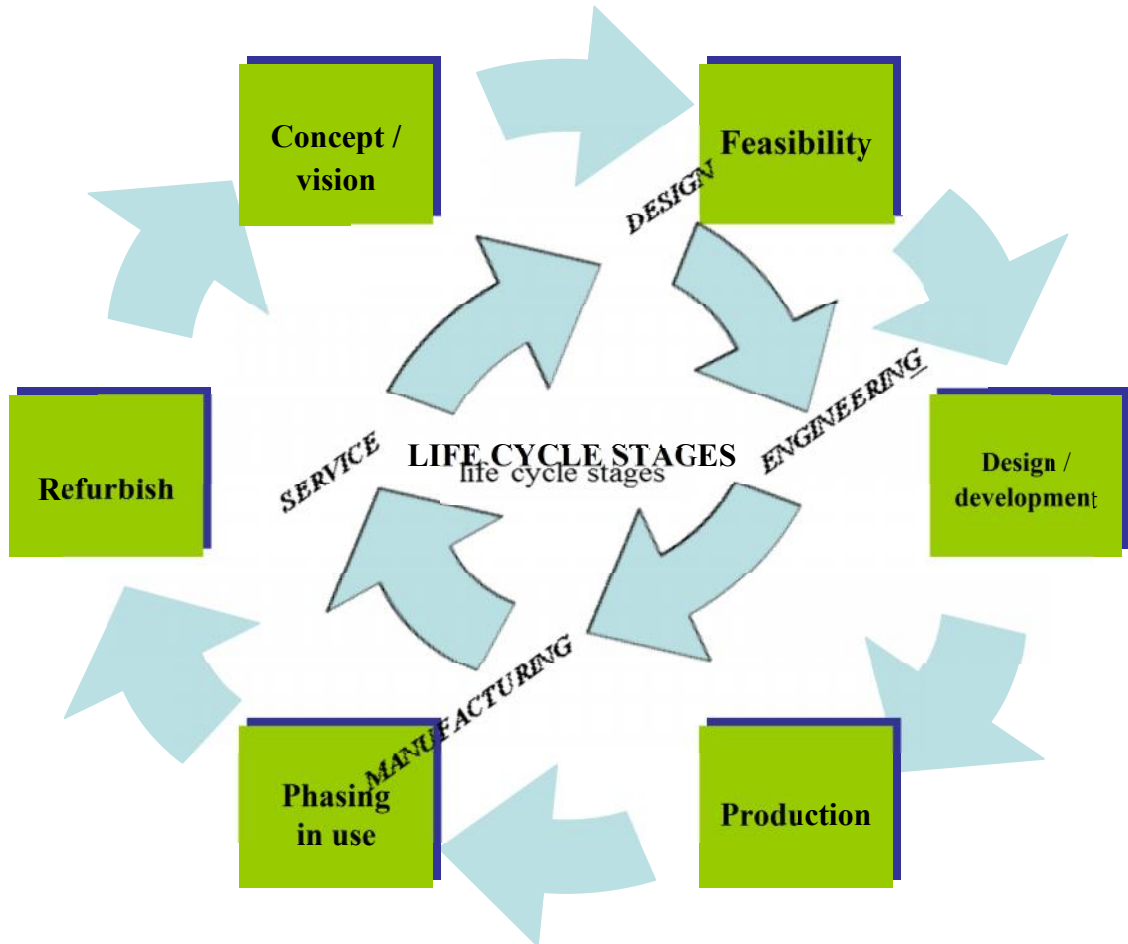


Fig. 1. Life cycle stages

Also in NATO, military specialists conclude that life cycle stages should be divided, estimated, and analyzed separately. Through the AAP-48 Life Cycle Stages and Processes [4], there has been adopted ISO 15288 System Engineering – System Life Cycle Process [5] for dividing the life cycle stages, as presented in **Figure 2**.

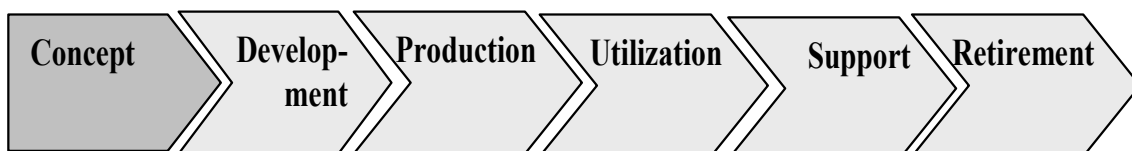


Fig. 2: Life cycle stages

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The Life Cycle analysis should be taking into account from the early stages of developing a product, as the greatest opportunities to reduce life cycle costs (LCC) usually occur during the early phases of the programme (as shown in **Figure 3**).

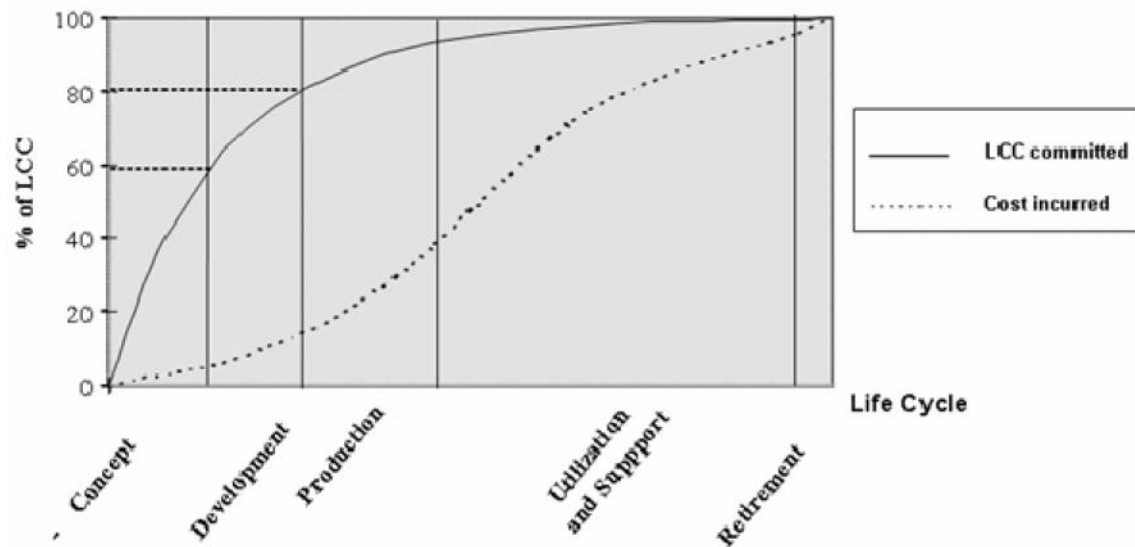


Fig. 3: Traditional LCC committed Vs incurred cost curve

For a better understanding I consider necessary that all these stages should be explained as follows [6]:

Concept Stage The concept stage starts after the decision to fill a capability gap with a materiel solution and ends with the requirements specification for this materiel solution.

Development Stage The development stage is executed to develop a system of interest that meets the user requirements and can be produced, tested, evaluated, operated, supported and retired.

Production Stage The production stage is executed to produce or manufacture the product, to test the product and to produce related supporting and enabling systems as needed.

Utilisation Stage The utilisation stage is executed to operate the product at the intended operational sites, to deliver the required services with continued operational and cost effectiveness.

Support Stage The support stage is executed to provide logistics, maintenance, and support services that enable the continued system of interest in operational and sustainable service. The support stage is completed with the retirement of the system of interest and termination of support services.

Retirement Stage The retirement stage provides for the removal of a system of interest and related operational and support services and to operate and support the retirement system itself. This stage begins when a system of interest is taken out of service. [7]

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2.What is Product Life Cycle Management or PLM ?

Product Lifecycle Management as a tool for managing the entire life cycle process, could be defined and understood in various ways. Numerous authorities deliver their own interpretation of PLM, several definition are listed below :

“PLM is a strategic business approach that applies a consistent set of business solutions in support of the collaborative creation, management, dissemination, and use of product definition information across the extended enterprise, and spanning from product concept to end of life-integrating people, processes, business systems, and information. PLM forms the product information backbone for a company and its extended enterprise.” [7]

“Product life cycle management or PLM is an all-encompassing approach for innovation, new product development and introduction (NPDI) and product information management from ideation to end of life. PLM Systems as an enabling technology for PLM integrate people, data, processes, and business systems and provide a product information backbone for companies and their extended enterprise.” [8]

“The core of PLM (product life cycle management) is in the creations and central management of all product data and the technology used to access this information and knowledge. PLM as a discipline emerged from tools such as CAD, CAM and PDM, but can be viewed as the integration of these tools with methods, people and the processes through all stages of a product's life.” [9]

"Product life cycle management is the process of managing product-related design, production, and maintenance information. PLM may also serve as the central repository for secondary information, such as vendor application notes, catalogs, customer feedback, marketing plans, archived project schedules, and other information acquired over the product's life." [1] [10]

“It is important to note that PLM is not a definition of a piece, or pieces, of technology. It is a definition of a business approach to solving the problem of managing the complete set of product definition information-creating that information, managing it through its life, and disseminating and using it throughout the lifecycle of the product. PLM is not just a technology, but is an approach in which processes are as important, or more important than data. ” [8]

“PLM or Product Life cycle Management is a process or system used to manage the data and design process associated with the life of a product from its conception and envisioning through its manufacture, to its retirement and disposal. PLM manages data, people, business processes, manufacturing processes, and anything else pertaining to a product. A PLM system acts as a central information hub for everyone associated with a given product, so a well-managed PLM system can streamline product development and facilitate easier communication among those working on/with a product. ” [11]

The essential part of PLM (product lifecycle management) is in the conceptions and central management of all product data and the technology used to access this information and knowledge. PLM as a separate discipline occurred from tools such as CAD (Computer Aided Design), CAM (Computer Aided Manufacturing) and PDM (Product Data Management), but can be observed as the combination of these tools with procedures, people and the methods through all stages of a product's life. The entire process consists into a mix between software technology and a business strategy. [12]

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The stages described above showed Fig. 4 in into another manner.

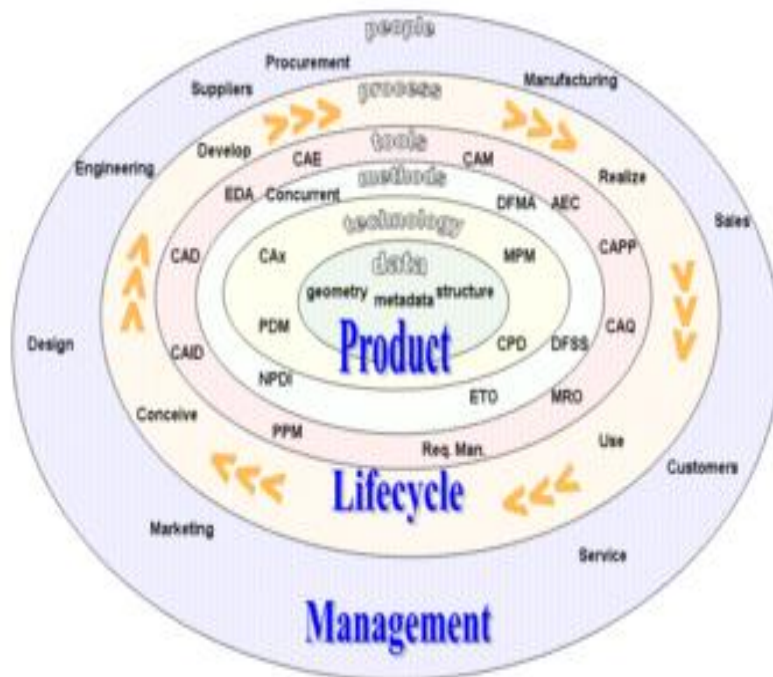


Fig. 4 Product Lifecycle Management

This figure tries to present the reality of PLM, which is more complex; people and departments cannot perform their tasks in seclusion and one activity cannot simply finish and the next activity start. [13]

3.Life Cycle Management in NATO

In the military area, especially in NATO, the life cycle approach was brought to attention at the Conference of National Armaments Directors (CNAD) in 2000 [14]. Then the Armaments Directors decided that the life cycle approach should be part of the work of the armaments community in NATO. In 2003, after CNAD reorganization was formed “Life Cycle Management Group” in the CNAD. The principal action of this group was to bring the concept of System Life Cycle Management to NATO. For that, the group invited the North Atlantic Council to support a NATO Policy for System Life Cycle Management. The core of this policy states that ISO/IEC 15288 should become the basis for the improvement of the life cycle approach in NATO capability development. The purpose of this approach consists of a better understanding of the life cycle costs of a system in the decision making process. [15]

This Standard used ISO/IEC TR 19760:2003 that provides guidance for application of the International Standard ISO/IEC 15288 *Systems Engineering - System life cycle processes* in regard to systems and projects irrespective of size and type [16].

The challenge for this initiative is to establish a unitary LCM in NATO. LCM provides a methodology capable to be tailored to specific programs and needs, adapted to

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NATO or our nation, in order to deliver complex defense interoperable systems that support required capabilities. Achieving NATO interoperability is a complex challenge in itself. A common methodology, like LCM, facilitates nations being able to work multinational programs. LCM offers the tools and process architecture to deliver defense systems able to meet through life capability requirements.

The NATO Policy on SLCM states: *“the aim of Systems Life Cycle Management is to optimize defense capabilities taking into account performance, cost, schedule, quality, operational environments, integrated logistic support, and obsolescence over the whole life cycle”*[17]. NATO has adopted the System Life Cycle Management (SLCM) approach following the approval by the North Atlantic Council of a NATO Policy for SLCM in January 2006. [18]

The current work in the CNAD is to provide the SLCM implementation “tools” in the form of guidance documents that link acquisition requirements to the system life cycle. In this respect on 26 March 2012 was finished STANAG 4728 (Edition 1) (Ratification Draft 1) – System Life Cycle Management (SLCM) and nations are invited to examine their ratification of the STANAG and, if they have not already done so, advise the NSA of their intention regarding its implementation.[²] [19]Also in February 2007 were promulgated NATO System Life Cycle Stages and Processes (AAP 48 Edition 1). All this activity it is also supported by industrial experts through the NATO Industrial Advisory Group, who advise on industrial best practices and experience in SLCM.

AAP-48 needs to be complemented by additional document frameworks (covering for example management, quality, systems engineering), which serve as operational enablers. (Fig. 5) [5]

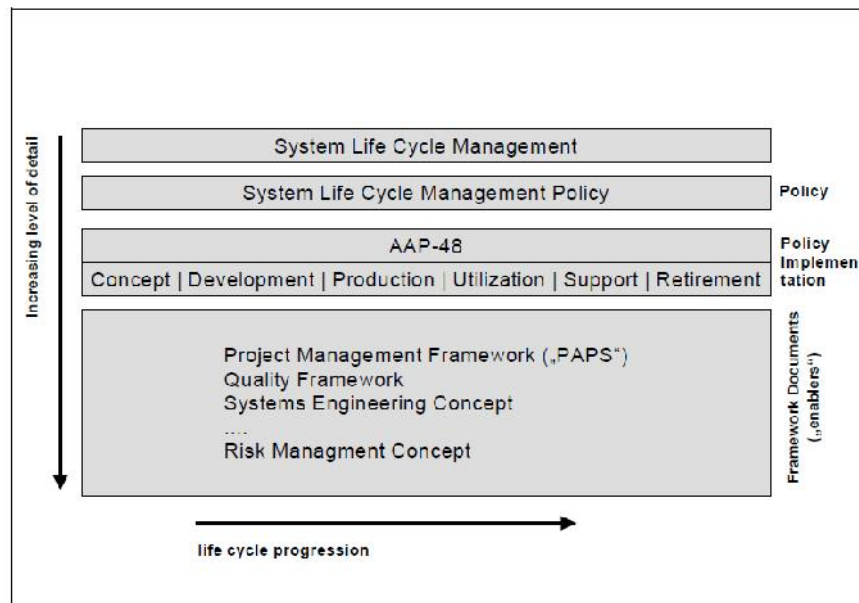


Fig. 5 Systems Engineering – System Life Cycle Processes

The purpose of AAP-48 is to provide guidance for putting into practice the SLCM, which was issued to diminish risk, decrease acquisition times, and to categorize, quantify and control Life Cycle Cost, from the initial possible opportunity. SLCM will assure that the processes used through projects are reliable, coherent, and that there is effective distribution and coordination of resources, information, and technologies. In

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addition, SLCM used to achieve the identified stakeholders' requirements and support organizations of attaining customer satisfaction. (Fig. 6) [5]

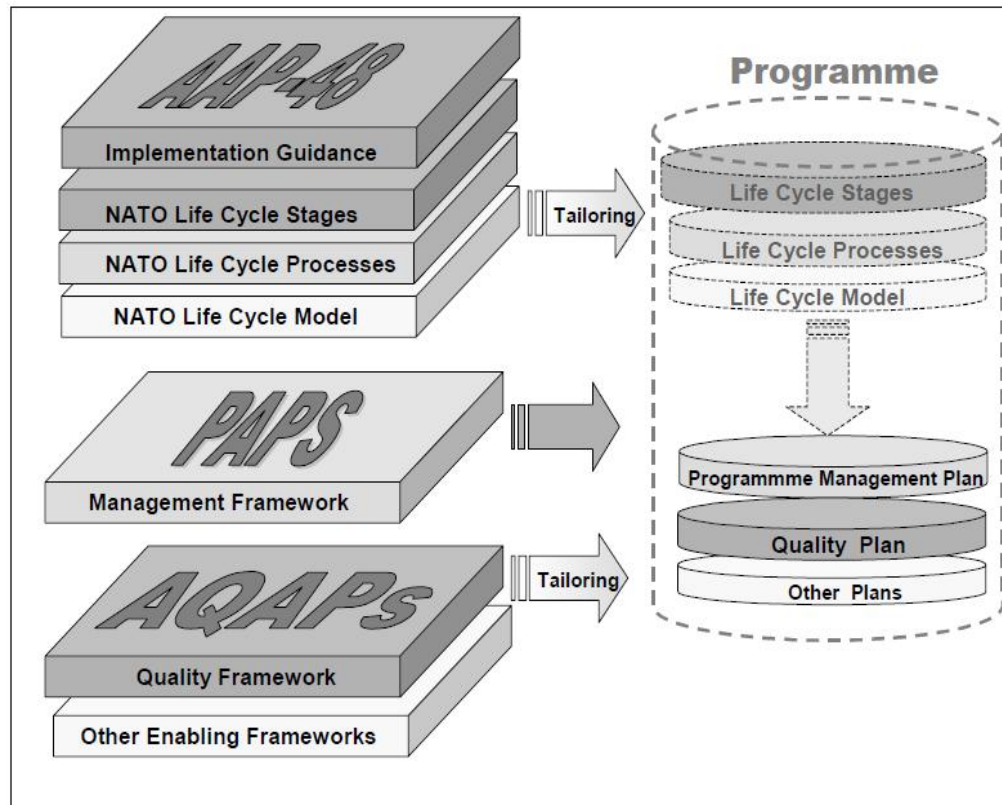


Fig. 6 Utilizing the conceptual framework of SLCM

In accordance with AAP-48, System Life Cycle Management Process assures implemented Life Cycle Management Processes are operational, effective and in accordance with policies and procedures defined by NATO Bodies and NATO Nations. Consequently, Life Cycle Management should:

- Identify the necessary System Life Cycle processes;
- Identify tailoring methods and their acceptance criteria;
- Establish assessment methods/measurements;
- Execute process surveillance and register the measured result;
- Execute trend analysis and propose necessary improvement of the processes.
- Measure process effectiveness

For this is necessary, some inputs consist of:

- Enterprise management decision to implement Life Cycle Management.
- Result from the Enterprise Environmental Management Process.

All this it is only to emphasis the complexity of Life Cycle Management Process without going into details.

4. Conclusion

Life Cycle Management will provide a “whole”, joint, and mutual view of the aims of the project, particularly - what and who is it for - and thus guarantee broad purchaser satisfaction. This means that within Life Cycle Management, the purposes of each phase in the life cycle will be defined contributing to that overall accomplishment

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and how they need to interrelate. This could be done after a complete and careful analysis which consists of:

- A wide and strong ability for mission analysis which can look forward in time to recognize and prioritize needs before they become operational problems.
- Flawless long-term visions of the approach in which we expect our product develop.
- A strong capability for investment analysis which can ensure rigorous and neutral treatment of substitute strategies for filling mission need.

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TYPICAL COGNITIVE ERRORS IN INFORMATION PROCESSING: A THEORETHICAL APPROACH

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Abstract:

The cognitive error represents the human tendency of drawing incorrect conclusions in certain circumstances, based on cognitive factors rather than on what is clear and rational. This is a form of a “cognitive shortcut”, often based on the “finger rule” and it includes errors in the statistic judgment, social attribution and memory. The cognitive errors are often present in the human thinking and they are studied by the cognitive science, social psychology, economic psychology etc. These errors are frequently caused by heuristic approaches, logical simplifications and decision rules, used in solving complex problems. When these simple decision approaches are employed in inappropriate situations, they lead to systematic and foreseeable mental errors, incorrect estimates and failed evaluations. Cognitive errors do not appear due to a pathological aspect but they are systematic errors of logic.

Key words: human cognitive system, information processing, cognitive schemes, cognitive errors, heuristic

1. Introduction

How are decisions made? How could we be sure that we understood correctly and took into consideration all factors before making a decision? What are our decisions based on when we do not have sufficient information or when there is too much information? Do you think you are a fair person? Do you trust your own judgment? Are you 100% rational? Do you think you can be easily manipulated? How is social perception formed? Is it possible that we are “prewired” in order to make systematic judgment mistakes?

Cognitive science appeared a few decades ago as a interdisciplinary domain of research, dedicated to the study of intelligence and intelligent systems, either natural or artificial. Psychology, neuroscience, artificial intelligence, linguistics, philosophy and anthropology interact within the framework of cognitive science, tending towards an integrated theory of the brain and cognition. Lately, however, there reappears under the microscope, in the cognitivist theory, the question “what is cognition?”

2. Brief history of cognitive science

2.1 The main idea of cognitive science in information processing

In traditional cognitivism, the cognitive system was separated from the sensory-motor aspects or from the context and the accent was placed on cognitive representations and processes that we use to operate on them. This approach can be easily understood if we

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think that the cognitive paradigm appeared as a reaction to behaviorism and, in a way, it returned to the philosophical traditions that emphasized reason.

The main idea of cognitive science was that the information processing obeys syntactic, logical and universal mathematical laws. The social context and the emotions are not essential, the knowledge model is an algorithmic machine, epistemology and knowledge being understood as aspects of "Human information processing" (Brier, S., 1992)^[1].

Thus, according to Lindsay and Norman, (Lindsay, P., Norman, D.A., 1977)^[2], the principles of information processing are relevant for all systems that use information, including the human mind. These general principles must be applied to all systems that manipulate, transform, compare and find information. But such an approach raises problems and has its redoubtable detractors. For examples, Searle Searle (Searle, J., 1989)^[3] believes that the common link between the human and the electronic (computer) information processing does not consist, as it was accredited, in the fact that both follow some rules. The machines act according to some causalities, but only conscious human beings can choose to obey or not the rules. According to Soren (cited in Brier, 1992), knowledge is a much more complex "thing" or process than a simple product of the information process.

2.2 New ways in information processing

The last years of research in cognitive psychology led us to the idea of a cognitive system in which the emotions and social aspects are to be found when we process the information, thus towards an interactive processing and not only towards some abstract logical capacities (Riegler, 2002)^[4]. While taking the form of a paradigm, in the cognitive psychology there appeared more and more data showing that, in fact, cognition cannot be separated from other aspects: the studies emphasized the influence of the context, emotions, of the action or of the perception over the manifestation of the varied cognitive functions considered as being superior (see studies regarding the dependence of memory on context, Godden & Baddeley, 1975^[5], or the affective states, Bower, 1981)^[6]. Important etological research on the relation between reality, perception and information showed that perception is not a process in which information is overtaken mechanically but, on the contrary, it needs motivation. People's perceptions and the way they process information are strongly influenced by education, experience, cultural values, job requirements, organizational rules as well as by the specific of the received information. All these form "lenses" (models, patterns, mental fixations or "analytic presuppositions"), through which the individuals relate themselves to objective reality but which can also distort perceptions, offering nothing more than a (subjective) representation of what people think they know about the exterior world. As Hanson N.R.^[7], Kuhn T.^[8] and Popper K.R.^[9] wrote, the observations are always interpreted within the framework of pre-requisite knowledge. Kuhn^[10] stated that the history of science provides numerous examples related to the fact that "what a man sees depends on what he is looking at and also on the visual-conceptual experience that taught him what to see" (cited Malhotra, 1994)^[11]. Knowing information is controlled by interests that partially derive from the nature of the perceptual apparatus and also from the innate release mechanisms found in our body (Brier, S., 1992)^[12]. According to Fransman, the information can be defined as data regarding the state of the surrounding world and possible consequences of the events taking place in the surrounding world, while knowledge can be defined as convictions, beliefs. Convictions are influenced by the information processed by the individual, but they are not entirely determined by it; there is

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place for intuition, creativity and error (Fransman M. 1994)^[13]. Lave J. amplifies this observation, stating that knowledge always undergoes a process of construction and transformation while being used (Lave, J., 1994)^[14].

3. Theoretical aspects of cognitive errors

3.1 Strategies to simplify information processing as limits of the cognitive system

In a hipercomplex world, the decision maker, through his cognitive system, has limited capacity of representation and computation (functioning on the principle of the economy of resources), he depends on shortcuts in order to process information and he creates a simplified mental representation of the variants among which he has to choose. Although the subject behaves rationally within this simplified mental model, a series of cognitive factors can influence the calculation of possibilities (the cognitive scheme, the degree of proto-normality, accessibility from memory to relevant knowledge, anchoring and rationalization)(M. Miclea, 2004)^[15].

Solving problems is a result of interactive operation of all the components of the cognitive system. According to their vector, the resolutive strategies are prospective and retrospective and according to the certitude of obtaining the solution, we use algorithmic and heuristic procedures. These heuristics, either general or specific, allow us to walk through life and they also lead to making consistent and systematic mistakes, being dependent on the domain of knowledge (M. Miclea, 2004)^[16].

The attempt to "adjust" the reality data to certain mental patterns, generates a special category of errors, called cognitive errors, extremely varied as manifestation forms and with major repercussions on the analytical process and obviously on the problem solving and decision making processes. In essence, these are impaired judgment caused by our own strategies of simplifying the processing of information, which can affect, in different degrees, the analysis of information, the evaluation of the arguments, the understanding of the causative relations, the estimates of alternatives, the evaluation of the variants of action and it is difficult to get over them even when we are conscious about them (Heuer, R.J., 1999)^[17].

3.2 The cognitive error, the product of information processing with implications in the decision-making process

The notion of cognitive error was introduced by Amos Tversky and Daniel Kahneman in 1972 (Kahneman, D., Tversky, A., 1972)^[18]. Together with their colleagues, they demonstrated many replicable ways in which judgment and human decision are different from the theory of "the rational choice". Daniel Kahneman, specialist in cognition and a pioneer of behavioural economics, was awarded the Nobel Prize for Economy, in 2002, for his papers which showed that the man is not a "rational actor", as many specialists in economy supported, but he is the subject to numerous pitfalls of intuition. He studied for over four decades the decision mechanisms of the human brain and he identified numerous cognitive errors which influence our decisions without us noticing it. Kahneman (Kahneman, D., 2002)^[19] sustains that human thinking is controlled by two systems: he calls the first system "thinking fast" – it is conscious, intuitive and it does not require volutary effort or control, while the second, "thinking slow", is conscious, uses deductive reasoning and requires a lot of effort. In order to observe that a person is angry,

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there is no need for a conscious effort as this can be noticed instantly and involuntary, exemplifying the fast thinking, typical for the first system. Instead, in order to solve a problem such as a multiplication of two numbers, there is need for a conscious focus of the attention towards a voluntary effort, without which the answer cannot be obtained. This is an example of the second system. However, "thinking fast" presents certain system errors, cognitive errors which, many times, lead to making the wrong decisions (Kahneman, D., Tversky, A., 1979)^[20]. In his most recent book, *Thinking Fast and Slow*, Dr. Daniel Kahneman enumerates a few of these thinking errors, hoping that, by clarifying them, he can help the others identify and understand better their own decisions (Kahneman, D., 2002)^[21]. Some cognitive errors mentioned in studies and research (AL Zacharakis, DA Shepherd, 2001; Jack B. Soll, 1996)^[22] are: "the overconfidence bias" - the tendency to trust yourself excessively, "the planning fallacy" - the error of estimation in planning, "the availability bias" - tendency to judge on the basis of what comes to our mind and "the anchor effect" - the anchoring effect.

3.3 The perspective of social cognition in information processing

From the perspective of the social cognition, the functioning of the cognitive schemes includes picking up pieces of information, comparing and evaluation of their value and credibility, their integration and the formulation (through interferences) of some social judgments. (Ceașu, F., 2010)^[23].

In the process of acquiring knowledge, most of the people follow the law of the minimum effort. They use heuristic strategies in order to obtain information which should be simultaneously: 1) as simple and as easily to acquire as possible; 2) of the greatest possible accuracy and time reliability.

The main types of heuristics used and seen from this perspective would be (Baron, R. et al., 1998)^[24]:

a) the heuristic of representativity or of the judgment by similarity: the reasoning used is that according to which the more an individual resembles a typical member (prototype) of a group, the bigger the probability for him to belong to that certain group.

b) another mechanism is the one of availability or accessibility heuristic, which postulates the following idea: the faster and easier something comes to our mind, the more we have the tendency to consider it as being frequent and important. The recently used schemes influence in a decisive way the new knowledge that we receive (Dube-Rioux, L. and Russo, J. E, 1988)^[25] This knowledge falls to the ground, on a primary layer prepared to absorb the knowledge (priming effect). The phenomenon is dealt with in the so-called "medicine students' syndrome: when they learn the disease symptoms, they get quickly to believe that they suffer from many of them".

c) the effects of the false consensus: the individuals have the tendency to consider themselves (as behaviour) much more alike with their peers than they really are. For example, the students from American universities who smoke believe that there are more smokers than there really are.

d) there is, through simetry, the effect of false uniqueness: some people like to believe that they are unique, especially in what concerns certain desirable qualities (intelligence).

e) the frame or framework effect consists in the fact that our misconceptions and appreciations referring to different objectives, persons and institutions, are greatly affected by the way in which information about them is presented. Moreover, when the positive ones are brought forward, the evaluations will be optimistic.

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f) the anchoring effect (W., Bevan, JF Pritchard, 1963)^[26]: in our appreciative judgment the benchmark from which we start also counts. For example, real estate agents are significantly influenced, in the negotiation of house prices, by the price that is initially required. Once we establish some anchoring points in some issue, people's estimates tend to be connected, although something like this should not happen. "Anchoring" encourages the application of the principle of minimum thinking effort, but this principle generates cognitive costs (errors).

g) the mechanisms of mental simulation, functioning according to the law of minimum effort, are potential sources of error in appreciation. When we are talking about unwanted events, people tend to simulate mental alternatives: "what else could he have done?" or "how could he have avoided that event?" This is counterfactual thinking. We regret not only having done something but also what we have not done. .

h) mental simulation can be a source of error through what can be called false difference of chances and suspicion involvement. When they come across less likely events, the individuals are tempted to consider their chances of appearing in an absolute and not relative manner. If the number of events is smaller, the individuals become suspicious and do not accept that they were produced by chance; on the contrary, if the number of events is bigger, then their occurrence by chance is accepted. New research (Baron et al., 1998)^[27] confirm the older idea that, beyond the particular circumstances, there are two fundamental ways of information processing: the rational way and the intuitive way. The first analyzes deliberately and follows the rules of logic, while the second is spontaneous, automatic, holistic and it is based on simple heuristics, developed through concrete experience.

i) another process through which we form our impressions about the others involves the understanding of their behaviour. The attribution is related to our intuitive attempts to deduct the causes of a person's behaviour, namely the attempt to deduct when someone's action must be attributed to personality or situational causes (for example money, social norms, threats). The fundamental error of attribution appears when we underestimate the situational influences over our behaviour and we believe that a certain personal characteristic of the individual is responsible for this.

4. Conclusion

Some errors are specific to some groups / "herd behaviour" (bandwagon effect – the tendency to do or believe some things just because many other people do or believe the same) and others function at individual level ("confirmation error", where the subject chose only the proofs and arguments that confirmed his belief). Some errors affect the decision-making process, while others, like the illusory correlation, affect judgment. The illusory correlation is an incorrect belief that there is a connection between a cause and a certain effect (Martin Hilbert, 2012)^[28]. Another group of errors affect memory, such as the consistency error. While some errors show the motivation of the subject, for example the desire to have a self-positive image, taking to the egocentric error and avoiding the unpleasant cognitive dissonance, others make people ignore the relevant information, neglect the probability and they can affect the decision or judgment due to the irrelevant information. Subjective validation (an error of probability and belief) is in close relation with the concept of cognitive dissonance – it refers to the tendency of searching and interpreting some information in a way which confirms own misconceptions and stances,

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even if they are not true. The individuals look for new proofs, interpret them wrongly or take information from memory in a selective way.

Many social institutions count on individuals to make rational judgment. For example, the jury in court have to ignore the attractiveness of the one who is accused. Numerous errors proved by different psychological experiments showed that the man can often make such mistakes. Only by understanding our weak points, can we be prepared to identify thinking errors, despite the fact that we cannot avoid them forever. "In order to counteract the errors of the «thinking fast» system, there is, in principle, a simple solution: the recognition of the signs which suggest that we are in a delicate situation, slowing down the decision-making process and appealing to «thinking slow»", suggests Kahneman (Kahneman, D., 2002)^[22].

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CURRENT STRATEGIES TO INHANCE THE LEADERSHIP STYLE IN THE MILITARY

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Land Forces

Abstract:

The role of leadership in the military is gaining increasing recognition. Just as society looks for a leader to define its purpose and lead it forward, military is concerned with the selection and development of people who can successfully lead the military organization through an environment characterized by uncertainty, global turbulence, and organizational instability.

1. Introduction

It's an age-old question: Are we influenced more by nature or nurture? Applied to leadership, the question becomes: Are great leaders born or made? It's one of the most frequently asked questions in leadership development.

Let's start with the definition of "leader": "working with and through others to achieve objectives." Given this definition, anyone in a position whose achievement requires support from others can play the role of a leader. I like this definition because it supports the philosophy of "leadership at all levels," which is so critical at present.

However, leadership styles could and should be permanently develop according to the time being.

Here are some of the strategies which could bring more effectiveness in the art of leadership.

2. Self Esteem

When you make someone feel important, you gain their willingness to work for you.

Here are some techniques to improve self esteem:

- Ask their advice. Even though you may feel you have the answers to a problem, ask for their help. This makes the employee feel that you think their opinion is worth considering.
- Remember the name of the person you are dealing with, and use it often in your conversation. Remember the most important thing to a person is their name.

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- Discuss subjects; but do not argue about them. Arguing infers that you think the other person is wrong, therefore bringing the person down, and hurting their self esteem.
- Sincerely compliment them occasionally. You can surely find something to praise someone about.
- Be more willing to listen than to talk. Pay close attention, and show interest in what they are saying.
- Be interested in the person. Keep people well informed on all matters that may concern them.
- Show respect for a person's knowledge by repeating a remark of theirs that will reflect favorably on them.

3. Become a Good Listener

Generally people do not know how to be good listeners. People usually only remember about half of the information they are told. Below are some points on becoming a good listener.

- Be ready to listen. Stay alert in your posture and in your facial expression.
- Try to avoid distractions.
- Eliminate bias in your thoughts about a person, otherwise you will never comprehend what they are saying.
- To ward off boredom, try to stay ahead of the speaker by anticipating what she may say next.
- Try to group thoughts or points to make it easier to remember.
- Look for key words in what the person is saying. It makes recalling the conversation easier.

4. Planning

Planning is one of the key management tools. Certainly all of our organizations have short, and long range plans. Through planning, we decide a course of action to achieve goals and accomplish objectives. Planning prepares us for how to perform in the event certain things happen.

Planning requires getting facts and data. The more information you can gather together, the better equipped you will be to make decisions.

Policies and procedures are either originated or examined and brought up-to-date when planning.

Objectives are also reviewed when a planning process is implemented.

Planning helps to unify an organization by getting others involved.

Change is accepted more easily when the plans are known throughout the organization.

Planning brings attention to dangers or pitfalls. If the planning is thorough, disadvantage as well as advantages will be uncovered.

Decision making skills of the staff can be strengthened, through proper planning. For instance, if several alternatives could be taken to solve a problem, a decision must be made as to which one will be carried out. Ask for thoughts and comments from the staff.

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5. Motivating

People at all levels must feel they are needed. You cannot motivate a person if they do not feel essential to the process. Ways to make a person feel needed:

- Keep them informed.
- Challenge a person, thus allowing them to grow.
- Make them feel proud of the job they are doing.
- Praise the person. Let them know they are doing a good job.
- Learn what people want from their jobs. Individual or team recognition, routine tasks or constant challenges...know someone's likes and dislikes in order to be able to motivate them.
- Recognition is more important to some people than salary. People want to be given credit for a job well done.
- Make mention of special accomplishments of an employee (or even their family) even if it is an accomplishment outside of work.
- Communication is the key to motivating. Listening is an important factor.
- People like to know what is going on, and what to expect.
- Keep them informed.
- Have regular meetings to exchange thoughts and take the opportunity to advise them of what is going on around the company, with customers and in the industry.
- Show enthusiasm about your work and that will help to set a work ethic thus motivating others.
- Set goals for those you supervise. Also, help them achieve the goals by giving them the opportunity to get things done. Do not set unrealistic goals.

6. Disciplining

The art of dealing with people when they fail to do their job or they behave abnormally. The better you know an individual, the better job you can do of disciplining him. With some people, you need to be firm, or even demanding. Others, just a hint of a suggestion for change is all that is necessary.

Here are a few strategies on making one of the most distasteful acts of supervision a little more palatable:

- Try to discuss the situation as soon as possible after the incident. That way, the situation is fresh on everyone's mind.
- Usually, time only makes matters appear worse.
- Talk to the individual in private. Try not to let other people see or hear you.
- Don't embarrass the person.
- Try to be friendly, and listen to the person tell their side of the story first.
- Weigh and decide the facts before you constructively discipline.
- Do not nag or harp on the subject over and over again. This will only cause irritation.
- Do not argue.
- Control your emotions and try to control the other persons'.
- Try to have the person see the seriousness of the situation, and why they should change their attitude or performance.

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- Attempt to determine the reaction to your discipline.
- See if the individual feels they are being treated fairly.
- Try to get a commitment from them to do better in the future.

7. HANDLING PERSONALITY PROBLEMS - a very touchy situation.

People with personality problems are that way because of their strong emotive response to situations.

Some people feel that everybody is against them. Some may be over-aggressive or even hostile, while others may be very submissive or dependent.

How you handle such people determines whether these individuals become human relations problems of a higher level.

Here are some things to do and not to do when dealing with such situations:

- Avoid becoming involved on an emotional level. This does not mean to ignore the individual, but rather to help them by doing all that you are responsible to do.
- Emotional problems should be left to professional counseling.
- Delicately recommend professional help.
- Do not allow yourself, and discourage others from becoming emotionally involved with the person. This becomes very time consuming, and generally ends up affecting several people and has no positive effect.
- Remember, misery loves company therefore, do not become entangled in the problem.
- Try to help the person with a particularly strong personality trait by teaming them with compatible individuals. This may mean putting two aggressive people together, rather than a passive and a bold one.
- Sometimes however, it may be beneficial to put together an apprehensive person with a confident one. This may serve to mature the more apprehensive individual.
- Sometimes, you may have the opportunity to match a person's personality to a particular task, which may help to change their surroundings, and thus create a new emotional as well as physical outlook in their work environment. Often times, this will have a positive carry over into their home life.

8. Delegating

A skill that really requires disciplining yourself that will in turn allow you to supervise better.

How to make your job easier:

- Could much of the work that you do be done by those you supervise?
- Do you frequently find yourself overloaded with detail work?
- Are you taking more and more work home with you at night?
- Are you working longer hours?
- Are those important jobs you are asked to do getting done just in time or a day or two late?
- Is too much of your time being spent on unimportant jobs?
- Have the things that you do become routine in nature?

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If the answer to most of these questions is "yes," then maybe you have not yet adopted one of the KEY skills of managing, the art of delegation. This is particularly important if you have hopes of moving up in the organization. Your skill in delegating could be a major factor in deciding whether you can handle greater responsibilities and a greater job.

A Successful Leader gets things done through others.

Do not fall into the pitfalls of being fearful of delegation.

Unwillingness to delegate may be a psychological problem involving fear.

Unfounded reasons for this are:

That credit for the job being done will go to someone else.

That it will become known that others know more about a particular job than you do.

That someone may do the job better that you have been doing.

Remember it is to your credit and it exhibits confidence in your skills as a supervisor to place competent people around you. Delegation is a requisite of good supervision. It supports trust and confidence in those you supervise and enables them to handle the tasks that will free you to do more important work.

Make it known that you are now doing more top level decision making and possibly researching new techniques and ideas to better the operation.

Effective delegating requires proper planning and thought, and also proper follow-up.

Here are some suggestions for making delegation successful:

- Understand the purpose of delegating. You have three basic objectives in delegating:
- Get the job done.
- Free yourself for other work.
- Have your "team" benefit by learning and experiencing what you have been doing.
- Decide specifically what you can delegate. Generally delegate as much of your work as possible. Do yourself only what no one else can do.
- Recognize that subordinates will make mistakes. Make sure they understand what they are to do. Be willing to take blame for mistakes that may be made.
- Clarify what you are delegating. Agree on what the task is and how much "power" you are delegating to them to perform a particular job. Also, let others know of the arrangements so that proper cooperation will be extended to get the job done.
- Most important, follow-up. Remember that although you have delegated responsibility and empowered others to get the job done, you still have the final accountability for the job. Ask your team for progress reports or discuss with them from time to time.

9. Empowerment

This newer strategy may in-fact be the culmination of all the points above. Simply put, empowerment is delegation taken a step farther. In delegation, the supervisor is not only accountable for the results, but also assumes some responsibility since in most cases the delegated tasks most often are the job of the supervisor. Empowerment is the total,

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unmistakable passing on of responsibility to a person or team to accomplish a job or perform a process. As coach or supervisor, you maintain accountability for the overall outcome or results of the process.

Empowerment brings with it a challenge for the organization to provide state-of-the-art systems, education, tools and most importantly support to the team for maximum performance. Applying empowerment frequently shifts ownership of a function or process from a traditional supervisor to a group, and with that ownership transfer; pride, job satisfaction, motivation and creativity develop.

10. Conclusions

As a summary of all the points discussed above:

- Remember, you can be a great influence on the initiative and drive of those you coach or supervise.
- Be enthusiastic and continually look for ways to maintain morale, build confidence, and motivate.
- Be a good listener. Talking about a situation or a problem expands communication so that understanding is improved.
- Do a good job of planning and scheduling. Keep your team informed so they will understand their role in the organization and will tend not to be confused.
- Keep people busy. Generally, people would like to have too much to do than not enough to do. They lose self esteem if they are not kept busy, and then productivity falls off dramatically.
- Try to solve problems promptly. Letting bad situations go tends to only make them worse.
- Give people a chance to do their work without "annoying" them. Leave them alone unless they need you for something, and let them work.
- Provide the tools, environment and most importantly support for your team to perform at its peak.
- Show your human side. Demonstrate that you care about someone by visiting them when they are in the hospital or on extended sick leave. Wish someone a happy birthday. Remember their employment anniversary.
- Be fair. Do not favor people. Praise them when it is due and constructively criticize when it is due.
- A leader recognizes he is only as strong as the men he leads. His responsibility is to own the team's failures, and share the team's successes.

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METEOROLOGICAL AND CLIMATIC RISKS – THREATS TO THE NATIONAL SECURITY

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Abstract:

The aim of this paper is to identify and categorize the meteorological and climatic risk phenomena most present on the Romanian territory and to assess the threats and their effects on the national security. In a restrictive manner these climatic risk phenomena are commonly included in the generic term of so-called climate change and sometimes even reduced to the most known global warming. It must be said that they occurred long before the actual perceivable effects of the climate change. By the other hand the climate change evidentially exacerbated the frequency and the intensity of the hazardous meteorological and climatic risk phenomena.

Key words: meteorological/climatic/atmospheric risk/hazard phenomena, climate change, global warming, national security.

1. Introduction

Up to now the terminology used for defining the natural phenomena that cause human and material damages is not united. The Secretariat of the International Decade for Natural Disaster Reduction (IDNDR 1990-2000) issued in 1992, on behalf of UN, an *Internationally agreed glossary of basic terms related to Disaster Management* [1].

In this glossary the hazard is defined as “a threatening event, or the probability of occurrence of a potentially damaging phenomenon within a given time period and area”. According to the same glossary the vulnerability stands for “degree of loss (from 0% to 100%) resulting from a potentially damaging phenomenon”.

Also, the risk means “expected losses (of lives, persons injured, property damaged, and economic activity disrupted) due to a particular hazard for a given area and reference period. Based on mathematical calculations, risk is the product of hazard and vulnerability”.

It means that hazard refers to the cause of a destructive phenomenon, while the risk is related to the consequences of such an event, implying of course a hazard that produces it.

The disaster is defined as “a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources. Disasters are often classified according to their cause (natural or manmade)”.

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Climate change means “change observed in the climate on a global, regional or sub-regional scale caused by natural processes and/or human activity”.

It is reflected by the changes of the mean values of the parameters that define the climate (temperature, precipitation, winds, pressure etc.) and includes the global warming, which means increased average temperatures near the Earth’s surface and in the troposphere, due to natural and especially anthropic causes.

In spite of the internationally agreed definitions of terms, in the technical literature it continues to be used many definitions of hazard, risk, disaster, catastrophe, calamity, vulnerability. The terms hazard and disaster are used the most in the Anglo-Saxon literature, while risk and catastrophe in the French one.

In synthesis, one can conclude that:

a) hazard represents the potentially dangerous phenomenon, of high intensity and which cannot be predicted;

b) risk means the calculated probability of a hazard to produce human and material damages;

c) disaster represents the real damages caused by the hazard occurrence.

Another debate in the technical literature concerns the use of the terms meteorological/climatic/atmospheric risk phenomena.

In meteorology a phenomenon has a sporadic irregular presence acceptance; if there are regularity features, one uses the term climatic element, such as the air temperature.

One includes in the climatic risk phenomena the cold and heat waves or the temperature inversions, which are variations of the climatic element air temperature. Considering that these sudden and intense variations of the air temperature occur only in certain moments, their inclusion into the phenomena category and not in the elements one seems to be justified.

One more debate is related to the use of the term climatic risk phenomena. The climate is defined as representing the mean values of the meteorological elements calculated on a minimum 30 years period. But by using average values one loses the most important feature of a phenomenon, its intensity at a given moment and in a specific area.

In order to avoid such a dispute Bogdan O. and Niculescu E. [2] use the phrase “climatic risk phenomena”. Also, Moldovan F. [3] proposes the term “dangerous atmospheric phenomena” and Ciulache S. & Ionac N. [4] the term “risky atmospheric phenomena”, which although are more comprehensive and avoid controversies, are less used on the international scale. In the present paper the terms “meteorological risk phenomenon”, “climatic risk phenomenon” and “climatic risk factor” will be used in the “climatic risk” acceptance.

2. Types of climatic risks on Romania’s territory

As a result of its position in the temperate continental climate region, on the Romanian territory can appear a large variety of climatic risk phenomena. They are a part of the Earth’s climatic hazards/risks, their main genetic factors being the atmosphere general circulation, the regional, local and seasonal particularities of the solar radiation and the features of the active subjacent surface. Also one must mention the Carpathians range as a barrier against air masses flow.

There are many studies on the international and national scale trying to classify the natural risk phenomena, based on a single or a mix of criteria.

One of the most complex classifications using multiple criteria was developed in 1991 by E. Bryant [5]. It was used by some researchers (Moldovan, F. [3], Croitoru, A.,

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Moldovan, F. [6]) as a starting point in identifying and categorizing the climatic risk phenomena on the Romanian territory.

In this paper, based on the typology defined by Bogdan O. and Niculescu E. [2], we categorized the most threatening climatic hazards/risks to Romania's national security components.

2.1. Winter climatic hazards/risks, that have as a common feature the preservation of negative temperatures, which include:

- a) winter thermic hazards/risks (polar or arctic cold waves, massive coolings, temperature inversions, minimum temperatures below -20°C, -30°C etc.);
- b) glacial hazards/risks (frost, hoarfrost, rime, glazed frost, ice deposits, heavy snowfalls, snow cover, snow slides);
- c) aeolian hazards/risks (blizzard, crivetz, foehn), strong wind at speeds of over 11 m/s.

During the winter there are also possible pluvial and thermic risks specific to the warm season, such as warm waves and heavy warm rainfalls that cause winter floods.

2.2. Summer climatic hazards/risks, characterized by positive temperatures and intense insolation processes, which include:

- a) summer thermic hazards/risks (tropical heat waves, massive warmings over 30°C, maximum temperatures over 35°C, 40°C, natural forest fires);
- b) pluvial hazards/risks (heavy rainfall, heavy continuous rain, heavy or violent rain showers);
- c) aeolian hazards/risks (dry winds - suhovei, duststorm – Vântul Negru), strong winds at speeds of over 11 m/s;
- c) associated hazards/risks (showers, hailstorms, squalls, thunderstorms, tornadoes).

2.3. Transition seasons (spring and autumn) climatic hazards/risks, whose characteristic is the alternation of the positive and negative temperatures. This leads to the interference of the winter and summer hazards/risks, a phenomenon that continues until the prevailing direction of positive or negative temperatures is set.

Not all the climatic phenomena during these seasons can be considered a hazard or risk. They often occur associated. The most specific are:

- a) polar cold waves;
- b) the earliest (autumn) and the latest (spring) frosts, white frosts, snowfalls and blizzards;
- c) tropical heat waves associated with dry winds, which can produce drought and depletion of soil water reserves;
- d) tropical heat waves associated with spring rains, causing melting of the snow layer. As the rivers are frozen, they cannot absorb the amount of water coming from snow melting and upstream high regions rains, so downstream floods occur, often catastrophic ones.

2.4. All the year round climatic hazards/risks, which comprise:

- a) excess of precipitation, which generates excess of moisture and flooding;
- b) precipitation deficits, which generates dryness and drought, which are the most complex climatic hazards/risks possible in any season;

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- c) strong winds (11-16 m/s) and violent winds (over 17 m/s), which can cause numerous damages to the environment and society;
- d) advection, radiation, evaporation / mixing, urban or industrial and frontal fog.

3. Climatic risks threats to the Romania's national security

In its new acceptance national security means much more than defense against armed attacks of other states or lately against the terrorism and cyber-attacks. Natural disasters due to climatic risks, intensified or not by the global warming and climate change, can threaten in a very serious way the national security.

The most recent severe climatic risk phenomena occurred on the Romanian territory (such as the massive warming in the Summer of 2000 [7], heavy rainfalls in July and September 2005 [7], [8], the heat waves producing floods in the winter of 2006-2007 [7], the heavy snowfalls and blizzards in February 2012) drawn attention to the consequences of climatic hazards and climate change, especially to the destabilizing effects of floods, droughts, blizzards and storms.

On the international scale, the climatic risks can cause humanitarian disasters, political violence, and the undermining of weak governments. On the national scale, the effects of climatic hazard phenomena could simply overwhelm disaster-response capabilities of the national and local authorities.

The starting point is to recognize that some climatic hazards and climate changes are inevitable and to propose a set of feasible and affordable measures in order to reduce the vulnerability to the predictable effects of such hazard phenomena.

On the other hand, also considering our membership to the EU space, we should also draw the attention to the reduction of greenhouse gas emissions, bearing in mind that reductions in the long run are the solution in order to avoid global climatic problems.

The latest climatic hazards evolution also demonstrated that we should define as clear as possible, from our national point of view, the critical infrastructure realms and items.

Climate change and the latest climatic risks cannot be connected directly with each other as obviously as we would be, but they gave us a visual image of what climate change, which scientists predict will exacerbate the intensity and frequency of hazardous weather events, might mean in the future.

Specialists do not necessarily attribute single hazardous meteorological or climatic phenomena to climate change; at most, they would affirm that climate change makes severe weather conditions more possible. It is still a much debated topic in the scientific community whether climate change has been responsible for the increased number and intensity of the severe weather phenomena.

On the other hand, it became obvious that climatic risks and climate change can be threat multipliers to the national security causing instability and they present significant national security challenges.

At this time the scientists can predict that the effects of some severe and extreme weather phenomena of climate change by kind, likelihood, and impact on different sectors will become more frequent, more widespread, and/or more intense during the 21st century.

In the short run it is possible that some countries or areas in northern Europe, the Arctic and Russia undergo positive effects of a warming climate, but per total the long run consequences upon all regions will probably be negative if nothing is done in order to further reduce emissions of greenhouse gases.

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Due to its location Romania is not particularly vulnerable to climatic risks and climate change, still it has to cope with the negative effects of floods, droughts, heat waves, blizzards, storms etc. Each of these phenomena has potential consequences, direct and indirect, for our national security.

For example, as a consequence of global warming and anthropic activities, the southern parts of Dobrogea and Oltenia are already in a process of desertification, which may be a threat to the national security due to the possible decline in regional food production.

Climatic hazard phenomena may overwhelm the capacity of local or even national authorities to respond. In emergency situations they may require support from the national military or even a larger international response. Despite lacking human intentionality, these phenomena can threaten national security.

Just as armed attacks, extreme effects of climatic risks can endanger or even kill a large number of people, damage critical infrastructure in affected regions and cause civil disorder. They can produce large scale disruption so that local public transportation, health, law enforcement and emergency response units could not be able to cope with the threat.

Extreme climatic hazards exacerbated by climate change may have a more direct impact on national security by severely damaging critical military infrastructure, this way diminishing or undermining national defense resources. A compound effect in such a situation would be that a part of military assets couldn't be any more called upon in those domestic emergencies.

4. Conclusion

The debate about climatic risks and climate change has underlined until recently the important economic consequences in comparison with the costs of action, and whether one can afford to address this issue.

The recent extreme weather events suggest a different way of thinking in this respect. Even if the macroeconomic costs are low in the context of the economy, the human and political consequences are important and painful.

Whether or not the latest climatic hazard phenomena are linked to global warming, climate change will probably produce more of these kinds of events, characterized by concentrated costs to particular areas and people that lead to severe local effects and cascading consequences for others.

The concentrated effects of the climatic risks have important national security implications in terms of the direct threat from extreme climatic risks as well as by the indirect consequences.

On the local and regional scale, the extreme climatic risks intensified by climate change can endanger large numbers of people and damage critical infrastructure, including military, thus requiring mobilization and use of military assets.

One must also recognize that the already existing concentration of greenhouse gases made the climate change inevitable.

National policies should thus support risk reduction and adaptation.

The most important adaptation policies that should be supported are early warning systems, emergency response plans, building codes and evacuation and relocation schemes.

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FUNDAMENTAL ROLES AND PRINCIPLES OF HUMAN RESOURCES MANAGEMENT

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Abstract:

This paper intends to summarize the ideas about Human Resource Management roles and to structure the functions existing in this domain.

1.Introduction

Actual structures of *organizations* (from small and medium enterprises to big companies/holdings; in Military from small units – battalion to higher echelons) has to deal with one of the resources – personnel. If this activity is carried on by a single person (the general manager in the small enterprises also being the owner of the organization) or a Human Resource Department (for bigger organizations), the role of this activity is the same.

Some commentators call the Human Resources function the last bastion of bureaucracy. Traditionally, their role was more closely aligned with personnel and administration functions that were viewed by the organization as paperwork. In fact it is true that the role of a Human Resource Structure is to keep the evidence of all data about the substructures of an organization, their responsibilities, the enlisted personnel and their specialties, the vacations positions, the contracts (general and specific) and all kind of data about the enlisted personnel (personal data, experience and skills, promotion, evolution inside the organization etc). Basically the Human Resource Structure is an execution element. But, the Human Resource Management is also an activity performed from each manager of the smallest substructure in the organization to the general manager. In this idea every commander of a unit has his partial role as a human resource manager.

Research has shown that the human aspect of resources within an organization contributes approximately *eighty percent* of the organization's value. This implies that if people are not managed properly, the organization faces a serious chance of falling apart [1].

First of all it is necessary to establish the *object of activity* and the general *goals/missions* for the enterprise/unit. Based on that the general manager will establish the design of the enterprise/unit to be functional (usually for best profits/outcomes at the minimum): the necessary substructures and their responsibilities, the necessary equipments, the personnel and their specialties to operate the equipments, to plan the production/activities and to manage the outcomes. This step for a new structure in the

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civilian society is executed by the manager based on his experience in the chosen object of activity. In the Military structures they are established by regulations or superior echelons.

2. Human Resource Management definition

It is appreciated that in the present it does not exist an official definition, unanimously accepted of human resource management and who can join specialist's consensus.

Human resources may be defined as the total knowledge, skills, creative abilities, talents and aptitudes of an organization's workforce, as well as the values, attitudes, approaches and beliefs of the individuals involved in the affairs of the organization. It is the sum total or aggregate of inherent abilities, acquired knowledge and skills represented by the talents and aptitudes of the persons employed in the organization.

Human Resource Management is the management activity responsible of actions and decisions that affect the relations between the organization and its members.

A lot of definitions came by human resource function and the most important are presented below:

Petre Burloiu defines the human resources management including in its contents the ergonomically organization of work: "human resources management represents a complex interdisciplinary measures designed, on staff recruitment, selection, employment, use of personnel by ergonomically organization of work, moral and material stimulation, until the time of cessation of employment". [2]

This definition corresponds to the human-requests system, in which people occupies a central place, being forced to respond to the requests of all factors: technical conditions of employment, labor relations, motivation of the personnel, the environment, personal concerns, and other factors applicants.

Robert Mathis and his collaborators define human resources management through its main responsibilities, namely:

- recruiting and employing staff on the basis of competence;
- development of the appropriate qualification and training programs related to the organization's objectives;
- development of stimulation plans by wage developments, designed to encourage efficient outcomes at low cost;
- development of no financial stimulations plans;
- quick integration of new employees;
- development of career programs. [2]

To ensure that these responsibilities can be fulfilled, between different substructures of the organization is necessary to establish a collaboration, to lay down the principles and guidelines for each activity or substructure and to establish the work relations between working staff and specialists of the human resources substructure.

Human resources management is defined by D.A. Constantinescu and its collaborators as "a domain that includes all managerial decisions and practices influencing or directly affecting the human resources operating within an organization." [2]

There are other definitions of human resource management (HRM) published in the specialized literature from our country [2], namely:

- all decisions that affect relations between main social partners (employer and employees) designed to ensure increased productivity and efficiency in economic activity;
- human-oriented activities, with the objective of plan, design, optimal use, maintenance and socio-human development;

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- all activities aimed at ensuring the optimum use of human resources, for the organization benefit, the individual benefit and the community in general;
- the complex of activities oriented towards effective use of human capital, in order to achieve organizational objectives, at the same time ensuring the conditions that ensure the needs of employees;

By examining the definitions of human resources management may draw some conclusions which reflect the status of development and consolidation of the theory and practice of management in this field of activity.

You may find also that the definitions in question do not contain elements contradictory. Some definitions also insist on ways and means of achieving the objectives of their human resources, on its goals, while others highlight the activities of a specific function.

Internationally, the definition related to such aspects is:

- the planning, the recruitment and retention of staff;
- motivation of employees;
- obtaining and maintaining an efficient work force;
- the use of employees in order to achieve individual and organizational goals.

The contents of human resources management is given also by the multitude and diversity of activities to be carried out, correlated and harmonized in the field of human resources, activities that are more or less linked to each other and have a great impact on the results obtained.

Over time, numerous opinions from specialists appeared which attempted to give us the most accurate and comprehensive areas of activity of the human resources management and that, in their great majority, bear the imprint of the country of origin of the authors.

The American society for Training and Development [2] identifies the nine main areas of activity of the human resources management:

- preparation and development;
- organization and development;
- organize/design posts;
- human resource planning;
- selection and provision of personnel;
- personnel research and information systems;
- rewards\benefits or aid;
- advice on personal problems of employees;
- Union/labor relations.

In view of these areas of activity, De Cenzo, one of the great specialists in the field, along with his collaborators [2] suggests that, in fact, human resources management is a process consisting of four functions: obtaining, developing, motivating and retention of human resources.

Other authors-C.D. Fischer, L.F. Schoenfeldt, J.B. Shaw [2] added to these domains other activities, in an attempt to circumscribe more precisely the content of human resources management:

- strategic management of human resources;
- equal opportunities for employment;
- management of international or multinational human resources;
- career planning;
- organizational behavior;
- collective bargaining;

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- the work program;
- discipline and control;
- evaluation of human resources.

As we can see, the activities of the human resources management are particularly varied and their content is not of the same nature since they can be strategic, operational or administrative. Their assessment will be made according to their contribution to organizational objectives. In terms of intensity of manifestation of various activities in the field of HRM, it varies from one organization to another and from one stage to another, depending on specific conditions. Conduct or expression of these activities should be carried out in compliance with the conditions of the legal provisions, and managers must ensure that, regardless of the level of the hierarchy, a balance between the interests of employees and permanent objectives of the organization

3.Human Resource Management functions

Finally *the core roles* of human resource management may be grouped into three categories, and the subcategories listed below [3]:

PLANNING AND ORGANIZING FOR WORK, PEOPLE AND HRM

- Strategic perspective
- Organization design
- Change management
- Corporate wellness management

PEOPLE ACQUISITION AND DEVELOPMENT

- Staffing the organization
- Training & development
- Career management
- Performance management
- Industrial relations

ADMINISTRATION OF POLICIES, PROGRAMMES & PRACTICES

- Compensation management
- Information management
- Administrative management
- Financial management

4.Principles of Human Resource Management

The complexity of the human resources management and its ability to be creative and scientific resource, results form its fundamental principles underlying at its foundation. From these principles we underline the most relevant and meaningful [4]:

- the principle of previewing, training/forming and providing human resources in relation to the requirements of scientific and technical revolution and the concrete needs of organizations;
- the principle of continuous training of human resources for the purpose of saving financial resources on the one hand and rapid integration into employment of human resources on the other hand;
- the principle of recruitment, selection and orientation in relation to the needs of ensuring consistency between quantitative and qualitative employment resources and available jobs;

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- principle of personnel assessment, physical energy and mental stress resulting from the assessment of workstations and work performance;
- the principle of motivation of employees, establishment and differentiation of remuneration in relation to the weight and the intensity of the work and the quantitative and qualitative performances, promoting and building professional careers;
- the principle of labor protection facing the risks of illness and accidents work and the social protection facing social risks that cannot be previewed;
- the principle of maximum economic efficiency of utilization of all resources in conditions of security and health protection, highlighting the productivity gains on workstation, individuals or work teams;
- the principle of information, communication, personal negotiation and by representatives (unions, associations, councils, etc.)
- the principle of integration, cooperation and the participation of employees in decision-making and to the achievement of the organization's objectives.

5. Conclusion

In addition to human resources structure/department the managers at all levels of the hierarchy, from general director/similar to the smallest team leader, have an extremely important responsibility in this domain, because they are the ones who work directly with people, who better know them, which creates a particular climate and who can think of the best solutions (with the support of specialists) and especially they can implement these solutions.

The final goal of human resource management consist first of all in “making the employee how the organization wants” but also to make the organization like the employees needs so the organization could accomplish its objectives, respecting the principle “the right person in the right position in any moment”.

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CONSIDERATIONS ABOUT TACTICAL DATA – LINK 16 NETWORK MANAGEMENT

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Abstract:

Once the Romanian decision regarding F-16 Falcon multi-role airplane acquisition was taken, a large number of other issues has to be solve in order of use them as the best manner as posible. One of these issues consist of implementation and management of tactical data link - Link 16 network. Unfortunately, there is no “gain without pain” and the benefits of Link 16 cannot be realised without complex equipment, trained personnel and good organisation. Will see the way in which Romanian army will manage this situation.

Key words: Tactical data link, network, joint, command and control, communications, computers.

1.Introduction

Link 16 is the primary Tactical Data Link used in national, NATO and coalition forces today and facilitates a high degree of interoperability between air, land and maritime based participants, sharing intelligence, surveillance, reconnaissance, engagement and weapon status in near real-time.

Basically, Link-16 is an internet in the sky, and it's revolutionizing the way jet fighters wage war. The new ability to combine off-board data with their own means the airplanes can now pinpoint the locations of radars, track them with their helmet sights, and shoot weapons accurately. [1].

The most common TDL for National, NATO and Coalition forces is the Multifunctional Information Distribution System (MIDS) Link 16, which has been at the forefront of recent NATO and coalition operations including Bosnia, Iraq, Libya and Afghanistan.

MIDS Link 16 is deployed on air, land and maritime platforms and facilitates the exchange of information in standard message formats including:

- Situational Awareness;
- C2 (Command and Control) to C2 Battle Management;
- C2 to Fighter mission assignments;
- Fighter to Fighter information exchange;
- Imagery;
- Voice communications.

We could also say that Link 16 provides real-time, jam-resistant secure transfer of combat data, voice and relative navigation information between widely dispersed battle elements. Participants gain situational awareness by exchanging digital data over a common communication link that is continuously and automatically updated in real time,

CONSIDERATIONS ABOUT TACTICAL DATA – LINK 16 NETWORK MANAGEMENT

reducing the chance of fratricide, duplicate assignments or missed targets. Each participant in the communication link is able to electronically see the battle space, including assigned targets or threats. The MIDS represents the latest generation of Link 16 equipment incorporating secure data and voice into a single, small, affordable and highly reliable unit.[2]

Whether the battlespace is managed from a single C2 centre or a distributed C2 environment Link 16 facilitates the exchange of sensor data to enable the C2 centre to construct and maintain the Common Operating Picture (COP) and facilitates successful mission execution by allowing the Link 16 enabled platforms to be deployed with maximum effectiveness (Fig.1).

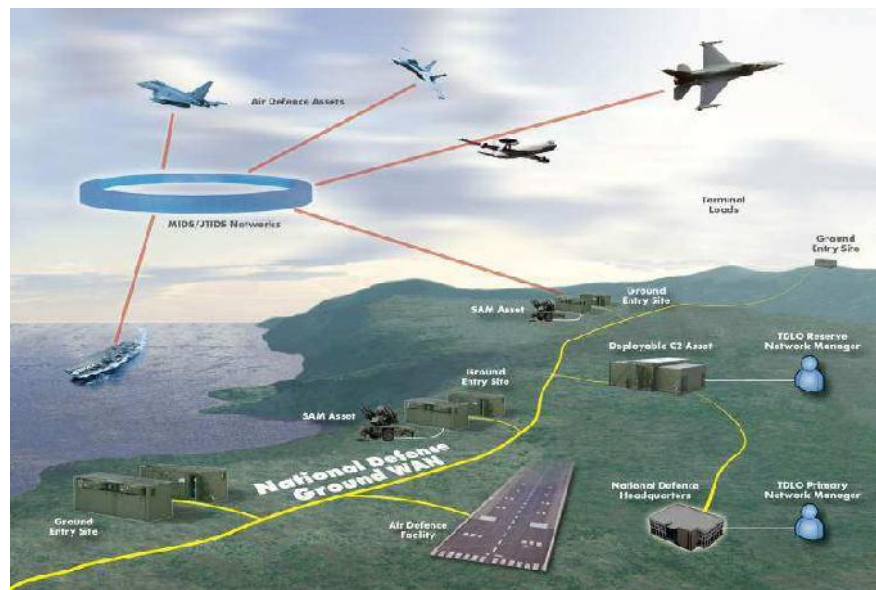


Fig.1 Link 16

Some examples of platforms currently using the Link 16 capability are:

- Aircraft: F/A-18 Hornet, F-15 Eagle, F-16 Fighting Falcon, Eurofighter Typhoon, Dassault Rafale, Dassault Mirage 2000D, Dassault Mirage 2000-5F, Saab Gripen, Panavia Tornado, E-2C Hawkeye, E-3 Sentry, MH-60S/R NavalHawk family helicopters, E-8 Joint STARS, EA-6B Prowler, EA-18G Growler, EP-3C Aries, Boeing RC-135 Rivet Joint, Saab 340 AEW&C, ATR-72MP, Greek Embraer R-99A Airborne Early Warning & Control aircraft;
- Ships: U.S. carrier battle groups, French aircraft carrier Charles de Gaulle (R91), Italian aircraft carrier Cavour (550) and Giuseppe Garibaldi (551), Royal Navy Ships, French, Italian, Spanish, Norwegian, Netherlands and German frigates;
- Ground vehicles VESTA (Verifiëren, Evalueren, Simuleren, Trainen en Analyseren); a minivan with radiotower used for training purposes;
- Missile defense systems: Arrow, Patriot ICC and Battery Command Post (BCP), THAAD, SHORAD, JTAGS, Joint Land Attack/Cruise Missile Defense Elevated Netted Sensors (JLENS), Networked Weapons, SDB II, JSOW-C1;
- Command and Control : Joint Data Network.

CONSIDERATIONS ABOUT TACTICAL DATA – LINK 16 NETWORK MANAGEMENT

2.Role of Tactical Data Links

Tactical Data Links (TDLs) support the continuing requirement to exchange data within Command, Control, Communications, Computers and Intelligence (C4I) systems; they exist to support Command and Control (C2), Intelligence, Surveillance and Reconnaissance (ISR) functionality. They should be seamless, transparent exchanges of data with the primary C4I or other systems used by each platform.

C4I infrastructures are necessarily complex as shown in the figure below which maps out the TDLs that are being used by assets in current battlespace arenas. These TDLs have architectures and require careful management. An appropriate organisation is required to carry out these tasks and a Joint Data Link Operations Centre (JDLOC) or Joint Interface Control Officers Cell (JICC) is as the diagram shows, ideally suited to execute these responsibilities. The diagram shows the intricate paths TDLs' take and how joint the battlespace is in reality.

For the Joint Task Force Commander (JTFC) to fully understand his battlespace, a data link validated operating picture is essential. Today Link 16 data received from assets within operational networks as well as other sources such as Intelligence, Meteorology, EW and Imagery results in a Joint Operating Picture (JOP). This is a combination of the Recognised Air Picture (RAP), Recognised Land Picture (RLP) and Recognised Maritime Picture (RMP) contributing to Combat ID and enables the JTFC to make effective measured decisions from multiple sourced C4 architectures.

The Link 16 network also provides vital exchange of Situational Awareness information between Link 16 enabled assets, making Link 16 a vital contribution for military executives to make informed decisions within the battlespace. Link 16 is normally exchanged through a Radio Frequency (RF) bearer, although can be exchanged through landlines, satellite and serial links. Data encryption and frequency hopping techniques ensure that Link 16 is both jam resistant and secure. Link 16 operates at UHF frequencies; therefore direct communications is only possible when the transmitter and receiver are in line of sight. Link 16 protocols therefore allow information to be "relayed" via other platforms, but this still requires the C2 staff to ensure assets are geographically located to maintain the communications network at all times. As an alternative, Link 16 messages can be transferred via secure landlines, satellites or other data links, using, for example, Joint Range Extension features to enhance the Link 16 infrastructure.[3]

Link 16 operates at frequencies that have the potential to interfere with the operation of Navigational Aids. Therefore, in peace time, the use of Link 16 needs to be managed to maintain compliance with national flight safety legislation. Network Management and Monitoring Systems, enable the Link 16 Network Manager/JICO to maintain flight safety. A typical Link 16 network for a national air defence system is depicted in Figure 2, note that the ground system, has distributed MIDS Terminals (radios) which provide Line of Sight communication over the airspace being protected.

3.TDL Lifecycle

Tactical Data Links such as Link 16 play a key role in the CONOPS from threat detection to deployment of responses and in delivering full ISTAR capability. Effective management and deployment of network assets is the number one priority for Link 16 nations. The TDL lifecycle will enable the creation of a successful robust TDL network.

CONSIDERATIONS ABOUT TACTICAL DATA – LINK 16 NETWORK MANAGEMENT

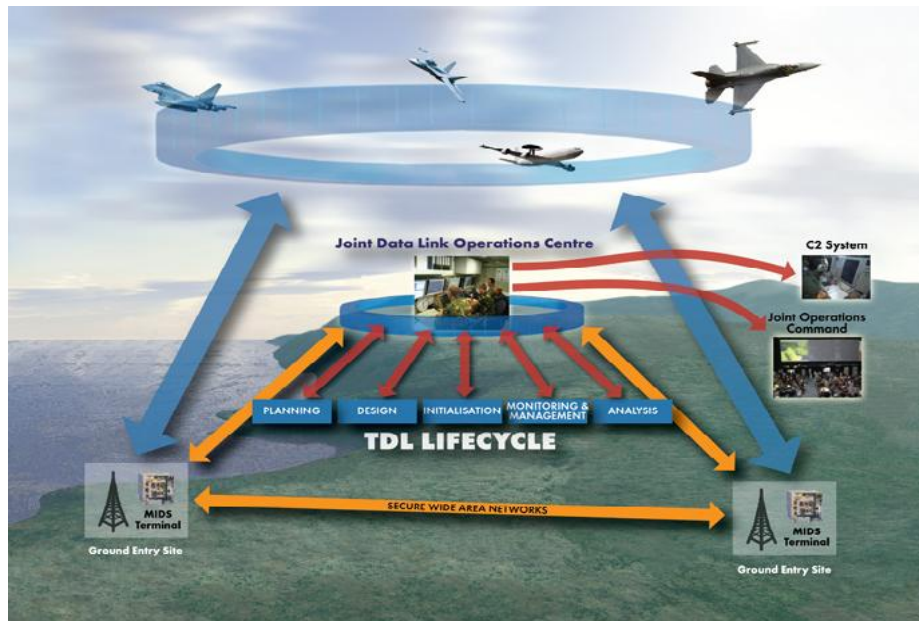


Fig.2 TDL lifecycle

The lifecycle comprises five stages as shown in the diagram, which together ensure that the TDL optimises the interoperability between participating platforms resulting in successful integration at both physical and data levels. The lifecycle involves a number of organisational entities and must be integrated into the overall Battlespace Management process. Therefore each nation may have different ways and different organisational entities performing the tasks described below.[4]

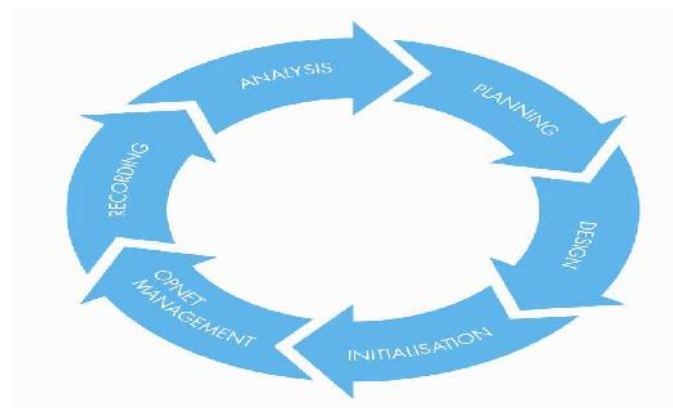


Fig.3 Organizational tasks

3.1 Stage 1- Planning

Link 16 is a highly structured network which utilises information about the mission and mission participants to optimise the network and maintain security. With the line of sight limitations of Link 16 it is clearly essential to configure the network so that communications can be maintained at all times.

To plan the architecture, long range planning processes need to take place at least 6 months in advance of training. On the other hand, short range planning addresses the

CONSIDERATIONS ABOUT TACTICAL DATA – LINK 16 NETWORK MANAGEMENT

weekly/daily requirements of the Link 16 network and the platforms participating within it events/operations .

3.2 Stage 2 - Design

Network Designs contain information about the Link 16 Network and are used to initialise each of the Terminals associated with each network participant.

Network Designers build the Link 16 networks. They are driven by requirements laid down in national Frequency Clearance Agreements (FCA), Individual Equipment Requirements (IER), crypto and platform types and numbers. This information is taken from the long range planning information received by the DLOC. The Link 16 Designer key considerations are based on idea that The Link 16 Design Cell:

- is part of the DLOC and is the only authority with the remit to design, validate Link 16 networks using a Network Design Tool.
- is the only team of designers who have the authority and remit to convert foreign designs using a Network Design Tool
- is the sole authority for the dissemination of Link 16 designs to the user community
- routinely provides support to the user community on Link 16 network and platform load issues.

The design cells often have locally created tools which collate and record IERs for the user community. This can enable smart, efficient designs to be disseminated at short notice for real world operations. The Link 16 designer carries out the above responsibilities using a specific tool. There are only three tools presently used. The Tactical Network Design Station (TNDS) is predominantly used by European DLOCs. The JTIDS Network Design Application (JNDA) is predominantly used by the US forces and foreign nations using US companies. ACCOR is a French Network Design tool. All these tools create the designs and individual platform loads which are then distributed

3.3 Stage 3 - Initialisation

The ground based infrastructure to monitor and control the L16 Network is connected together with ground terminals via interfaces and national WANs. The establishment of a Link 16 network is initiated by a Link 16 Network Management System (NMS) commanding their own ground terminals to enter the network, either by operating as the Network Time Reference or by synchronising with an External Network Time Reference. A Link 16 Network Management System controls and synchronises the ground terminals. It performs the IDPF role for their own ground terminals by constructing terminal Initialisation Data Loads from Network Design Parameters and Mission Specific Parameters resulting in the TDL terminals being synchronised into the Link 16 network. This can only be successful if the terminal is loaded with correct crypto. The terminals on the platforms will gain the crypto and a terminal Initialisation Data Load via platform specific IDPF tools.

Experienced Link 16 nations have DLOCs which have a deployed capability. The Deployed or Out of Area (OOA) cells will execute the complete TDL cycle in support of a training event /operation. Those who are small or new emerging nations with Link 16 assets will rely on large countries such as the US to support their Link 16 requirements.

3.4 Stage 4 - Monitor and manage network

Active Link 16 networks need to be fully monitored and managed. This requirement is fulfilled by NMS operated by network managers as part of national Data Link authorities. Active monitoring and dynamic management ensures the platforms high quality data exchanges to support their mission objectives during training and operations.

CONSIDERATIONS ABOUT TACTICAL DATA – LINK 16 NETWORK MANAGEMENT

3.4.1 Monitoring

The FCA often requires the Network Manager to monitor a variety of parameters, such as the monitoring of platform proximity to navigational aids, the monitoring of platform timeslot allocations to ensure that platforms have the correct ID loads. Network Management Systems will provide these functions

Monitoring the connectivity of platforms within the network is key to the robustness of the network. If platforms cannot see each other due Line-of site or cannot be seen by a ground features, this will contravene FCA's and prevent platforms exchanging tactical information.

Monitoring the utilisation of assigned transmit capacity on individual participant and NPGs, highlights to the Network Manager where additional capacity is required or is under-utilised and could potentially be re-assigned. This serves to inform the decision-making process when considering potential dynamic network management actions. The information can also be fed back to the Network Design Cell for the purposes of improving future Network designs.

Network Monitoring systems provides a number of functions to help monitor the health of the Link 16 network(s) and aid the decision-making process when corrective action is required. This includes looking at individual participant and overall network statistics for parameters such as Time Quality, Position Quality, Initial Entry Messages reception or high error rate indication

TSDF is a ratio of the Time Slot usage compared with the permitted value and can be viewed in a number of ways, by participant, by NPG or for the whole Network. Expected TSDF can provide a projected view of what the TSDF would look like if all time slots are fully utilised. In addition Geographic and Area TSDF provides the TSDF for all participants within a spatial region.

3.4.2 Managing

A network design is typically created weeks or months in advance of the actual operation. Whilst a design attempts to accommodate the full set of expected participants and attempts to satisfy their data exchange requirements, everything that happens during real-world operation of the network cannot be predicted. Therefore the dynamic management of a network in response enables the network manager to initiate transmission of network management messages over the air to update the timeslot and relay assignments of the live network participants.

Platforms will often during live operations be re-tasked by the Battlespace executive in the CAOC. This may require the platform to be allocated additional capacity e.g. additional surveillance capacity to cope with increased enemy air activity. This function will ensure timely, transparent secure over-the-air assignment or de-assignment of timeslots.

The requirement of platforms to have relay is essential due to the Beyond Line-of-site challenges Link 16 gives. The relay assignments over-the-air will enable platforms and the terminal ground infrastructure to receive/transmit data to/from participants who are beyond line-of-site of the main Network Time Reference.

Platforms are often loaded the incorrect Initialisation Data Load (IDL) by support personnel prior to going on task. Therefore the ability to transmit a brand new updated IDL is a key benefit to the platform executing a mission. This avoids the need for that platform to return to base to receive a correct Load.

The allocation of Network functionary roles, such as NTR, to participants within the network is key to maintaining a network that will always be robust ensuring that the NTR is always allocated to the most appropriate platform.

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3.5 Stage 5 - Analysis

The post mission analysis of Link 16 network data enables the Battle space Executives through the Network Manager to improve, update and address lessons that have been identified during a period of operations. Quite often there is interoperability issues that prevent platforms operating in Link 16 networks and therefore limit the platforms use during a mission. This can affect the overall mission aims. The recording of FCA and JTIDS Activity Reports ensure that nations have evidence to support incident investigations by CAA. The recording and replay functions support the overall network data analysis and can additionally support operator training/feedback and briefings.

4. Conclusion

The paper tries to explain the different set of operations that need to be preformed to maximise effectiveness of Link 16. TDLs, especially Link 16, must be Planned, Designed, Monitored and Managed effectively and thorough post mission analysis must be carried out. It is important that the physical infrastructure is established and ready to support the TDL network architectures that are covered in the lifecycle process. If the appropriate requirements are not met and the lifecycle is not followed the network and exchange of data between platforms will be ineffective and the mission will be severely restricted and maybe unsuccessful.

It is therefore important that the roles performed by the organisations and operators assigned control of the functions are well coordinated, that the staffs are well trained and that the staffs are supported by equipment designed to sustain their mission. For Romanian Army will be a challenge to achieve this goal.

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**THE MANAGEMENT OF THE ARMED FORCES CERTIFICATION
SYSTEM**

LTC. ENG. Marius CONSTANTINESCU

Ministry of National Defence/Armaments Department/Military Body for Certification,
Accreditation and Surveillance/Bucharest/Romania

Abstract:

In Romanian Armed Forces, Military Body for Certification, Accreditation and Surveillance (MBCAS) is responsible for management of certification, accreditation and surveillance activity. MBCAS performs second part audits at MOND suppliers and issues a two years certificate based on AQAP requirements.

Romania, as part of NATO country ratified STANAG 4107 - Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publication. MBCAS has the obligation to organize and conduct the activities that result from STANAG 4107 requests.

AQAP family represents ISO 9001 family plus specific, supplementary, requests. For this reason I will have a short presentation of ISO 9001 family and an enumeration of the most AQAP.

Based on certifies emitted, the MBCAS have realized the List of Certified Suppliers (LCS). The LCS shows that the suppliers have been certified by the OMBCAS and fulfilled the AQAP requests.

1. Introduction

Based on 2004 NATO admission, Romanian Armed Forces had to adapt Quality Assurance System to fulfill the NATO requests. The main goals of the Romanian Armed Forces were interoperability with other Alliance Armed Forces and the common denominator (language) in discussions between different quality assurance structures.

In order to fulfill these goals, Armaments Department through MBCAS, was responsible for adapting national standard and regulation. These requests oblige MBCAS to ratify STANAGs and to adopt AQAPs.

The challenge was to be sure that MOND suppliers are able to deliver NATO interoperable products to the Armed Forces and to have similar procedures with other countries.

2. Role of Military Body for Certification, Accreditation and Surveillance in the Romanian Armed Forces.

Military Body for Certification, Accreditation and Surveillance (MBCAS) from Armaments Department, Management Resource for Endowment Directorate, is in charge with quality evaluation, certification and surveillance at Ministry of National Defense (MOND) suppliers.

According with competence and responsibility domain, MBCAS has the following responsibilities:

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- Elaborates, on demand, proposals regarding quality management system evaluation and certification, according NATO quality assurance agreements – AQAP 2000 series;
- Performs quality management system audits at MOND suppliers;
- Performs surveillance audits and according with results (observation) propose to maintain, suspend or withdraw of quality certification;
- Supporting document, implement and maintain quality management system in Armaments Department;
- Perform quality evaluation, certification and surveillance at the products and services suppliers for armaments and major equipments for NATO countries, when requested;
- Elaborates specific procedures for quality evaluation, certification and surveillance, harmonized with NATO country procedures and filled in with NATO AC/327/LCMG Group specific request.

In accordance with the competence mentioned above representatives of MBCAS perform quality management system audits at MOND suppliers.

As a result of certification activities Armaments Department issued a certificate that validates quality management system conformity with AQAP family. This certificate is signed by state secretary for armaments and has two years validity.

3. Quality Assurance System in the Romanian Armed Forces (ISO 9000 family)

AQAP family represents ISO 9001 family plus specific, supplementary, requests. Therefore I will briefly introduce ISO 9001 family.

The ISO 9000 family of standards is related to quality management systems and designed to help organizations ensure that they meet the needs of customers and other stakeholders while meeting statutory and regulatory requirements related to the product.

The standards are published by ISO, the International Organization for Standardization, and available through National standards bodies.

The requests of quality management system specified in this International Standard are complementary to the products requests.

This International Standard can be used to evaluate the organization capabilities to satisfy the clients, legal and organization regulation requests.

This International Standard promotes a **process based approach**, to develop, implement and improve the quality management system efficiency. Applying a process system into an organization, together with process interaction and identification, as well as process management in order to obtain the intended result, can be named **process based approach**.

The methodology named PDCA (Plan – Do – Check – Act) can be applied to the process:

Plan – State the necessary objectives and process to obtain the results according to the client requests.

Do – implement the process.

Check – monitor and estimate the process and products and report the results.

Act – acting for continuing improving of process performances.

The standard content is:

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Chapter 1: Domain

Chapter 2: References

Chapter 3: Terms and definitions

Chapter 4: Quality management systems

Chapter 5: Management responsibility

Chapter 6: Resources management

Chapter 7: Product achievements

Chapter 8: Estimation, analysis and improvement

The first three chapters treat areas covered by the standard, the main exclusion, references and definitions for client, organization and supplier terms.

The main chapters of this standard are 4,5,6,7 and 8. These last five chapters deal with the requirements that organizations wishing to meet the standard have to fulfill.

The standard specifies that the organization shall issue and maintain the following six documented procedures:

- Control of documents (4.2.3).
- Control of records (4.2.4).
- Internal audits (8.2.2)
- Control of nonconforming product / service (8.3).
- Corrective action (8.5.2).
- Preventive action (8.5.3).

In addition to these procedures, ISO 9001:2008 requires the organization to document any other procedures required for its effective operation.

The standard also requires the organization to issue and communicate:

- a documented quality policy,
- a Quality Manual (which may or may not include the documented procedures) and numerous records, as specified throughout the standard.
- before the certification body can issue or renew a certificate, the auditor must be satisfied that the company being assessed has implemented the requirements of sections 4 to 8.
- sections 1 to 3 are not directly audited against, but because they provide context and definitions for the rest of the standard, their contents must be taken into account.
- after evaluation a third party certification body provides independent confirmation that organizations meet the requirements of ISO 9001.
- the certificate is limited by a certain scope and will display the addresses to which the certificate refers.
- An ISO 9001 certificate is not a once-and-for-all award, but must be renewed at regular intervals recommended by the certification body, usually once every three years.

ISO 9001:2008 Quality management systems — Requirements is supplemented by two other standards:

- ISO 9000:2005 Quality management systems — Fundamentals and vocabulary and
- ISO 9004:2009 Managing for the sustained success of an organization — A quality management approach.

Only ISO 9001 is directly audited against for third party assessment purposes

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4. STANAG 4107 – Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publication – adoption and obligation.

Romania, as part of NATO country ratified STANAG 4107 - Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publication.

The aim of this STANAG 4107 is:

- to set the process, procedures, terms and conditions under which Mutual Government Quality Assurance of defense products is to be performed by the appropriate National Authority of one NATO member nation, at the request of another NATO member nation or NATO Organization, and
- to standardize the development, updating and application of AQAP on the basis of the concept of quality assurance in the procurement of defense products.

By ratifying STANAG 4107, participating nation agree that the appropriate National Authority in a supplying country will provide in its country, upon request by the appropriate National Authority in an acquiring country or NATO organization, a Government Quality Assurance (GQA) service to orders in all areas of defense products and subject to the conditions contained in this STANAG.

The procedures for requesting GQA and selecting an appropriate AQAP are:

- AQAP shall be requested in accordance with AQAP 2070;
- This request shall contain all necessary information;
- The delegator shall ensure that the delegate receives a copy of the contract;
- The selection of AQAP shall be in accordance with AQAP 2009.

GQA shall be implemented based on the guidance given in AQAP 2070 and according to agreement between the Delegator and the Delegatee. GQA shall address the following topics, unless otherwise agreed:

- Notification of unsatisfactory conditions;
- Certificate of conformity (C of C);
- Release for delivery;
- Deviation permits and concession;
- Delegator's participation at the performance of the contract at the supplier premises.

5. Using AQAP in Romanian Armed Forces

As a consequence of signing STANAG 4107, the GQA activity in Romanian Armed Forces is governed (but not limited) by the guidance defined in following publications:

- AQAP 2070 – Mutual Government Assurance Process.
The intent of this publication is to standardize and harmonize the process by which the Participating Nations request and provide GQA to each other. Also, this publication provides instruction detailing what is considered the minimum to fulfill Nations' commitments within STANAG 4107.
- AQAP 2105 – NATO Requirements for Deliverable Quality Plans.
The purpose of this publication is to define the requirements for Quality Plan in accordance with AQAP 2110/2120/2130;
- AQAP 2110 – NATO Quality Assurance Requirements For Design, Development and Production;

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This publication contains requirements which, if applied appropriately, provide confidence in the supplier's capability to deliver products that conform to Acquirer contract requirements.

- AQAP 2120 – NATO Quality Assurance Requirements For Production;
This publication contains the requirements that address to the system that provide products, in order to satisfy the contract requirements.
- AQAP 2130 – NATO Quality Assurance Requirements For Inspection and Tests;
This publication is mainly focused on requirements for inspection and tests for systems that provide products that have to satisfy the Acquirer contract requirements.

Also during the process of GQA we use the following publications:

- AQAP 2131 – NATO Quality Assurance Requirements For Final Inspection;
- AQAP 2210 – NATO Supplementary Software Quality Assurance Requirements to AQAP 2110; Etc.

6. Conclusions

The GQA is a complex activity performed by the MBCAS.

The MBCAS performs GQA based on MOND Suppliers requests.

Based on certifies emitted, the MBCAS have realized the List of Certified Suppliers (LCS). The LCS shows that the suppliers have been certified by the OMBCAS and fulfilled the AQAP requests.

According to STANAG 4107, the GQA with USA is unrolled based on mutual agreement. The Armaments Department is in final stage of signing a mutual agreement for the GQA activity.

Due to ratification of STANAGs and AQAPs adoption, combined with MBCAS audits, suppliers modified Quality Management System, being now competitive and compatible with suppliers from other NATO countries.

By adopting AQAP 2070 MBCAS founded common and conform procedures with the rest of NATO countries in order to answer on time and correctly to the GQA requests.

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TIME MANAGEMENT -
IDEAS TO IMPROVE TIME USAGE IN A MILITARY UNIT

Emil CRINTEA

Joint Logistic Command

Abstract:

The temporal factor is an objective dimension of the human existence and activity. Everything takes place in the context of the inexorable flow of time. Every action and ongoing processes, natural and social phenomena and events are related and judged with reference to time. Time is the factor that imposes limits to any activity. Moreover, it is perishable and can not be stored. Time is a resource like any other but in one way it's a unique resource. Its peculiarity is that, once lost, can not be recovered. It is one of the most important, that can increase efficiency, so that the proper management of time is an essential skill. This can lead to the increasing of personal productivity, allows us to concentrate on the priorities and in the end, have a direct effect on the improvement of the efficiency and on the entire success of the organization.

Key words: time, management, plan, priorities, objectives, tasks, problems, agenda, subordinates.

1. Introduction

According to Horatio Nelson “Time is everything: five minutes can be the difference between victory and defeat.” On the other hand - according to Peter Koestenbaum - “successful use of time is a function that depends on the enthusiasm, energy, joy, hope, authenticity, health and love of work. It is also related to self-acceptance, confidence that a person has within itself” [1]. It seems that we do not appreciate time at its real value. In accordance with some studies, we waste 60% of work time, mostly due to the absence of clear objectives, planning, priorities and perspective.

Proper management of time is a difficult task. It does not exist a kind of magic formula and all kind of unpredictable events – so as those who come and interrupt us from what we do – often seem to conspire to prevent the triumph of good intentions.

There are few people that organize their time with maximum precision but for sure some people are better skilled in doing this than others. Perhaps it is a matter of attitude.

They do the things as follow:

- consider that time management is perfectible;
- admit the fact that details matter;
- take into account the necessary time for whichever action;
- do their best to do so to be closer to their ideal time management.

Most probably, little steps mean a lot. Maybe five minutes saved don't represent too much but if these five minutes will be saved for each work day of the year, two days and a half will be at your disposal. Another way is to save time whenever we do various things and in

TIME MANAGEMENT – IDEAS TO IMPROVE TIME USAGE IN A MILITARY UNIT

order to do this, we must treat time management as a habit and offer a proper importance to this resource.

2. Some ideas of time management

I identify some ideas both for every employee and for personnel with management functions. Of course, ideas for every employee are suitable for personnel with management functions, too.

2.1 Utilization of Pareto's law

This law is also known as the law of 80/20. In this law cause and effect are met through a ratio. This means, for example:

- 20% of time in a working meeting will lead to approximately 80% of the decision taken;
- 20% of reading materials that we get at our office will provide us 80% of piece of information that we need at our job.

That is why our attention has to be focused on key-aspects that have an effect of utmost importance. We also have to reduce the time spent with minor things and, if possible, even to eliminate this kind of time.

Maybe sometimes it is difficult to establish all the key-aspects. That is way, it is necessary to read again our job description and to see the time spent for each task as well as to decide which activity has the most important effect.

2.2 Ideas for every employee

2.2.1 To see where time is being wasted

Every improvement of our time management involves that we know precisely how it is spent our working time presently. In order to avoid some mistakes here, it is necessary to check again our agenda. There are two ways through we can do this:

- firstly, we could make an estimation through assumptions using percentages or a simple diagram. Then, we have to choose the main types of actions that define best our work such as: writing, calling, meetings, planning, PC working and so on;
- secondly, we could have a log of our working time that gives us a clearer image if we record daily our activities during at least one week.

2.2.2 To plan and work – to work and plan

For sure, every progress in our time management requires a plan. This must be in a written form and must be reviewed and updated daily. In a simplified version, this kind of a plan consists of: a daily plan – our program notebook, a weekly plan, tasks that appear periodically and a plan for the next month. The weekly plans and the plans for all the months can be in a singular document. This is the key factor that determines a discipline of time management and offers us all the information we need. Based on this, we can choose what to do, what to postpone, what to ignore, the order to solve problems and so on. It might seem that we shall spend some time to make these plans but once done, we probably shall do the right things at right time and, all in all, we shall save more time than we spend for making the plans.

2.2.3 To establish clear objectives

From our perspective, the objectives must be specific, measurable, attainable, realistic and time scheduled. Clear objectives are really important and a lack of precision can affect every aspect of our work, not only a proper time management. Most of what we have to do for a proper time management is closely related to taking decisions regarding priorities and all this can not be solved if it doesn't exist the foundation of clear objectives.

2.2.4 To meditate and gain

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It is very interesting that some methods for saving time require an initial investment of time. It seems to be paradoxical to spend time in order to save time. There are some situations when we consider that it takes less time if we do ourselves a task than we sub-delegate this task to somebody else who will do this task. If we spend for example ten minutes to explain and show him what to do, the spent time is both of our time and his time. But for a task with a periodically frequent this is the best way to save time. This example is better applicable for personnel with management functions. For every employee, an example could be that was described in section 2.2.2 which refers to the time spent for doing plans and which will generate time saved.

2.2.5 To plan the emergencies for saving the important things

Sometimes might be difficult to establish the order of priorities even if we have in mind the Pareto's law. The cause is related with the controversial debate on emergencies versus important things. Both urgent things and important things generate the stress to be solved before any other thing. We can organize this type of things in four categories:

- urgent and important;
- important, but no urgent;
- urgent, but no important;
- neither important nor urgent.

The things that require immediate action must be solved. The things that can be postponed must be scheduled in order to allocate necessary time for solving.

2.2.6 To protect yourself by the favorite things

Most of people spend too much time for tasks they enjoy and probably perform very well. For sure, this is related to intrinsic motivation. But here is a danger to be perfectionist, to do more than is necessary, to spend more time and finally to do things at a standard that isn't necessary.

2.2.7 To aim to the influencing of certain outcomes

All things we do in time management is for increasing efficiency. There are some things we have to take into account such as:

- to clearly connect things that must be done with general objectives in order to be always in the proper way;
- to be capable to identify and concentrate on essential things;
- to spend less time with irrelevant things;
- to achieve more objectives in parallel in order to save time;
- to avoid distractions and interruptions factors.

2.2.8 To use check lists

Every routine work could make you stop thinking of what you are working at. But if you do something wrong or incomplete, how much time will you lose? In order to eliminate the necessity to do it again something and all the trouble generated by a thing done incompletely, we must take into account the importance of checklists. Even than you have any doubts, the checklists will lead to time saved.

2.2.9 To keep it brief

For sure, brevity of expression leads to time saved for everybody. For us, if we refer at speaking and writing and for the people we address to, for listening and reading. But there is a warning. Even if we keep it brief, we must do in such way in order to be very well understood. Otherwise, every misunderstanding will lead to time lost.

2.2.10 To have a clear agenda

As organized we shall be, we can not hope to keep in mind all the data about what we have to do. That is way, we need a clear agenda. This agenda should contains

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enough clear details and shows how much time we allocate to our activities. We can also organize a clear agenda using a PC together with other electronic agenda. For the agenda in a written form, we must update without corrections which become illegible.

2.2.11 Not to be a perfectionist

This doesn't mean to adopt a careless style of working. In some cases, the perfection is not strictly necessary. Some things must be done carefully but without spending time in order to do perfect every detail. It is necessary to find a balance or to establish what things can be done well, better, best or acceptable.

2.2.12 To have an overview

Not everybody works from a day to another. Many employees have to work having in mind a period of time that can be for weeks, months or even years. The usage of a planning element could be very useful. We must have an overview on a period of time and see how some things are connected.

2.2.13 To avoid general confusion

Everybody face with a lot of time interruptions and the administrative part is growing too much. But we must never confuse an occupation with an achievement. The fact to identify the difference between urgent things and important things must for you to get use to in order to manage time properly.

2.2.14 To set your rules on time

When some things are forgotten, it will appear problems that will lead to lost time. We will discover these things, we shall try to solve them but we shall affect other things or tasks and most probably we shall forget something. That is why, we have to set some time rules.

2.2.15 To deal with phones that interrupt you

We must decide quickly which calls we shall answer or not. Of course, some calls are very important and cannot be neglected but in other cases we must reduce the number of interruptions. We can avoid, postpone or limit some calls or even we can prepare some type of polite answers in order to save time.

2.2.16 To say no to some certain tasks

We must say NO to some tasks, taking into account our priorities. For example, we can refuse:

- some colleagues: in some cases we help each other but in other cases not. If we refuse every time, our colleagues will avoid us but if we offer our help all the time, everybody will consider that we are weak and we probably shall do too many things. The key is to keep a balance here;
- your subordinates: they need some support but this does not exceed certain limits – we must decide how much time we shall spend with our subordinates and assure that this time is not spend in vain.

2.2.17 To respect break times

We must respect our break times. After a break we shall be more productive, with a clearer mind. We can be back to our work with fresh forces. After a break, everything becomes clearer and we spend less time to solve our tasks.

2.2.18 To write quickly

We must learn to write quickly and well. Writing is a skill and can be improved. We must avoid writing large and complicate documents if it is not necessary. This is related to section 2.2.9 about to keep it brief.

2.2.19 To plan your things according to day periods

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We must try to identify those day periods in which we are more efficient. Most of us are efficient during the first part of the day. The idea is to identify what type of person is everybody and to plan our daily activities and tasks in accordance with those day periods in which we are more efficient.

2.2.20 To avoid unnecessary trips

Every short trip or normal trip requires time. In order to avoid spending your time without usage, you can take into account some alternatives:

- use the phone if it's possible;
- write and send an e-mail;
- for personnel with management functions: send somebody else in our place if it's possible and call subordinates to our office.

2.3 Ideas for personnel with management functions

2.3.1 To give clear orders

For sure, clear orders in written form as well as in oral form, save time. For some specific tasks clear orders are very useful especially for difficult and unusual tasks which must not be done frequently. Therefore, we must be sure that our orders are very clear. Our subordinates have to be told:

- what have to be done (with enough details);
- why have to be done – it is not a justification but is well known that goals can determine clearer tasks and increase motivation;
- how have to be done – only sometimes when we deliver a methodology;
- the execution time and other details about time scheduling.

2.3.2 To use postponement as a time-saving method

Sometimes, it is better to postpone or even to cancel a meeting if the main reason for this meeting does not exist any longer. It will be saved time. This idea can be useful especially for meetings which are taking place regularly.

2.3.3 To motivate subordinates

Motivation is a powerful force that determines your subordinates to work efficiently and this means time saved, both for then as well as for the personnel with management functions (taking into account that less involvement is necessary).

2.3.4 To provide and take things systematically

If we are able to provide and take things systematically, then we will have the capacity to highlight the proper moment for beginning an action. If the things are left on the last moment or are bad thought, then time is wasted in a hasty attempt to solve things.

2.3.5 To use a clip board

A clip board that is put in a place frequented by everyone creates a space in which some information will remain displayed for a period of time. It is useful to establish and to announce the subordinates that some piece of information will flow only in this form. Subordinates will look for this piece of information only at the clip board and this means time saved.

2.3.6 To avoid other topics discussed at the meetings with a set agenda

For other topics that need to be discussed, it is better to use the monthly meetings without agenda, for each category of personnel, taking into account that there is some kind of meetings with no topics discussed but take place due to the regulation.

2.3.7 To respect hierarchy in giving orders

If we give a task direct to a person that is not directly subordinated to us or we give this task to his boss, we spend the same time. But this kind of person probably has already something to do or has already priorities established. He will have to go to his boss

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and to report about this task, to do it and to report at the end both to us and to his boss. The working time for this person will be affected.

2.3.8 To allocate time for thinking

One of the most important things regarding your practice of time management is to allocate time for thinking and creation for your job and profession. If not, your activities, tasks or projects will be affected in a unwanted manner.

2.3.9 To schedule realistic execution terms

Execution terms must be realistic and we must allocate enough time, especially for the units at the lowest level, which are last units receiving the orders but are first units responding to an order, solving a problem or a task. If the execution term is still short, a solution can be the giving of the orders in the same time, to all the units within the chain of command.

2.3.10 To keep in touch with your subordinates

We must see and talk with our subordinates using MBWA method that means “Management by walking about”. However should be our control methods applied within a unit or a section, there is no replacement for going and seeing what happens, which are the problems and difficulties our subordinates deal with. MBWA is a real help during communication and can save time, suppressing the need to perform multiple meetings.

2.3.11 To delegate or sub-delegate some tasks to subordinates

The delegation or sub-delegation are efficient tools for leading, a method through both parts have benefits: personnel with management functions because have no enough time to solve all the problems and tasks and the persons delegated or sub-delegated because they have the chance to do their best and prove what can they do. But from the perspective of time management is a method for time saving only for personnel with management functions.

2.3.12 To review periodically the conduct of tasks

Other useful way to assure that we have enough time to do priority tasks is to review the precise way in which these run. For sure, the methodology affects the time necessary for carrying out a project.

2.3.13 To train your subordinates

We must take into account that professional training is a priority and will get results in time. We shall save time if a subordinate attend a course and improve his knowledge related to his current position, and knows better what to do and how to do in every detail.

2.3.14 To prepare work plans

For sure, work plans will determine a discipline of time management and offers us all the information we need. Based on this, we can choose what to do, what to postpone, what to ignore, the order for solving problems and so on. It might seems that we shall spent some time to do this plans but once done, we probably shall do the right things at right time and, all in all, we shall save more time than we spent for doing the plans.

2.3.15 To allocate time for the unexpected

We can not provide all things that it happens. But for sure, it will appear some unexpected orders, tasks, problems and so on. Maybe the only way for to waste no time is to allocate time for the unexpected. Otherwise, we shall have overlapping tasks that affects our initial time allocation.

2.3.16 To seek new ways of time management

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It is well known that according to Noel Ticky “the only thing that never changes is that everything changes”. It is true also for time management. There are no ways for ever. We must try to identify new ways which allow us to improve our time management.

2.3.17 To focus on what leads to getting results

We must not mistake between our activities and our results. We are paid for the results of our efforts. We must focus on our real results in our work.

3. Conclusion

Summing up all the things mentioned above we can say that proper time management assures some advantages, such as:

- a clear perspective on our daily activities and priorities;
- the chance to realize systematically and consistently the set objectives;
- the possibility to face, reduce and avoid stress;
- affirmation initiative and proactive action;
- much free time for us and our families.

From this perspective, it is necessary to allocate time for:

- to work (is the price of success);
- to think (is the chance of power);
- to play (is the secret of youth);
- to read (is the fountain of wisdom);
- to laugh (is the music of soul);
- friends (is the way to happiness);
- love (is the pleasure of life).

Finally, let's remember Nicolas Letourneux's words:

“To be miser with time, not to give a moment of ours without receiving in return its value, no to let escape hours from our hands than with economics, not to allow a single day to drain without having more increased our treasure knowledge and virtues.”

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CONFLICT MANAGEMENT WITHIN ORGANIZATIONS

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Abstract:

Every organization wants to be performant and to reach its goals, thus the members of the organization should have the same vision about what they must achieve and the objectives must be clear for each individual and department. In order to do so, there should be found ways of recognizing and resolving conflict between people before this situation might become too serious to affect cooperation.

Key words: Conflict, management, competition, conciliation, negotiation, arbitration

1.Introduction

Any organization wants to achieve goals, which means that the members of the organization have the same vision about what they are determined to achieve and the objectives are clear for each individual and department. In order to do so, there should be found ways of recognizing and resolving conflict between people, so that conflict does not become too serious to affect cooperation. All members of an organization want to keep conflicts to a very low level, to solve problems caused by any potential conflict, not to let any conflict to become an obstacle in your work. This situation exists in any kind of organization, private business or government, political party or non-governmental organization.

Conflict management can be defined as a way of planning to keep away the organization from conflicts when possible and resolving conflicts where they do happen, as rapidly and smoothly as possible.

2. Competition and Conflict

A “conflict” is not similar with a “competition”. A “competition” usually brings out what is best in people, as they struggle to be the best in their activity domain, whether in sport, work or politics. In fact, fair-play competition leads to new achievements in sport, inventions in scientific domains or exceptional efforts to solve a community problem. If the competition becomes unfair, a conflict can appear - and this can bring out what is worst in people.

a. Common causes of conflict

Organizational conflict can have many and varied causes or sources. The most common causes are:

- lack of resources (any kind of resources: material, informational or financial);
- different attitudes or values;

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- divergences in needs, goals, priorities and interests;
- poor communication;
- inadequate structure;
- no teamwork;
- ambiguous responsibilities.

b. Conflict between individuals

People have different styles of communication, their own ambitions, personal political or religious views and very different cultural backgrounds. In our diverse society, there is always a possibility that these differences lead to a conflict between individuals, so we must be aware of this to prevent situations where conflict could arise.

c. Conflict among groups of people

When people form groups, they have a tendency to highlight the things that make their group “special”, “better” or “different” than other groups. This is possible in any domain: sports, works or politics, at any level of a group, and it can transform a fair competition into a destructive conflict.

d. Conflict inside a group of people

Inside an organization or team, a conflict might appear because of the individual differences, like a conflict between people; or because of the competition between factions or sub-groups, similar with the conflict between groups of people. It is the leaders’ and organization members’ job to be aware of the dynamics of the group that can overrun into conflict.

3. Signs and Stages of a Conflict

There are two main types of disputes, which occur especially at the workplace, but they could be noticed in many other situations. These two types are:

- **rights disputes:** happen when individuals or groups of people are entitled by law or different regulations and acts, like a contract or agreement, to have certain rights. These disputes are usually focused on issues related to employment contracts, legal problems or changes made by one part of an agreement in accepted practices or customary ones. This kind of dispute cannot be solved through negotiation, so usually it is settled by a decision, a legal one or by arbitration.
- **interest disputes:** happen where the conflict is a matter of opinion, when a person or a group of people is entitled to have access to a specific kind of resources or privileges (ex. the access to property or better working conditions), and there is no law to establish this. This kind of dispute is usually settled by negotiation or by collective bargain.

a. Stages of a conflict

To handle a conflict means to be aware of its various stages of development. It depends on leaders to identify a conflict issue and to find how far it has developed in order to solve the conflict before it becomes too serious. The typical stages of conflict are as follows:

- **potential conflict:** potential for conflict exists because of the lack of resources, of a common language or because of the diversity of culture, and it may turn

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into conflict if the people involved are not willing to accept the existing diversity;

- **latent conflict:** a particular situation, which involves competition, could degenerate into a real conflict, at the workplace, at a political meeting etc. where there are clear differences of opinion among the groups of people.
- **open conflict:** a minor incident can turn suddenly into a real conflict.
- **aftermath conflict:** when a specific problem looks like it has been resolved but the potential for conflict still exists. Actually, the potential of conflict may be even greater than before, if a person or a group of people think that they are involved in a confrontation, a win-or-loose situation.

b. Signs of conflict among individuals

Both leaders and organization members should be aware and should pay attention to the signs of conflict between colleagues, in order to be ready to act to reduce the conflict or even to resolve it by getting straight to the core of the issue. Typical signs of conflict may include attitudes like these:

- avoiding or not speaking to one another;
- arguing or contradicting one another;
- intentionally being non cooperative with others to the loss of the team.

c. Signs of Conflict Among Groups of People

Similarly with conflict among individuals, leaders and organizations' members should be aware at latent conflicts among factions or groups of people and if a conflict situation occurs, they should react before conflicts degenerate and become open and destructive:

- group meeting to discuss issues separately, even if they affect the entire organization;
- one group being ignored by the others when organizing an event which should include everyone;
- groups using aggressive slogans or symbols to demonstrate that they are right and the others are wrong.

4. Teamwork and cooperation

Any organization wants to be effective and to work efficiently, that's why teamwork and cooperation are essential in an organization. One way for building teamwork is to have a similar goal that means that not only leaders but also organization members are dedicated to the same objectives and they all are aware of their responsibilities in reaching those objectives. To achieve teamwork and to minimize potential conflict, team members have to:

- share information with each other, to keep everyone in the group up to date;
- show good expectations about their colleagues from the organization;
- empower and encourage one another to achieve their goals;
- work like a team, encourage morale and protect the reputation of the group;
- detect and reduce any potential conflict determined by the differences between people.

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5. Managing and Resolving Conflict Situations

a. Collective bargaining

Because some groups may be antagonistic, it is necessary to have an agreed mechanism to discuss and resolve any situation. This process is named “collective bargaining” because representatives of every group work together to find out a collective solution. The practice has shown that this approach could go to a generally agreed solution, occurred in a democratic process, where groups of people have to find ways to cooperate within their organization according to their agreed rules and procedures.

b. Conciliation

The definition of the conciliation is “the act of procuring good will or inducing a friendly feeling”[1]. The labor’s legislation from South Africa states that, for the conciliation process in the workplace, where there are groups in conflict unable to reach to a common solution, they can come once again to try to resolve their differences [2]. Workers usually attempt this before making other steps to a strike or before taking a lockout by management and it has become more useful to have a facilitator involved in the conciliation process. In the same way, any other organization should try first to reach conciliation.

c. Negotiation, mediation and arbitration

There are three methods of resolving situations when the stage of open conflict has been reached:

- **Negotiation:** this is a process where the authorized representatives of groups in a conflict situation are encountered in trying to resolve their differences and to reach an agreement. This process is planned and it is performed by the representatives of groups, in order to reconcile the differences between the groups and to reach agreements by consensus. The result is often dependent on the power relationship among the groups. A negotiation often means compromise – every group has to reduce or give up one of their demands in order to succeed in another. Negotiations are used to solve conflicts on a large scale, in workplaces, political and community groups.
- **Mediation:** when negotiations fail or cannot go further, parties often call for an independent mediator. The mediator will try to facilitate an agreement between the parties involved in the conflict. This mediator plays an important role in the process, he is an advisor for all groups, acts like a conciliator and makes suggestions for possible solutions for the conflict situation. In mediation, mediators are only advisors, they have no decision power and cannot force the conflicting parties to resolve the conflict. Mediators must be skilled and able to gain the conflicting individuals’ trust and confidence.
- **Arbitration:** means that an independent person acts as an adjudicator or judge in a conflict, and decides on the terms of the agreement. All parties in a conflict situation agree on the person of the arbitrator, and that the decision that will be taken by the arbitrator will be obligatory for all of them. Arbitration is neither the same with mediation nor with negotiation. It does not encourage the continuation of collective bargaining, the arbitrator just listens carefully and investigates the demands and counter-demands of the parties and plays the role of the decision-maker. Organizations and people from organizations can decide

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to have a single arbitrator or more arbitrators to whom they owe respect and whose decision they have to accept as final, if they want to solve the conflict.

d. An effective mediator

An effective mediator means a person with certain skills, capable to achieve credibility of the conflict parties and to obtain results in mediation act. He must have:

- a demonstrated rate of success in mediation or negotiation activities;
- the ability to achieve the trust, acceptance and cooperation of conflicting parties;
- a clear judgment in identifying the real problems and in offering useful solutions;
- knowledge about the structure of the organization, about the conflicting parties, and about applicable laws;
- diplomatic skills, but with the necessary power to persuade and strong character to nudge the participants towards an agreement.

e. The mediation process

The mediation process can be divided in three phases:

Phase 1: Introduction and establishment of credibility

In this first phase, the mediator has only a passive role. His main task is to make the conflicting parties to trust and accept him, to think that he is able to assist them fairly, and to make them believe that they can rely on him. An good mediator must leave the discussion to the conflict parties, but listens carefully and asks proper questions to identify the origins of the dispute and to highlight a possible settlement of the dispute. Once the mediator achieved trust, credibility, and having enough background knowledge, he can persuade the conflict parties to continue the negotiations, possibly with a new perspective to obtain an agreement.

Phase 2: Guiding the Negotiation Process

The second phase is the one in which the mediator is more actively involved in steering the negotiation process. The mediator can put on recommendations to the conflict parties, try to establish the each party's resistance point and to discover the domains where a compromise could be reached. A good mediator persuades parties to come up with proposals and counter-proposals and, when a feasible solution, begins to insist on or even put pressure on the participants to accept a settlement.

Phase 3: Movement to a Final Agreement

A good and experienced mediator knows when it is time to use diplomacy and when to put pressure to obtain the final agreement of the conflict situation. In order to obtain and maintain trust and credibility from the involved parties, it is important to be aware at the timing and sensitivity of personalities and strategic positions. The mediator might use direct discussions with every group or individual involved and in the last phase he may outline a suggestion for consideration. If it is reached a final settlement, the mediator's role is to assist the parties in the outlining their agreement, ensuring that both parties are pleased with the terms, phrasing and conditions of the document.

The mediation process is very dynamic, but delicately tuned. An experienced and good mediator is forced to be inventive, but flexible, not to impose anything to the parties

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in conflict. At last, a mediator can give some advise and can persuade parties to reach an agreement.

6. Conclusion

Because of the differences between people it is not so rare that in an organization should occur various stages of conflict, but it is the manager who must have the ability to identify the conflict from the first stages and to apply methods of resolving the situation, not to degenerate into a real conflict. Applying the methods of managing and resolving the conflict situation, every manager can keep the organization stable and able to achieve their objectives.

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**E-LEARNING IMPROVEMENT
IN AIR FORCE APPLICATION SCHOOL**

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1.Introduction

The “Aurel Vlaicu” Air Force Application School assures the initiation in career of the students (officers) who graduated "Henri Coandă" Air Force Academy and of those who were hired from external source (indirect career).

Air Force training and education programs are designed to develop well trained officers, enlisted and civilian personnel in the critical thinking skills and technical expertise demanded by today's military challenges. E-learning enhances traditional course development by blending the latest and best information and technology available with legacy systems and methods. Resident program curricula can be enhanced by reusing products developed and utilizing technology insertion in training and education programs.

The Chief Information Officer (CIO) at the Air Force Application School must have primary responsibility to ensure that Information Technology (IT) is acquired and information resources are managed in a manner consistent with statutory, regulatory, and School requirements and priorities. The CIO must provide management advice and assistance to the Commander Deputy and to other compartments chiefs on information resources investment and operations. The CIO also promotes a shared corporate vision about the compartment's information activities and provides services to effectively manage information and to provide value-added systems and infrastructure.

2.Current Available Resources

Physical Facilities:

- Computers renewed on four-yearly schedule
- Discipline specific labs (32 computers) and general access labs (40 computers)
- Local network (Intranet)

Software and Electronic Communication

- Email, FTP and print-servers
- Course management systems (WebCT)
- Web based file servers (only in Intranet)
- Courseware CD ROMs
- Software collections

Services

- A library with electronic reserves, beginning access to e-books, and many online databases (some full text, most accessible on INTRANET)

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- Online training (CBT) and documentation for over 15 courses.
- Online registration for students
- Online exam server

3. Vision, strategic direction and goals

3.1. Vision

Provide knowledge anywhere and anytime for our students.

Students must develop the knowledge and skills to make effective use of digital resources and services during their training program and in their careers. Students engaging in e-learning need the resources, instruction, and interaction with peers, staff, and necessary assistance all available at the desktop, in campus, in classrooms, study locations. Teaching and learning to meet this set of e-learning priorities requires:

- virtual library and information service, with universal access and universal support;
- an integrated approach to information resources, services and technology;
- a robust and flexible network;
- universal access to requisite technologies and services;
- support and resources for the e-learning community.

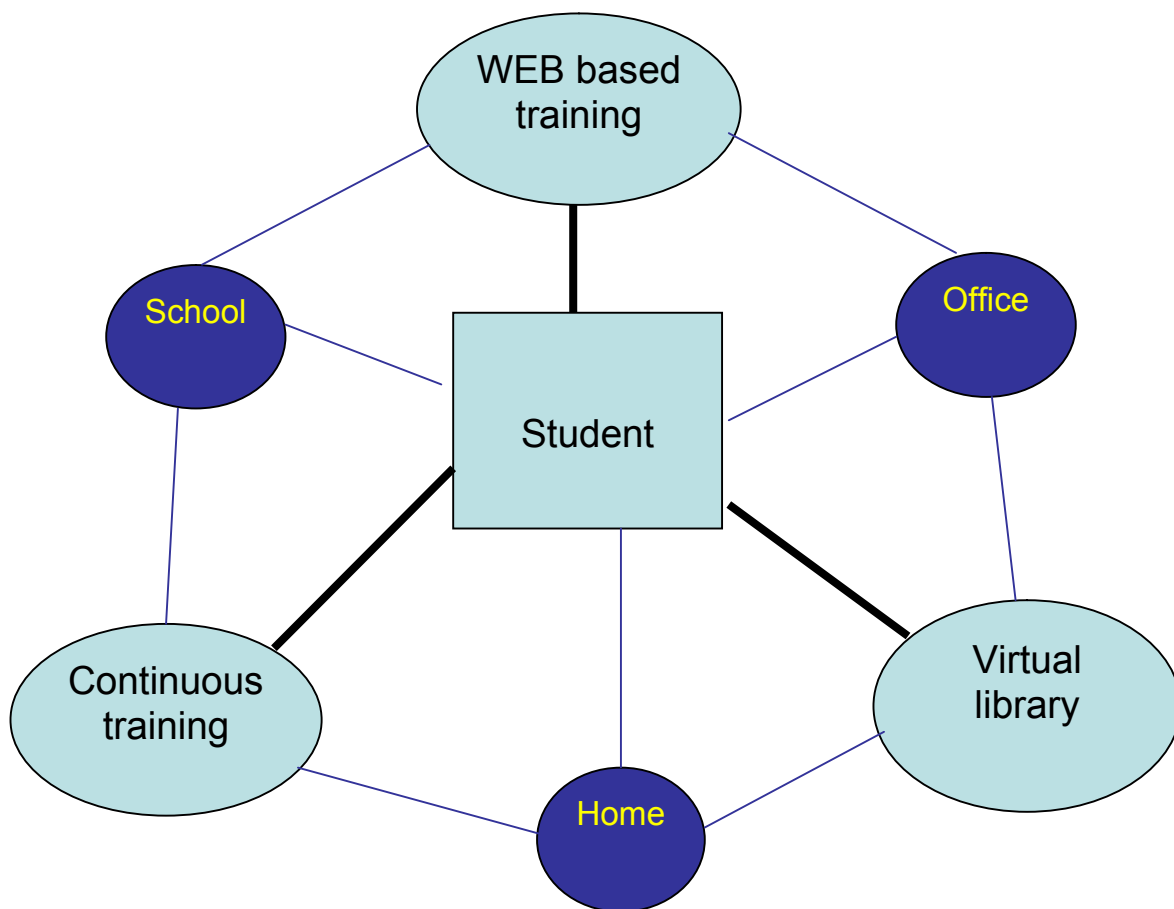


Fig.1 AFAS E-learning VISION

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3.2. Strategic Direction and Goals

We seek to support e-learning through sweeping change that includes the following strategic goals:

- support learning by delivering information resources, support and services in all forms (books, journals, newspapers, multimedia, etc) directly to student whether local or distant;
- develop and implement the process of moving from library and information resources, services and support originally conceived and manifested in buildings to a system that is functionally oriented, in which emphasis is on library and information resources, services and support delivered to students wherever they may be.
- Identify the development of student information and technology literacy as one of our highest priorities. Students must enter the university with requisite information and technology skills, or learn appropriate material prior to the beginning course. SAFA must integrate resources for e-learning into their curricula and across their programs.

4.Suggested Action Steps

- **Provide Enhanced Library Services for the E-Learning Environment**
 - a. Expand availability and use of customized information portals (Library, Course, Exam). This should be done in conjunction with the SAFA planned portal.
 - b. Refocus interactions among teachers, information technology personnel and librarians to work as teams to provide user services, user education and user assistance.
- **Support Student Learning and Development through Technology**
 - a. Develop wireless access.
 - b. Investigate the possibility and feasibility of developing a laptop purchase plan for teachers and students.
 - c. Increase Internet-based access.
- **Support E-Learning Course Development and Delivery**
 - a. Develop a proactive environment to support the advancement of e-learning.
 - Support the development of a virtual campus that complements the traditional, physical campus
 - Establish an institutionalized program, similar to that for textbooks, for the acquisition and dissemination of course related software
 - Work with Networking, Desktop Support, and Training Services to determine infrastructure needs.
 - b. Prepare a plan for promoting the integration of e-learning into curricula by teachers and staff.
 - Meet with teachers, staff and students to gather ideas
 - Assess teachers, staff, and student needs
 - Assign Committee to create the plan
 - Develop e-learning instructional design and development teams. Teams will:

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- have expertise in instructional design, information organization and access, Web development, distance education, courseware, and software;
 - create awareness and work closely with training departments to integrate e-learning in the curriculum ;
 - be available for scheduled work on development projects;
 - include instructional designers, librarians, Web developers, and student technical assistants.
- **Support Development**
 - a. Intensify development of information and technology literacy through workshops, computer based training and customized information access.
 - b. Develop a proactive environment to support teachers and staff development in e-learning areas.
 - Develop infrastructure for teachers and staff to promote efficient use of technology for teaching and learning
 - Share information concerning e-learning initiatives among groups and individuals
 - Work to identify grant funding opportunities
 - c. Address intellectual property issues.
 - d. Create a reward system to support the use of technology in the classroom.
 - Rewards should include time, support, and other incentives.
 - Integration of technology in the classroom must also be rewarded in the merit, promotion.
 - **Expand support for both on-campus and off-campus learners**, beyond a standard 7:45 a.m. to 4:30 p.m. work day.

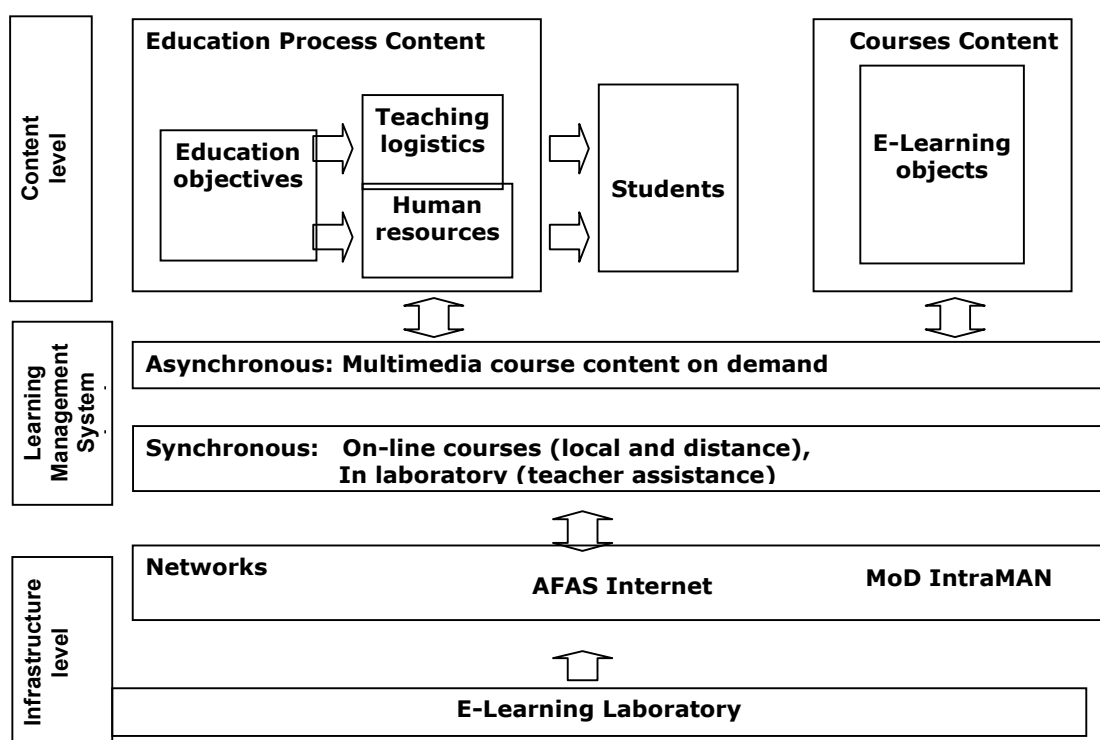


Fig.2 AFAS E-learning model

E-LEARNING IMPROVEMENT IN AIR FORCE APPLICATION SCHOOL

5.Resources Needed For E-Learning

Continual Improvement of the Campus Infrastructure to Include:

- a stable network;
- network access from non-instructional spaces, including public areas (only for unclassified material);
- adequate bandwidth;
- multimedia production equipment & software.

Consistent and Reliable Support for E-learning, to Include:

- predictable and adequate funding sources for staffing, project development, and technology resources;
- additional staffing for instructional design teams;
- technical support and training available on campus, off campus, via email, Web, phone, in person;
- regular replacement and maintenance of resources;

6.Conclusions

Instructional strategies used to incorporate e-learning should be tracked and evaluated to determine their effectiveness in improving learning outcomes, while containing costs. It is recognized that although it is desirable to reduce costs, learning outcomes must be maintained or improved. During this process, it will be recognized that instructors who explore new instructional methods require time and appropriate support to develop, pilot, and revise their practice.

All instructors should be able effectively to identify, acquire, and integrate learning objects. This will be achieved through a combination of enhanced professional development activities about digital resources and the ongoing support of e-learning specialists.

Successful preparation for online learning is not significantly different from classroom preparation. As with any new concept, however, it is important for an instructor to communicate how existing practices integrate with a new concept (learning online). In an era of "lifelong learning", skills for acquiring knowledge play a greater role in success than do knowledge concepts (as they often cycle to obsolescence).

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**“DEFENSE RESOURCES MANAGEMENT
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**HUMAN RESOURCES STRATEGY IN THE SCIENTIFIC
RESEARCH CENTER FOR CBRN DEFENSE AND
ECOLOGY**

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Abstract:

Scientific Research Center for CBRN Defense and Ecology (CCSACBRNE) is a part of the Military Equipment and Technologies Research Agency (METRA), under the Coordination of Department of Armament. CCSACBRNE has been continuously authority of consultancy and technical expertise of the Ministry of National Defense in the field of Chemical, Biological, Radiological and Nuclear (CBRN) defense. After 1989 there were a number of changes of technical, economic, social and juridical with important consequences on research and development process. Most technical and economic problems were surmounted by great flexibility and constant adaptation to economic and political environment. However, the challenges of human resources prove most difficult to overcome, with consequences on the future of the institution. This paper presents a proposal for a strategy designed to support human resources.

Key words: CBRN, scientific research, challenges, human resources, strategy

1. Introduction

By ministerial approval on the report of the Romanian General Staff no. 665 from October 31st 1924, Section IV – Gases of the General Staff became the Gas Defense Service. This service included at that time three major components: a **research laboratory**, the central gas mask workshop, a gas school. The name of the research laboratory was changed during the years, such as: Research Laboratory of the Gas Defense Service (1924-1934); Army Studies and Experiments Laboratory (1934-1951); Central Laboratory 508, Chemical (1951-1959); Central Laboratory 124, Chemical (1959-1966); Scientific Research Center for Military Chemistry (1966-1998); Scientific Research Center for NBC Protection Materiel (1998-2001); Scientific Research Center for NBC Defense and Ecology (2001-2010); Scientific Research Center for CBRN Defense and Ecology (present name since 2010).

Since 1998, Scientific Research Center for CBRN Defense and Ecology (CCSACBRNE) is a part of the Military Equipment and Technologies Research Agency (METRA), under the coordination of Department of Armaments.

CCSACBRNE has continuously been a consultancy and expertise technical authority of the Ministry of National Defense in the field of chemical, biological, radiological and nuclear (CBRN) defense, with the primary mission to develop specific technologies and equipment for the use of all military services, the civil protection, and

other structures of the National Defense System (such as Romanian Intelligence Service, Romanian Ministry of Administration and Interior, etc.).

CCSACBRNE actual field of research consists of (but it is not restricted to):

- synthesis of special products, such as composites, nanomaterials, pyrotechnics, high explosives, etc.;
- chemical analyses by various analytical techniques, chemical characterization of chemical warfare agents and CBRN complex systems;
- technologies for CBRN detection, identification and decontamination;
- environmental analyses, ecological depollution/decontamination, chemical and biological agents monitoring;
- materials and equipment for chemical, biological, radiological and ballistic protection, both individual and collective;
- numerical simulation of high speed phenomena;
- analysis and characterization of new pyrotechnics, explosives and concealing systems;
- military dosimetry.

When evaluating the scientific and technical activity of the Scientific Research Center for CBRN Defense and Ecology (CCSACBRNE), it should be considered the affiliation to the National Ministry of Defense (MoD) and that the researched topics are sometimes the subject of military regulations (sensitivity of the researched technologies and products, criteria for national and international, especially NATO and EDA, military secrecy and so on).

Also, the funds for the research projects come mainly from two sources: the research and development sectoral plan (RDSP) of MoD and the calls initiated from the National Authority for Scientific Research (NASR).

2. Recent years' challenges

After 1989 there were a number of changes of technical, economic, social and sociological. The legal framework has evolved rapidly, with important consequences on research and development process. Evolution of economic phenomena more difficult to predict require organizations to adapt quickly.

In the past 20 years, the number of research centers has decreased dramatically, most fell prey to real estate sharks. Low salaries, equipment failure and poor, and opportunities for research programs in other states have driving gradually to increase the average age of highly qualified personnel in research development (R & D), so that since 2004, about 63% of Romanian researchers were aged over 40 years. In Romania, the number of employees in R & D is 0.46 to one hundred employees, 3 times lower than in EU (1.41 R & D employees to 100 employees).

In the military field the processes were similar, with some particularities. We often hear it said that we do not need research that could be best to abolish these institutions and to buy equipment from other countries. Other say that we are too poor to afford research and development and that the economic, research is a luxury and only the rich can afford it. Today, we can say that only a miracle made the research centers of the army was not disbanded. On the other hand it took a great flexibility to meet challenges and political uncertainty, economic and juridical.

Lack of funds for investments made to increase the number of research projects funded by external sources and the number of testing activities, micro production, intervention CBRN events, developing technical specifications for procurement and perform services for third parties, especially civil institutions.

The main advantages of the Centre were:

- The approach of a large field of research activities (syntheses, analyses of toxic chemical agents for purposes allowed by “Chemical Weapons Convention”, technologies, CBRN decontamination equipment and materials, chemical detection, chemical control equipment, nuclear, biological, chemical, radiological and fire protection, military dosimetry, nuclear control equipment, electromagnetic concealing, high explosives, pyrotechnic compositions and devices, nonlethal and counter-terrorism combat devices, individual ballistic protection, environment balances and authorizations, interventions to CBRN and ecologic emergencies);
- The vast majority of the research activities is unique on national plan (warfare chemical agents detection and identification, chemical and radioactive decontamination of different surfaces, individual and collective protection against weapons of mass destruction, technologies for obtaining antidotes against chemical warfare agents, decontaminant agents, specific drugs, chemical warfare agents neutralization absorbents and catalyzers, specific detection reagents, electromagnetic concealing of troops and combat technique);
- The leaders and the managers have an important experience in coordinating research consortiums and in project management;
- There are modern facilities and analytic equipment in the field: instrumental analysis, detection, decontamination, explosives synthesis and analysis, CBRN and ballistic protection;
- There is a 3rd category nuclear unit, authorized by the National Commission for Nuclear Activities Control for the development of activities in the nuclear field (possession, use and transport of radioactive sources);
- Collaborations and partnerships with research institutes and universities from the country and from abroad are enhanced;
- Collaboration with the economic environment as direct beneficiaries of the products and for research results transfer gained an important attention;
- There are testing laboratories, accredited by RENAR, accordingly to SR EN ISO / CEI 17025:2005;
- the quality management system of CCSACBRNE is certified accordingly to SR EN ISO 9001:2001 for scientific research activities, design, development, microproduction, and reparations/standardization of CBRN defense technique and materials, pyrotechnical, incendiary, explosive, ballistic and concealing devices for military and civil use;
- CCSACBRNE is nationally and internationally renowned as a traditional institution in the CBRN field;
- The high management of CCSACBRNE is very adaptable to the internal and external environment.

3. The challenges of human resource management

The most difficult challenge for our center is in the human resources area.

At present, the structure and the knowledge level of the staff is the following:

- Total staff - 102, from 35 which is directly implied in research;
- 11 scientists with PhD studies, 6 scientists PhD students.

The average age of the personnel involved in research teams is 46.52 and the personnel distribution by age is presented in Fig. 1.

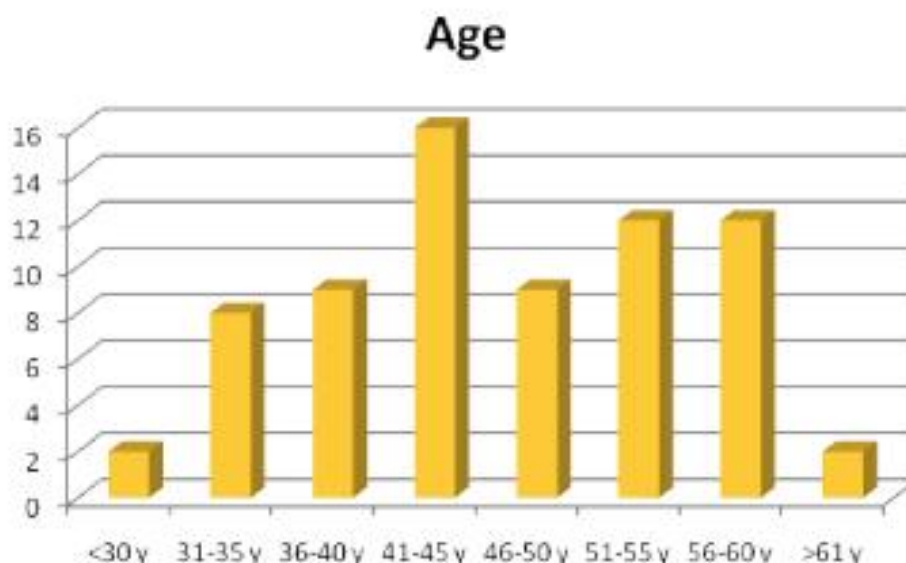


Fig.1. Research staff distribution by age

These data highlight a mature staff, with experience in research, and also the necessity of taking measures of rejuvenation, in the view of assuring the Center's perspectives; since 2008, there were not hired civilians, only 1 military officer, in 2011. In this period, approximately 30 persons left CSACBRNE due to restructuration or retirement, from whom 8 in the last year.

At this rate, the center will disappear within 15 years. Already in some areas of research activity has dropped dramatically while others have disappeared altogether.

The causes are both internal and external. In recent years, the military has undergone a restructuring process, absolutely necessary, but often made without considering the peculiarities of each unit. From this point of view, research units have a separate specific. It is known that usually researchers, doctors and teachers gain experience over time, which makes many times, from 55 years to find them a career peak. By applying undifferentiated restructuring policies, military researchers have been removed very valuable, which seriously affected the activity in certain areas.

On the other hand, until recently, issues of human resources were considered as secondary in the center, consisting of management of cases by the chief of staff. Core functions were chief administrative personnel, juridical and disciplinary and were entrusted over time of persons without any knowledge.

As a result, the Centre has no plan of human resources in accordance with development strategy. In fact it would be difficult under the redundancy process and constantly changing priorities and objectives at the political level. Therefore it was difficult to estimate the number of people needed and the type of skills and competencies they require.

Recruitment processes, training and reward were made arbitrarily without taking into account development goals. Before 1989 the Center staff was selected from among graduates of the polytechnic, engineers typically with very good results, for which military career assure a decent living. With the loss of material advantages, the number of researchers interested in military career declined dramatically. As a result, the Military Technical Academy started to educate groups of military chemists, every ten years. The

consequence was waves of recruitment process, at some point there are only colonels and captains in the Centre. Output forced retirement of the former made all management positions will be filled by inexperience personnel, that do not the absolute necessary stages in the training and command.

Considering that interest in research fall from year to year, hiring of civilian and military were effectuate only in the administrative zone, the main criteria for employment being relationships. Were usually engaged wives of politicians and wives of officers with good jobs in MoD. In the short term, this strategy has favorable consequences, providing the necessary protection in harsh conditions. On long term consequences were not so good, leading to the increase of the administrative staff and tensioning relations between the administrative staff and research. All culminated when 15 scientists were dismissed for other than professional criteria, to the detriment of others who had relationships.

In addition, the share of female personnel, to the detriment of the male and the share of civilians to the detriment of officers, led to the development of new types of disputes.

Change of legislative frameworks of made to reward employees on other criteria than professional criteria.

Civilian researchers are paid by civil legislation while the military are not. As a result, the researchers' salaries exceeded those of the officers with leadership positions. At the same time, civilians are denied work group, even though are working in the same conditions as military. The tensions and dissatisfaction appeared here. To all this add that management positions are military, as a result a civilian will be unable to accede to such functions or for worse.

Massive staff reductions have made the tasks incumbent on a researcher to increase from year to year. If by 1989 the share of research activities was 90%, today it dropped dramatically, fulfilling part-time researchers and micro production tasks, services and intervention to CBRN events. In addition reducing to secondary education staff, their duties were taken over gradually by researchers (washing the laboratory glassware, preparing equipment, small repairs, cleaning).

Unfortunately, these problems have only been aware since 2008, when the economic crisis started to knock at the door and when perspectives of obtaining funds from another sources has decreased dramatically.

4.Human resources strategy

Since 2008 institutional development strategies and plans have been prepared in which first appeared the concept of human resource development strategy. The following objectives and priorities were established the:

- rientation of the scientific research towards priority fields of the endowment with military technique and for the national strategy of R&D, through:
- enhancement of collaboration with armed forces and command structures within MoD with operational requirements, in the view of determining the new technical requirements applicable to the armament systems resulted from the experience accumulated in operational theatres (Afghanistan, Iraq, etc.);
- R&D orientation towards the approach of these requirements through R&D collaboration with firms implied in the endowment and logistic operational support;
- R&D activities reorientation towards research subjects, which lead to products that could easily close the endowment gaps.

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- Development of R&D&I infrastructure, Increase of R&D&I activities performances and importantly, increase of the human resource involved in R&D&I activities, through:

- accreditation of the research fields and attestation of doctoral advisers;
- increase of the number of researchers with PhD studies;
- encouragement of new interdisciplinary research collectives;
- development of collaborations with the academic environment from the country

and from abroad.

On human resources strategy was established the following strategic objectives;

- enhancement of performance standards for the CCSACBRNE staff;
- constitution of research groups on research fields (for all the 7 laboratories);
- consolidation of managerial competences of the management staff (heads of departments and laboratories);

- enhancement of the auxiliary staff efficiency, through a better management and establishment of responsibilities and competences;

- a better and variant policy of staff stimulation, accordingly to the results obtained;

- hiring new personnel: recruiting from young graduates and from experienced specialists with good professional results (PhDs having published in different journals, having gained projects, etc.);

- replacement of the retirement-age staff with young PhDs qualified for scientific research;

- the staff employment will be correlated with the financial resources available and the actual legislation;

- the employment of specialists in research projects (for the projects that require specialties not covered by the CCSACBRNE's staff);

- recruitment of priority personnel from Military Technical Academy graduates in chemistry field;

- maintenance after the retirement age of the experienced specialists, accordingly to the legislation;

- staff selection based on performance criteria, using the actual procedures.

- rapid and efficient integration of the new staff within Center's research structures, through:

- achievement of a minimum one-week stage in all the research teams in the view of familiarization with CCSACBRNE's activities;

- professional assistance from the team leaders and the experienced scientists;

- achievement, from the first year, of research projects in the view of capacities and perspectives evaluation for pursuing a research carrier within CCSACBRNE.

- continuous instruction of the staff through:

- specific specialization courses, formation courses, participation in scientific events, etc.;

- improvement of performance criteria used for the staff annual evaluation;

- reduction of work tasks other research;

- special attention towards safety and health issues, assurance with adequate protection equipment and protection food, annual medical examination of the staff;

- annual evaluation of the staff satisfaction degree.

So far this strategy has started to yield results only in the growth of professional training. Thus, in recent years have found the following:

- there is a permanent increase in the number of articles published in ISI-quoted journals;
- there is an increase in the number of participations in international scientific conferences and congresses;
- there is an increase in number of published books and book chapters in the CCSACBRNE fields of interest;

The publication dynamics in presented in Fig. 2.

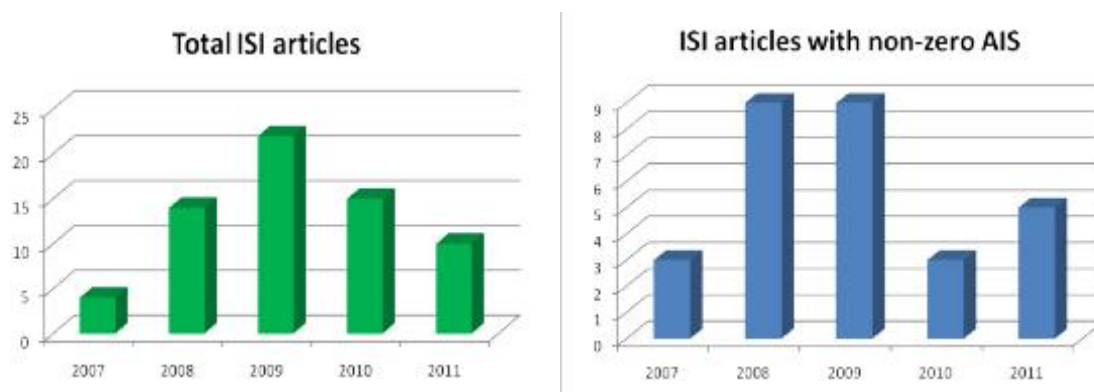


Fig.2. The publication evolution in the period 2007-2011

Also, 11 of 35 scientists have a PhD degree in various areas of interest for CCSACBRNE, such as: chemical engineering, chemistry, mechanical engineering, industrial engineering. 6 other scientists are PhD students in prestigious doctoral schools: University of Bucharest, University POLITEHNICA of Bucharest and Military Technical Academy.

The dynamics of PhD degrees in the evaluated period is presented in Fig. 3.

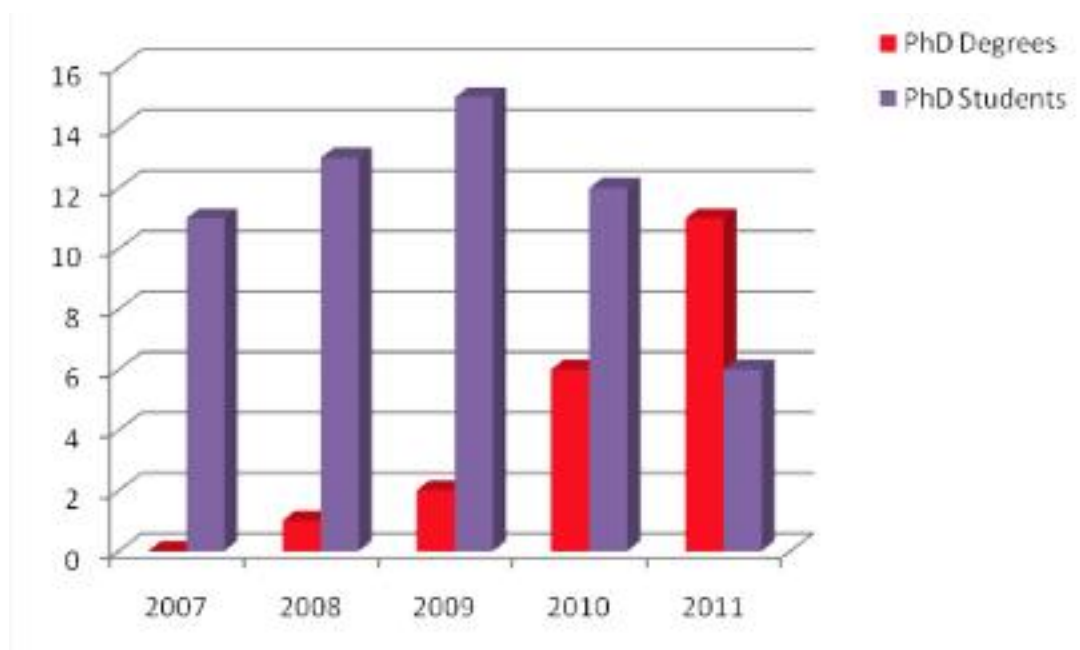


Fig.3. Evolution of PhDs and PhD students

Conclusion

Although CCSACBRNE is permanently investing in personnel training and attestation, unfortunately, being subordinated to MoD, there are not many options for applying our own human resources policy. For this reason much of the objectives can stop just at the stage of desire. However, the fact that we started to pay attention to personal problems, even in the 12th hour is a good thing.

It is obvious that the nature of human resource management problems can not be neglected or treated lightly, especially given that things are changing rapidly from day to day. And the best example is that in the Military Technical Academy of Bucharest a paradoxical situation is appearing: the best graduates are girls [2]. 70% of the actual two Chemistry groups are girls, usually the best prepared. For now, management positions are occupied by men, but are they ready to accept a change?

The survival or not of an institution that will soon turn 90 will depend on the way human resources issues will be solved.

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THE NEW NATO DEFENCE PLANNING PROCESS
RESOURCE PLANNING AND PROGRAMMING

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Abstract:

The political and military process used by nations to provide the types of forces, assets and capabilities the Alliance requires to meet their defense commitments is Defense Planning. It ensures that NATO can undertake the full range of missions it has set for itself. The aim of the NATO Defense Planning is to build up a structured framework, within which national and Alliance defense planning activities can be harmonized to meet agreed targets in the most effective way, while respecting the principle of fair burden sharing and reasonable challenge.

1.Introduction

To accomplish its roles, the North Atlantic Treaty Organization (NATO) needs capabilities, such as military and civilian manpower, weapon systems, ammunition, airfields, transport, logistics support, command and control systems, civilian and military headquarters buildings, etc. In many cases, member nations supply these capabilities; in other cases, they must be procured.

The political and military process used by nations to provide the types of forces, assets and capabilities the Alliance requires to meet their defense commitments is Defense Planning. It ensures that NATO can undertake the full range of missions it has set for itself. The aim of the NATO Defense Planning is to build up a structured framework, within which national and Alliance defense planning activities can be harmonized to meet agreed targets in the most effective way, while respecting the principle of fair burden sharing and reasonable challenge.

Defense planning in the Alliance is a crucial tool which enables member countries to benefit from the political, military and resource advantages of working together. Within the defense planning process, Allies contribute to enhancing security and stability, and share the burden of developing and delivering the necessary forces and capabilities needed to achieve the Organization's objectives.

Resource planning is in the discipline within Defense Planning to facilitate the provision of the resources for the capabilities needed by the Alliance collectively to meet the demands of its tasks and missions. As such it covers national, multinational, joint and common funding; investments, O & M costs; and manpower.

Key features of resource planning and the management processes are outlined in certain NATO documents insuring an overall framework which includes a resource management system that is responsive to Alliance policy and adaptive to changing

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circumstances. The system focuses on achieving closer integration of the Alliance's policy setting, military planning, and resource allocation processes, including co-ordination with the Military Budget and Manpower plan at appropriate points in the resource planning and implementation cycle.

2.DEFENSE PLANNING

The defense planning process prevents the renationalization of defense policies, while at the same time recognizing national sovereignty. Defense planning encompasses several planning domains: force, resource, armaments, logistics, nuclear, C3 (consultation, command and control), civil emergency planning, air defense, air traffic management, standardization, intelligence, medical support and research and technology.

On behalf of the NAC and the Nuclear Planning Group (NPG), the Defense Policy and Planning Committee (DPPC) – formerly called the Executive Working Group – is responsible for the defense planning-related policy and the overall coordination and direction of the NATO Defense Planning Process (NDPP) activities. The DPPC serves as the central body to oversee and provide the work of the NATO bodies and committees responsible for the defense planning domains. It has no responsibilities or involvement in activities pursued by other committees out of the scope of the NDPP. The DPPC works continually on an improvement of the NDPP. In April 2009 the latest process review was concluded with presenting an outline model for the NDPP. This outline model was authorized through the NAC, the NPG and the former “Defense Planning Committee” (dissolved in 2010). An implementation and transition plan for the NDPP was endorsed by the NAC, NPG and the now dissolved DPC to provide practical arrangements to transition to and support the whole process while at the same time implementing appropriate elements of the process.

2.1 NATO Defense planning domains

The NATO Defense Planning contains several Defense Planning Domains in order to ensure that NATO's capability requirements are met in each field of (capability) expertise. With the authorization of the new process model of the NDPP the number of Defense Planning Domains increased from 7 up to 13. The new Defense Planning consists of the following 13 disciplines, from which first 7 are the traditionally recognized ones:

- 1) Armaments;
- 2) C3;
- 3) Civil emergency;
- 4) Force;
- 5) Logistics;
- 6) Resources;
- 7) Nuclear.;
- 8) Air Defense;
- 9) Air Traffic Management;
- 10) Intelligence;
- 11) Military Medical;
- 12) Research and Technology and

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13) Standardization Communities.

The new Defense Planning is characterized through the stronger co-ordination and harmonization of all planning domains.



Fig.1 Overview of the defense planning domains

The necessary staff support is provided by the NATO Defense Planning Staff Team (DPST), which is a task-organized organization including civilian and military expertise from within the different NATO staffs (in general IS, IMS and ACT) and all planning domains. The DPP within the IS offers the secretarial support to the DPST – Core element. To coordinate the work of the NATO DPST as well as the efforts related to defense capability delivery across the various planning domains, an internal coordination mechanism was established. Any aspects beyond NATO Staff competence will be identified for decision in the appropriate committee. The MC is also engaged in the work of almost all planning domains in order to bring in independent military advice.

2.2 NATO Defense planning process

The NDPP consists of the five main functions or steps which are generally sequential and cyclical in nature, although the frequency of the individual functional activities may vary and the function of facilitating implementation is a continuous activity. Any of the constituent elements can be conducted out-of-cycle or at intermediate intervals, if deemed necessary. So in general everything is linked and works together as a system of mutual dependent factors.

2.2.1 Step 1 - Establish political guidance

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The intent is to develop a single, unified political guidance for defense planning which sets out the overall aims and objectives to be met by the Alliance. It translates guidance from higher strategic policy documents (i.e., the Strategic Concept and subsequent political guidance) in sufficient detail to direct the defense planning efforts of the various planning domains, both in member countries and in NATO, towards the determination of the required capabilities. This will obviate the requirement for other political guidance documents for defense planning. Political guidance should reflect the political, military, economic, legal, civil and technological factors which could impact on the development of the required capabilities. It will, inter alia, aim at defining the number, scale and nature of the operations the Alliance should be able to conduct in the future (commonly referred to as NATO's Level of Ambition). It will also define the requisite qualitative capability requirements to support this overall ambition. Any political guidance needs to be written against the background that the majority of capabilities sought by the Alliance are and will be provided by individual member countries. Political guidance will be reviewed at least every four years.

2.2.2 Step 2 - Determine requirements

There is one single consolidated list of Minimum Capability Requirements, including eventual shortfalls. These requirements are identified by the Defense Planning Staff Team, with the Strategic Commands, notably Allied Command Transformation in the lead. The team takes into account all NDPP-related guidance and ensures that all requirements considered necessary to meet quantitative and qualitative ambitions set out in the political guidance are covered. The process is structured, comprehensive, transparent and traceable and uses analytical supporting tools coupled with relevant NATO expert analysis.

Planning domains are fully engaged throughout the analysis, assisting the Strategic Commands in providing a sound framework for further work which, ultimately, needs to be usable by each planning domain.

Strategic Commands must be transparent, while ensuring that political considerations do not prematurely qualify the process during which requirements are identified. This is achieved by seeking expert advice and feedback from member countries, inviting the latter to observe key milestones and decision points, together with regular briefings to Allies.

2.2.3 Step 3 - Apportion requirements and set targets

Target setting initially apportions the overall set of Minimum Capability Requirements to individual countries and NATO entities in the form of target packages, respecting the principles of fair burden-sharing and reasonable challenge.

Initially led by the Strategic Commands, the Defense Planning Staff Team will develop targets for existing and planned capabilities against the Minimum Capability Requirements and cover them in the draft target packages, together with their associated priorities and timelines. Targets should be expressed in capability terms and be flexible enough to allow national, multinational as well as collective implementation.

Each individual Ally has the opportunity to seek clarification on the content of targets and present its national views on their acceptance during a meeting between the relevant national authorities and representatives from the Defense Planning Staff Team. Subsequently, the Defense Planning Staff Team will consider the member country's

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perspective and priorities with the aim of refining the NATO target packages and providing advice on what constitutes a reasonable challenge.

Following discussions with member countries, leadership of the Defense Planning Staff Team will transition from the Strategic Commands to the International Staff. At this point, the Defense Planning Staff Team will continue to refine and tailor individual draft target packages in line with the principle of reasonable challenge. To ensure transparency and promote Alliance cohesion, packages will be forwarded to Allies with a recommendation of which targets should be retained or removed to respect this principle. Allies will review these packages during a series of multilateral examinations.

Agreed packages are accompanied by a summary report, which is prepared by the Defense Policy and Planning Committee (Reinforced), on the targets as a whole. This will subsequently be forwarded to permanent representatives for submission to defense ministers for adoption. The summary will include an assessment of the potential risk and possible impact caused by the removal of planning targets from packages on the delivery of the Alliance's Level of Ambition.

2.2.4 Step 4 - Facilitate Implementation

This step assists national efforts and facilitates multinational and collective efforts to satisfy agreed targets and priorities in a coherent and timely manner.

The aim is to focus on addressing the most important capability shortfalls. This is done by encouraging national implementation, facilitating and supporting multinational implementation and proceeding with the collective (multinational, joint or common-funded) acquisition of the capabilities required by the Alliance. This step also facilitates national implementation of standardization products (STANAGs/Allied Publications) developed to improve interoperability.

The detailed work needed to develop and implement a capability improvement or action plan is carried out by multidisciplinary task forces. These task forces are composed of representatives from all stakeholders, under the lead of a dedicated entity. Each task force is supported by a "Capability Monitor" who keeps themselves abreast of progress in the implementation phase and report to all relevant bodies and committees, providing feedback and additional guidance to the task force leader.

Unlike other steps in the process, this step – or function - is continuous in nature.

2.2.5 Step 5 - Review results

This step seeks to examine the degree to which NATO's political objectives, ambitions and associated targets have been met and to offer feedback and direction for the next cycle of the defense planning process.

The Defense Planning Capability Review (DPCR) scrutinizes and assesses Allies' defense and financial plans as well as collective efforts so as to provide an overall assessment of the degree to which the combined Alliance forces and capabilities are able to meet the political guidance, including the NATO Level of Ambition. The DPCR provides a key mechanism for generating feedback and input for the next cycle. Capability reviews will be carried out every two years.

In parallel with the examination of country assessments, the Military Committee, based on the Strategic Commands' Suitability and Risk Assessment, develops a risk assessment on the military suitability of the plans and the degree of military risk associated with them in relation to political guidance for defense planning, including the Level of Ambition.

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On the basis of the individual country assessments and Military Committee Suitability and Risk Assessment, the Defense Policy and Planning Committee (Reinforced) prepares a NATO Capabilities Report, highlighting individual and collective progress on capability development as it relates to NATO's Level of Ambition.

The Report will also provide an assessment of any associated risks, including a brief summary of the Military Committee's Suitability and Risk Assessment. It will also include an indication of whether the risks identified could be mitigated by capabilities developed by member countries outside the NATO defense planning process or by contracting civil assets. This would not relieve the Allies from the obligation of trying to meet NATO's Level of Ambition from within Alliance inventories, nor would it diminish the need to develop the capabilities sought. However, it will assist defense planners in prioritizing their efforts to overcome the most critical shortfalls first.

The report will also contain further direction to steer capability development.

The process model of the whole new NDPP shows as follow.

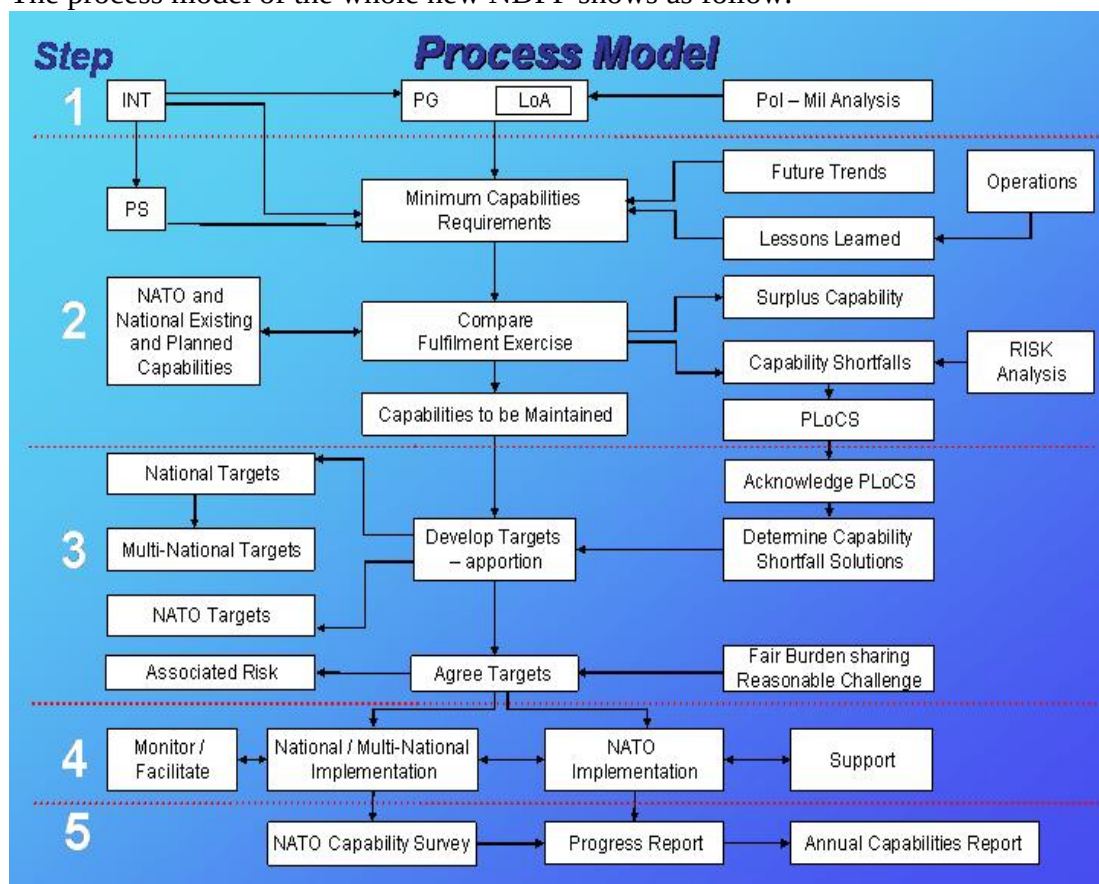


Fig.2 Process model of the whole new NDPP

3. RESOURCE PLANNING AND PROGRAMMING

3.1 Resource planning

Resource planning is in the discipline within Defense Planning to facilitate the provision of the resources for the capabilities needed by the Alliance collectively to meet the demands of its tasks and missions. As such it covers national, multinational, joint and common funding; investments, O&M costs and manpower. Currently NATO's

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requirements are pursued through the Capability Package Process (CPP). The CPP is the primary process through which Resource Planning is fulfilled. Therefore, military requirements will continue to be submitted mainly within the framework of Capability Package (CP) and Stand Alone Projects (SAPs).

Programming can also be done as Minor Works or Urgent Requirements (UR). The NATO capabilities which are 'over' the existing available assets, and also 'above' reasonable expectations of provision from the national resources may be common-funded. This common-funded part of Resource Planning is structured into the three independent resource pillars: NATO Security Investment Programme (NSIP), Military Budget (MB) and International Manpower.

To allow the new capability to function properly all 3 resource pillars must be addressed in general in a CP. For the NSIP, these resource pillars can also be addressed in SAPs, Minor Works or URs. The NSIP pillar of Resource Planning consists of a programme of capital investments in military capabilities, such as Operations, Air Defense and Strategic Infrastructure. While the MB is responsible for the O&M costs running, maintenance, upkeep and repair of existing capabilities (when declared eligible for CF). The NSIP is responsible for the up-front provision of new capabilities and major renovations, upgrades and modifications of existing capabilities.

Currently, resource planning follows a yearly cycle and has a 5-year planning horizon for military CF, which is summarized in the Medium Term Resource Plan (MTRP). The NSIP process is also proposed as a 5 year rolling plan, consisting of a Budget Year and of 4 Planning Years. Any urgent requirements can be addressed on an ad-hoc basis if warranted by specific circumstances. This is the same for Minor Works. SAPs follow the same procedure as CP, but they terminate after the project is completed.

The authorization of the new NDPP affects also the existing CPP. The DPPC (R), the Military Committee (MC) and the Resource Policy and Planning Board (RPPB) provided their advice on proposals for a capability framework for NATO common-funded acquisition. So far no new policy for the existing CPP is agreed.

3.2 The Medium Term Resource Plan (MTRP)

Resource planning is handled through the MTRP. It is the primary document used for short to medium-term resource planning and is prepared on an annual basis by the RPPB. The MTRP aims to facilitate planning stability by providing a five-year outlook of the requirements for military CF in support of Alliance objectives and priorities, assessing affordability of these requirements in the light of the NATO Military Authority's consolidated impact statement and by making recommendations on the resources to be allocated to the MB and the NSIP. The Council discussions on balancing requirements and resources have reinforced the importance of the MTRP as the appropriate vehicle to provide a comprehensive overview of activities requiring common funding (CF) and developing recommendations on resources, ceilings and planning figures.

The MTRP builds on the Consolidated Resource Proposal (CRP) prepared jointly by the NOR and IMS on the basis of inputs from IMS, ACO, ACT, NCSA, NACMA and the Active Layered Theatre Missile Ballistic Defense Programme Office (ALTBMD PO), taking into account IC and BC assessments of the validity of the submitted resource requirements. The CRP aims to identify the resources required to fulfill the required capabilities.

The MTRP is prepared every year and as such, it reports on the use of common funds to achieve NATO's objectives and proposes expenditure ceilings for CF in the

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following year. The NOR provides the staff support to the RPPB for the development of the MTRP.

3.3 Capability Package Process (CPP) – actors involved and overview

A Capability Package (CP) is defined as a combination of national (military and civilian) and NATO funded capital investments, O&M cost, manpower and other associated costs, which, together with the military forces and other essential requirements, enable a NATO Commander to achieve a specific Military Required Capability. The CP focuses on those activities most essential to the strategy as well as the resulting force and command structures and addresses overall resource implications, both national and international.

The CPs incorporate all elements necessary for the package to function and more flexibility in which element of the CP should be considered eligible for CF. Therefore the CP is also an essential planning and programming tool for Resource Management and Capability Management. For NSIP all requirements, as a rule, will be submitted within the framework of CP and compete for funding on the basis of the military priorities established for those packages.

The format and content of a CP consists of three portions, which are the Capability Requirements Definition (RD), Consolidated Resource Proposal and Supporting Documents. The first portion of the CP is the RD, which identifies an Alliance military requirement that may be fulfilled (wholly or partially) through NATO CF and, or International Manpower.

The second portion of the CP provides a comparison between the assets that are needed and the assets that are available or expected to become available in the near term through other actions. It focuses on identifying the required resources (Infrastructure, MB and Manpower) to satisfy the requirement, detailed in the RD, and comparing these requirements with existing capabilities to determine whether there are excesses or shortfalls.

The third portion of the CP groups further documentation. This includes Analysis Worksheets, a proposal for projects with a detailed discussion of their resource requirements in the format of a Project Data Sheet (PDS) (including, scope, cost – investment, O&M and Manpower – schedule: estimated date of authorization request, contract signature and completion), a list of those Requirement Capabilities that are dependent on and inter-related and Operational Assessment. The PDS is the document in which for the first time the provision of required capabilities is translated into different projects, which in turn determine future resource efforts (expenditures).

The following figure gives an idea of the interaction between the different actors within the CPP Process:

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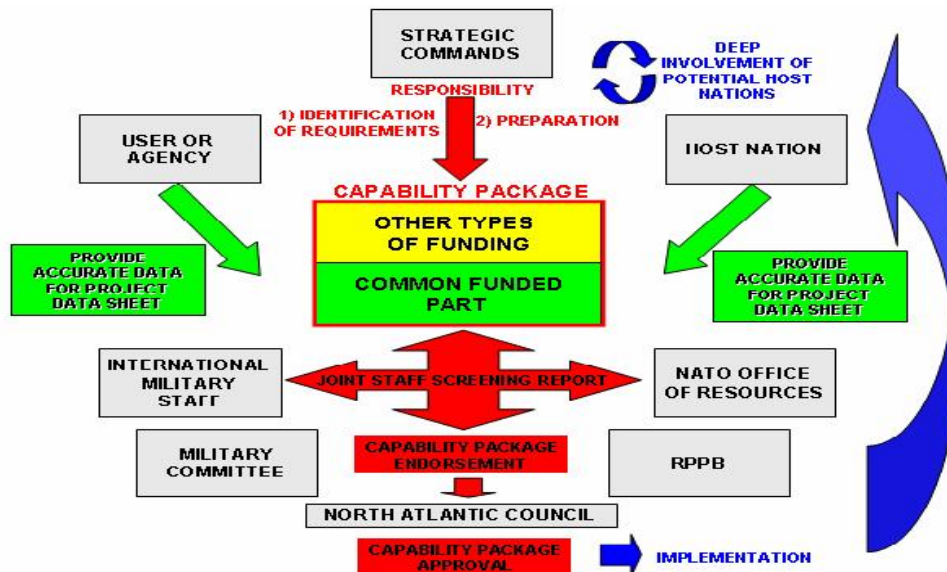


Fig.3 Interaction within the CPP

The Strategic Commands (SCs) are responsible for the identification of the requirements and the preparation of a CP, because it defines a capability required by the Strategic Commander to accomplish their mission. In the preparation of a CP, the SCs will identify the locations at which the capability will be required, and will seek input from the Subordinate Commands that have an interest in that area. The SCs will contact the nations where the capability is to be located, and seek their approval to provide the necessary land, utilities, etc., and to serve as Host Nations (HNs). The SCs will coordinate the CP preparation with the involved Subordinate Commands and nations and will ensure that there is full agreement on the contents before submission to NATO Headquarters.

Normally, the nation in which the facility will be located will be requested to be the Host Nation (HN) for the project. In some cases, a specialized agency, the User, or another nation may become the HN instead of the territorial nation. The actual HN is determined only when the CP is approved. During the preparation of the CP, the territorial nation will be asked to confirm that the necessary land and local utilities will be made available at no cost for the proposed project. The potential HN will be asked to confirm its willingness to conduct the procurement and to manage the implementation of the project. The User will be asked to confirm its willingness to fund the operations and maintenance costs and to supply the necessary personnel to operate and maintain the assets that will be provided through the project. In some cases, such as projects for headquarters facilities for the NATO Military Command Structure, the MB will be expected to fund the personnel, operations and maintenance cost.

The NATO Office for Resources (NOR) provides staff advice on resource issues to the Secretary General and other Staff Divisions, coordinating with the IMS in their role of supporting the MC, as necessary and to the resource committees, particularly in assessing funding requests from the military commands and the agencies for which the resource committees are responsible. Within the CPP the NOR plays an “reactive role” in terms of requirement definition which means that they respond to requirements identified by the Users, but are not involved in identifying any requirements by themselves, only the implementation. To be responsive to critical requirements, the NOR works alongside with NATO Military Authorities, especially the International Military Staff (IMS).

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The IMS provides together with the NOR integrated analysis and advice on full lifecycle cost, including manpower, of requirements established and prioritized by the MC. Within the CPP, the IMS has a key role in coordinating the efforts of the NATO Military Authorities and to ensure that the “Minimum Military Requirements” are translated into the CP Framework. For this it works alongside with the NOR.

Within the CPP the MC and the RPPB are responsible for the CP endorsement. All CPs have to be approved by the NAC.

All requirements are pursued through the CPP. The CPP can be split into five phases, which are linked into the NDPP.

The first phase concerns the identification and prioritization of the CPs, which are identified through the NDPP. The proposals for the revision of this stage of the process state that Capability Area Plans (CAP) will capture all relevant elements associated with the Capability Development Process (all development stages from analysis of the strategic environment to implementation). Further, CAPs will be linked together to form a Capability Master Plan (CMP) that will identify the totality of the requirement that has to be met to provide the Alliance with capabilities. The CAP will be supported by Capability Area Improvement Programmes (CAIP) that deals with specific shortfalls in requirements identified in the CAP.

The second phase encompasses the development of the CP. In this phase one or both SCs (ACO and/or ACT) define(s) the scope of the RC and identify (ies) the assets required to implement this capability, in the form of the RD. The SC(s) then consider the assets that are already available to the Command, and propose(s) projects to resolve the shortfall. In some cases, the project proposals are updated periodically to include additional projects and to modify those included in the earlier submissions. Some projects relate to assets that should be provided by the nations, and are proposed for national funding; others relate to assets that are over and above what a NATO nation could be expected to provide, and are proposed for CF. In some cases, a project proposal may include national and NATO cost shares.

The third phase of the CPP covers the approval of the CP. Once submitted to NATO Headquarters, the IS and IMS work together to produce a Joint Staff Screening Report (JSSR). The MC then analyses the CP to confirm the military requirement and the priority of the requirement. In parallel, the RPPB determines the “eligibility and affordability” of the proposals for CF. After endorsement by the MC and RPPB, the CP is submitted to the NAC for approval. The key event for going forward to implementation (fourth phase) is Council approval of the CP, which initiates the programming step.

The fourth phase constitutes the implementation of CP. As mentioned above, the key event for the implementation is Council’s agreement to the CP. It is from this point on, that implementation on individual projects may progress to a capability delivery with a known HN. It is also at this stage that the IC must take stock of the projects in the CP in the framework of the NSIP financial situation for the next several years. The method for doing so is the Capability Package Implementation Plan (PIP). There are 4 ways of programming projects, however only the CP-method requires a PIP. The IS (NOR) will publish a PIP for each approved CP within three months of CP approval. The HN produces a Project Authorization Request, which is screened by NOR and authorized by the IC. At the time of authorization the SCs have to confirm that the Military Requirement still exists.

The fifth phase is initiated when the capability is accepted into operational service. The lessons-learned during this ‘in-service’ phase should be feed-back into the initial identification and CP development stages of future CPs.

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4. Conclusion

The aim of this paper was to provide an outline of the NATO defense planning process framework in place to support the improved delivery and sustainment of required NATO capabilities within NDPP and specifically those common-funded, with emphases on programming and planning part of the process. The Medium Term Resource Plan remains the most important tool for NATO resource planning prepared in line of a single set of coherent guidance included in the NATO Directive for resources.. It foresees planning for the full five years for the NATO Security Investment Programme as well as for the Military Budget. In setting out requirements for the full period of the MTRP it serves as a planning baseline against which reform, transition costs, and savings can be programmed, tracked and considered. Accordingly it put additional focus on the latter years of the covered period to reinforce the importance of the planning cycle. The aim of the Medium Term Resource Plan remains well defined in providing the Council with a forward look at the requirements for military common funding in support of Alliance objectives and priorities, taking into account the Comprehensive Political Guidance, the NMA Strategic Priorities and Objectives, the emerging guidance resulting from the new NATO Defense Planning Process, and the ongoing work on balancing requirements and resources. In the same time MTRP assess the affordability of those requirements in the light of a continuing tight financial climate, taking into account the assessments by the implementing committees and the impact statements consolidated by the Military Committee. In doing so the RPPB has a crucial role in making recommendations on the resources to be allocated to the Military Budget and the NATO Security Investment Programme (NSIP) for the next budget year and to set planning figures for the NSIP and the Military Budget for the following 4 years period. For a purely resource planning point of view the main weakness remain approval of the ceilings; during the decision making process there is a group of nations approach to establish them based on political reasons and not based on the level of requirements.

On the other hand the current arrangements under the NDPP (including its governance structure, which provide cross-domain cohesion for national, multinational and NATO common-funded capabilities for the mid and long-term) are necessary and appropriate, and should not be duplicated but in the same time could be complemented and reinforced. I expect that any future adjustments aimed at improvements to processes and governance structures will be based on evaluations by the competent NATO bodies. Equally, I see that no fundamental change is required to the current practices where delivery of NATO capabilities involves different owners at different stages. The new philosophy of NDPP based on capability brings a number of other advantages as transparency and traceability, a comprehensive approach, stakeholder engagement and possibility of a robust analysis.

In the same time the key to success in NATO is finding the right balance between the different funding mechanisms. Common funding remains one of the main evidence of NATO solidarity encompassing cradle to grave considerations for NATO common-funded capabilities needed for the short (in support of current operations), medium and long term. The CF proposals seek to put individual aspects into a single cohesive governance context oriented to the needs of the end-users, and to simplify and harmonize activity within each stage, in particular with respect to the boundary and feedback conditions. However the current processes suffer from a number of shortfalls, which represent challenges to be overcome.

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For instance whole-life approach of the CF could permit clarity of purpose at all stages and allow good governance to ensure timely delivery of needed capability. Ownership of the CF should rest with the NAC which should directly empower the committees and staffs. The challenge is that despite the introduction of various resource reform measures, in practical terms no-one (committee or individual) below the level of the NAC has responsibility for NATO common-funded capabilities across their life-cycle. This means that the status of capabilities within the life-cycle is not always visible to senior management and required activities are not consistently driven to timely and successful conclusion. There is also significant risk that the individual phases will lose focus on the overall intent, and become disconnected. Bearing in mind this an overarching governance structure which recognizes individual roles and responsibilities across the life-cycle is needed.

Other weakness which I consider a challenge is that the detailed requirements and submissions based on the targets and needed for the acquisition and implementation of NATO common-funded capabilities, are not of consistently high quality having lack coherency between mid long and short-term. These factors result in the need for subsequent revisions of requirements with consequent delay and added cost in delivering capabilities. Acceptance criteria are rarely defined and there is often insufficient user representation during project development, implementation and acceptance. In the same time the mechanisms to control changes to the requirement document during implementation are weak and this can lead to requirements creep both before and after projects have been approved for implementation. There are no clear boundaries requiring the Host Nation to report back if project implementation runs into exception (time, cost, and performance). Controls governing the often necessary development and maintenance of demonstration/prototypes are weak.

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THE MANAGER/LEADER'S CHARACTER

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LAND FORCES STAFF

Abstract:

The qualities of a great man are “vision, integrity, courage, understanding, the power of articulation, and profundity of character”[1]. The character is the highest and most synthetic layout of one's personality, which emanates from the integration of an entire life experience into some specific psycho-behavioral ways. Unlike temperament, which represents the manifest form of the personality, the character can be seen as the consistent frame for personality, constituting the psycho-social core of human being relations. The character is closely related to social relations, being visible only when the individual interacts with the social environment.

Key words: *character, personality, attitude, trait, manager, leader, ethical.*

1. Concept of character. Characterial attitudes and traits.

The character can be viewed from a various number of perspectives. In 1978, Ştefan Zisulescu [2] synthesized three meanings of it as follows: the sense described as one's characteristic, the ethical sense, and the psychological sense.

Etimologically speaking, the word “characteristic” comes from the greek “haractir” and was depicted as a “monogram” [3] of an individual, showing the special qualities or traits of a person. For instance, tics, which are known as frequent usually unconscious quirks of behavior or speech, are individual particularities and therefore cannot be considered as characteristic qualities.

Secondly, the ethical sense refers to a moral standard and targets the character invested with moral value. Thus the character involves a moral standard, and can be defined as good or bad, moral or immoral, good shaped or bad shaped. Due to this ethical sense, some British and American psychologists have preferred to replace the term “character” with “personality”, arguing that one's character could not be a special field of personality.

Thirdly, the psychological sense defines the character as a specific particularity by which a person differs from another, or as a characteristic mark of individuality that causes the reaction to experienced events. When we speak about character we refer to the human behavior canalized by a leading driver, called attitude. The attitude reflects the internal position of an individual against the confronting reality as a whole or as a subgroup of this reality. A system of steady and essential attitudes interacting with each other, which have already removed the circumstantial and variables ones, is called character.

The attitude crystallizes itself during the knowledge and action process, and selectively directs man to a specific behavior. In other words, the attitude can be described

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as a latent disposition (or mood) to react or to take actions, in one way or another, as a result of external stimulus.

The entire system of attitudes has to be continuously related to the values. When the attitudes fit the social norms they become values, crystalizing so called attitudes-value system. Having stability, importance and significance, the attitudes transform themselves into characteristic traits. Mihail Golu, a Romanian sociologist, defines the characteristic trait as an “internal psychological structure” [4], which provides individuals a constant behavior in social situations. The characteristic traits are not static, being in a continuous transformation.

“Character is an essential tendency. It can be covered up, it can be messed with, it can be screwed around with, but it can't be ultimately changed. It's the structure of our bones, the blood that runs through our veins.” [5]

The character, seen as a self-regulating system of attitudes and traits, is not innate. It expresses the personal background of a human being, and can be acquired by assimilation of social relations, the dominant ideas and values of that specific era.

It is not my intention, here, to focus on the psychological perspective. Therefore, in the next chapter I will channel the efforts toward the other aspect of character, namely the ethical or moral one.

2. The manager/leader and his/her character.

Is there any difference between managing and leading nowadays? Some people believe there is, some don't. In this regard it is a very big debate.

In the opinion of some people, to survive in the twenty-first century means that we need a new generation of leaders, not managers. They believe the distinction between leader and manager is an important one, affirming that “*a good manager does things right, a leader does the right things*”. Furthermore, they observe that managing is about efficiency and leading is about effectiveness.

Some other people subscribe to the idea that leadership and management must go hand in hand. Nowadays managers must not only maximize efficiency, but also organize workers to develop talent and inspire results. Organizational management is viewed as the process of planning, organizing, leading and controlling the efforts of organization members.

Getting over on the above mentioned aspects and not pointing out which one is better, an idea pops out: Regardless of what perspective we embrace, to what extent does a manager's or leader's character affect the organization and its goals?

Of course, we consider, *here*, the character from the ethical point of view acknowledging that, at the same time, one's character can be integrated through the values system in society, or it can be disapproved as a result of major deviations.

Developing a new leadership theory, namely the transformational theory, James McGregor Burns, an American historian and political scientist, describes a hierarchy of values, placing public values at the top. Later on in 1985, Bernard Bass suggested that the leader serves as a role model for followers.

A review of their findings indicates the idea that the manager/leader must possess some specific characteristics in order to be followed, and those characteristics cannot be ambiguous. Nowadays, the followers are “knowledge workers”, they look to the manager/leader not only to assign them tasks. They also seek respect and trust. Otherwise they cannot experience the same passion and motivation to achieve the proposed goals.

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Nothing is truer than “faced with crisis, the man of character falls back upon himself” [6]. A manager/leader can easily switch instinctively between managing/leadership styles, but he should also have some internal system to rely upon when he makes decisions.

One of top 5 quotes of George Washington tells us what character is all about: “Few men have virtue to withstand the highest bidder”. This implies that the honest attitude towards the facts makes the difference. A subjective manager/leader obscures the facts for the sake of narrow self-interest, for partisan interest, or prejudice.

Peggy Noan, an American author and a weekly columnist for *The Wall Street Journal*, said: “In a president, character is everything. A president doesn't have to be brilliant... He doesn't have to be clever; you can hire clever... You can hire pragmatic, and you can buy and bring in policy wonks. But you can't buy courage and decency, you can't rent a strong moral sense. A president must bring those things with him... He needs to have, in that much maligned word, but a good one nonetheless, a “vision” of the future he wishes to create. But a vision is worth little if a president doesn't have the character-- the courage and heart-- to see it through.”

A very important aspect is the image that the manager/leader broadcasts amongst the followers. Although you can professionally advertise your image, what really counts are the perceptions of intention and competence. Promises made before elections or at the beginning of tenure, can destroy, *later*, an entire beliefs system if they are not kept. If the ethical expectations and the organization's code of conduct are not respected, they become eventually just meaningless written words. The leaders who fail to live up to their published code cannot win the hearts and minds, and they will find only the opposite of trust.

Abraham Lincoln, the 16th American President, said: “Character is like a tree and reputation like its shadow. The shadow is what we think of it; the tree is the real thing. I desire so to conduct the affairs of this administration so that if at the end, when I come to lay down the reins of power, I have lost every other friend on earth, I shall at least have one friend left, and that friend shall be down inside me.”

3. Conclusion

Our society, like all other surrounding societies, is an organization on its surface, but is also a “living organism” [7] at its core.

Today we have a lot of “white books” and “strategies” in Romania. But if we pay more attention to the facts, could we say that *Romanian-ism is a question of principle, of purpose, of idealism, of character, and not simply a matter of birthplace, or creed, or line of descent?* [8]. First of all, we must analyze to see if *Romanian-ism* really does exist. Are we facing a moral crisis in our state and nation today?

What is the impact of a consistent lack of personal and collective responsibility? An answer could be: the impact is a failure in protecting the spiritual and cultural values, and the dignity and prosperity of our national citizens.

The managers/leaders we have chosen over the last two decades, have spoken many times about progress and prosperity as a foundation for promoting and guaranteeing the national values and interests. We had heard about “*free and fair electoral processes, strong legislatures, civilian control of militaries, honest police forces, independent and fair judiciaries, a free and independent press, a vibrant private sector, and a robust civil society*”. Why do we think that things are going differently than we have been told?

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We have been feeling the economic crisis and we have been watching its effect at home and abroad. But, let's face it, our economic status is not a result of this crisis. The actual world's financial crisis has only deepened the economic whole we were facing.

What should we have done these last two decades in order to have a smooth transition to the new society, and to lighten the burden on Romanian citizens?

Looking from a wider perspective, could we accept the premise that our current state of affairs is in fact a matter of managers/leaders character rather than a matter of an ill-fated ideology?

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Risk management – component of cost analysis

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Abstract:

Risk management is the primary job of a project manager. Every project management technique is in fact a risk management technique. Some of techniques reduce the risk of being late and some of them reduce the chances of overrunning the budget. The present paper gives a short idea of how the risk management influence the cost of a product and how the cost can be reduced. The paper also includes a short explanation about the differences between uncertainty and risk as they are perceived from the project management perspective.

Key words: Risk management, uncertainty, probability, impact, risk value, contingency, price analysis, cost analysis.

1.Introduction

Life is full of uncertainty. But why project managers usually call that risk? It is just a confusion created around these two terms basic to any decision making framework or they know that without uncertainty, there is no risk?

As per PMI “Risk is an uncertain event or condition that, if occurs, has an effect on at least one project objective”. Risk impact may be positive or negative and more importantly it can be measured, or more appropriately it can be guessed.

Personally I believe that all project management theories and methods have been developed for the Industry where the good management of the projects is vital for the survival of a Company. Even if the governmental institutions adopt some project management methodologies (internal developed or implementing existing ones) their existence does not depend on such methodologies. This is the reason why from time to time we should re-understand the real life challenges.

The goal of the next few pages is to make people aware of the risk management influence on building up the price for a product and not to describe the Cost Risk Analysis process. The scope of any kind of risk analysis is to produce a defensible assessment of the level of cost to budget such that this cost has an acceptable probability of not being exceeded and is important to understand why sometimes a price looks “unfriendly”.

2.Uncertainty versus risk

In every project there is uncertainty about the schedule, the cost and the quality of the end product. How can this uncertainty be managed?

Risk management is the means by which uncertainty is systematically managed to increase the likelihood of meeting project objectives. The key word is *systematic*, because the more disciplined the approach, the more we are able to control and reduce risks.

Risk management – component of cost analysis

In the “unexpected” world there are project managers ready to deal with the unknowns. The language of project management risk management comes with the following explanations:

- *Known unknowns* – represent identified potential problems, such as the possibility of a strike when labor contract expires, or enough snow to stall a construction project during winter. We don’t know exactly what will happen, but we do know it has a potential to damage our project and we can prepare for it.
- *Unknown unknowns* – are the problems that arrive unexpectedly. These are the ones you honestly couldn’t have seen coming. But project managers do expect them, because they know something unexpected always happens.

Consequently, in order to express the difference between the two terms, we can consider the following statements having the same high probability of being true:

- Risk can be defined as imperfect knowledge where the probabilities of the possible outcomes are known, and uncertainty exists when these probabilities are not known
- Risk involves the possibility of future events the probabilities of which can be calculated. If there is incomplete information and the expected value of occurrences cannot be determined, those elements are uncertainties.
- The more uncertainty, the higher the risk of making a poor decision.
- Uncertainty is the indefiniteness about the outcome of a situation - it includes favorable and unfavorable events. We analyze uncertainty for the purpose of measuring risk!

A more common usage of these terms would state uncertainty as imperfect knowledge and risk as uncertain consequences. If a person says “I am uncertain about the weather tomorrow” this would be a value-free statement implying imperfect knowledge about the future. If this same person says “I am planning a picnic for tomorrow and there is a risk of rain”, now he or she is indicating preference for an alternative consequence. Taking a risk can now be defined as exposing one’s self to a significant chance of injury or loss.

Risk management is the process of managing the identified risks in order to reduce the probability of them occurring and planning how to deal with them should they occur.

The PMBOK provides excellent guidance on techniques to use for the management of risk and the PRINCE2 manual provides an effective approach to embedding risk management within the PRINCE2 Framework.

3. Identifying risks and assigning risk value

As explained in the introductory chapter the scope of this document is to raise the awareness of the governmental institutions regarding the mechanisms behind the price building process. Therefore the example given below is very simple just giving a flavor of the brainstorming related to Cost Risk Analysis process. The professionals know that Monte Carlo simulation remains the best technical practice but further work is needed by the community on ways to simplify the presentation of its outputs (and meaning) to senior decision-makers.

Prior to entering risks in to the risk log the key risks to the project need to be identified. This is not an activity for the project manager alone. Depending on the size of

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the project anywhere from 2 to a dozen people may be required to do an adequate Risk Analysis of the project. This typically would include: technical leads, Information Assurance experts, contracting officers, etc.

The identification of risks at an early stage is essential if the project is to have any chance of remaining within budget and on time. Ignoring risks is not acceptable in any project.

Similar projects, historical data, personal knowledge, knowledge of experts in the field are all sources for identifying risks to the project and each should be approached. For larger projects a meeting dedicated solely to the identification of risks is a very good investment.

Once a set of risks to the project have been identified a high level cut can be made; very unlikely occurrences, as well as those which would make the project superfluous can be set aside. The remaining risks should be listed and assigned a probability and impact rating. The probability is the evaluated likelihood of a particular outcome actually happening and the impact is the evaluated effect or result that particular outcome. The impact should ideally be considered under the elements of time, cost, quality, scope, benefit or people.

It makes sense on time sensitive projects to provide an impact rating for time and for cost; using man days for time and Euros for cost.

The value of a risk is the product of the probability and the impact, for example:

Risk A: (Probability) 0.8 x (Impact) €30 000 = (Risk Value) €24 000

Risk B: (Probability) 0.1 x (Impact) €130 000 = (Risk Value) €13 000

Risk C: (Probability) 0.5 x (Impact) 40 Man Days = (Risk Value) 20 Man Days;

4.Risk mitigation

Calculating a value for a risk makes it possible to evaluate whether mitigating action is cost effective or not. Mitigation is an activity that is carried out and is paid for by the project to reduce the probability of a risk occurring. For Example:

Risk A: (Probability) 0.8 x (Impact) €30 000 = (Risk Value) €24 000

Spending €3 000 to purchase new software reduces the probability of the risk occurring from 0.8 to 0.05.

Risk A: (Probability after Mitigation) 0.05 x (Impact) €30 000 = (Risk Value) €1 500

Whilst the Impact is unchanged should the risk still occur, the risk value is significantly reduced by the mitigating action. Hence, in this example, it makes sense to spend €3 000 to mitigate the risk.

5.Contingency

The purpose of a contingency budget is to deal with risks that materialize while the management reserve is to deal with uncertainty. The size of the contingency budget should be large enough to deal with the identified risks. However, it may not be possible, or necessary, to have a contingency budget that would cover the cost of the impact of every risk identified.

To calculate a defensible contingency budget the Risk Values calculated for all the identified risks can be used. For Example:

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Project Risk	Risk Probability After Mitigation	Risk Impact	Risk Value
Risk A	0.5	30000	15000
Risk B	0.7	60000	42000
Risk C	0.2	150000	30000
Risk D	0.9	40000	36000
Risk E	0.4	120000	48000
Risk F	0.4	35000	14000
Risk G	0.3	36000	10800
Risk H	0.7	50000	35000
Totals	N/A	521 000	210800

Table 1 – Risk Values

The contingency budget for this project should be set at € 210 800. However, an additional check is required; the contingency budget should always be large enough to deal with the largest Risk Impact plus a % of the remainder sufficient to make the budget realistically capable of dealing with the project risks; in this case the budget is equal to 150 000 + 60 800 . The probability of the highest valued and second highest valued risks both occurring is 8% so the calculated contingency is probably sufficient. However, it is the project manager's responsibility to make the decision on the level of contingency that is acceptable, the calculations are made solely to provide some guidance.

Risks to projects are generally applicable during particular periods during the project. When a risk can no longer materialize it is closed in the risk log. Risks that are in the planning window are monitored more closely. With more detailed planning risks are revisited and new risks considered.

Risk management is an ongoing activity in the project and should be reported on in every highlight report.

6.Price/Cost Analysis

For an economist, “cost” and “price” are not interchangeable terms. The “price” of something may well be a component of its “cost.” However, cost includes anything that we give up in order to acquire something else, while price specifically refers to just the cash we shell out to get it.

Usually price is greater than cost. That's what gives a business a profit. But it's not always the case. Sometimes price is less than cost, and we're seeing that right now in our down economy, for example. Some real estate is selling at a much lower price than what the cost of that real estate is, and that's a signal to the business to change things, to get out of that business or perhaps try to become more efficient and produce things at a lower cost."

Some form of price or cost analysis should be performed in connection with every procurement action, regardless of whether the organization is a vendor or a buyer. The form and degree of analysis, however, are dependent on the particular subcontract or purchase, and the pricing situation. Determination of price reasonableness through price or cost analysis is required even though the procurement is source directed by the contracting officer of the sponsoring agency.

In some purchases, price analysis alone will be sufficient; in others, price analysis will be used to corroborate the conclusions arrived at through cost analysis. The form and degree of analysis are dependent on facts surrounding a particular subcontracting or

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purchasing situation. The scope of price analysis performed and the particular techniques used will depend on whether or not cost analysis is done, as well as on such factors as type of product or service, dollar value, purchase method, and extent of competition.

Price Analysis is the process of deciding if the asking price for a product or service is fair and reasonable, without examining the specific cost and profit calculations the vendor used in arriving at the price. It is basically a process of comparing the price with known indicators of reasonableness.

When adequate price competition does not exist, some other form of analysis is required. Some reasons that could affect adequate price competition are: specifications are not definitive, tolerances are restrictive, or production capacity limits those eligible to bid.

Examples of other forms of price analysis information include:

- analysis of previous prices paid
- comparison of vendor's price with the in-house estimate
- comparison of quotations or published price lists from multiple vendors

Cost Analysis is the element-by-element examination of the estimated or actual cost of contract performance to determine the probable cost to the vendor. The goal is to form an opinion on whether the proposed costs are in line with what reasonably economical and efficient performance should cost.

Cost analysis should be performed in those situations where price analysis does not yield a fair and reasonable price or is required by the requirements of a sole source procedure.

Cost analysis techniques are used to break down a contractor's cost or pricing data so as to verify and evaluate each component. Some of the cost elements examined for necessity and reasonableness are materials costs, labor costs, equipment and overhead. These costs can be compared with actual costs previously incurred for similar work, the cost or pricing data received from other vendors, and independent cost estimate breakdowns.

It is easy to notice that any of the cost elements is not called risk or something related to risk. Then where is the contingency budget? Definitely the risk values are now part of their respective cost elements according to the Work Breakdown Structure. In some respect the risk management generates the transformation of the cost into price but is not the only trigger.

Working in the acquisitions I often tried to obtain cost breakdowns from suppliers especially during sole source procedures and I know that it's difficult to persuade a supplier to provide them. Suppliers feel that sharing a cost breakdown will give you a negotiating advantage and they will use any reason to refuse this requirement. They are aggressively competing for business and have little certainty about whether or not they will earn it.

The scope of the negotiator is to engage the supplier in joint cost reduction discussions when he/she knows what the costs are. Being aware of the pricing mechanism and the influence of the risks into pricing it is perfect possible to discover that the supplier is paying sometimes too much for goods or services that get factored into pricing. The associated costs for some risks can be also reduced when the parties work together on the same Risk Log and this kind of transparency could become the key factor for a successful negotiation. As we can learn from Risk Management theory one of the method to handle the risks is transference. I know that the ideal outcome of a negotiation is to get rid of responsibilities but speaking about win-win approach is impossible to reach an end state like this. Consequently is normal to accept the transfer of some risks from the supplier when the mitigation actions can be easily managed. The result of this attitude is commonly

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underestimated but definitely the price is going down, the confidence is increased and both parties end up being more profitable at the end of the day.

Finally there are some figures we need to remember:

- Project management may consume between 5% to 20% of the project budget;
- Risk management may be budgeted between 0.5% to 5% of the project budget.

7. Conclusion

As I already mentioned the Industry represents in some extent the “real life” of our society and we are need to support by all smart means the development of the Companies.

In a society full of suspicions we tend to consider them as being either our adversaries or good Samaritans. Obviously none of these considerations is true. In my opinion the most important thing is to put all our efforts to keep pace in the understanding of the processes and the mechanisms adopted by the Industry.

The continuous education and training should be one of the most important performance indicators for the people working in governmental institutions especially in a direct connection with the Industry.

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THE REFORM OF THE EU'S DATA PROTECTION RULES

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Abstract:

The rapid rhythm of technological change and globalisation have profoundly transformed the life of every people and the way in which an ever-increasing volume of personal data is collected, accessed, used and transferred. As of 1 January 2012, the European Union has 503.5 million people and more than 250 million internet users. A big part of these people use online services for commercial or social activities. In exchange for these services people provide personal data that can be used later by companies for different goals. Obtaining personal data has become a purpose and an asset for many companies. Collecting, accessing, analysing, transferring and using the data of potential customers is often an important part of their activities. Companies are using new technologies to develop smart ways for obtaining information and ordinary users are increasingly less protected. Many times, in this fast growing race for information, the rules, the laws and the people's rights are violated. In order to protect the public against these abuses the European Commission was obliged to take action. This paper sets out the main elements of the reform of the EU framework for data protection.

Key words: personal data, collecting information, data protection, people's rights

1. Introduction

According to Article 8 of the Charter of Fundamental Rights of the European Union and Article 16 (1) of the Treaty on the Functioning of the European Union (TFEU) personal data protection is a fundamental right in Europe and needs to be protected accordingly. The EU Charter of Fundamental Rights says that everyone has the right to personal data protection in all aspects of life: at home, at work, whilst shopping, receiving medical treatment, at a police station or on the Internet.

Personal data is any information **relating to an individual**, whether it relates to his or her private, professional or public life. It can be anything from a name, a photo, an email address, bank details, posts on social networking websites, medical information or computer's IP address. The EU data protection rules apply when a person can be identified, directly or indirectly, by such data.

Although individuals have the right to enjoy effective control over their personal information 72% of internet users in Europe still worry that, in this new digital medium, their personal data are poorly protected, they don't have enough control over them and they are not properly informed of what happens to their personal information, to whom it is transmitted and for what purposes. Often, they don't know how to exercise their rights online.

Lack of confidence makes consumers hesitant to buy online and accept new services. Therefore, a high level of data protection is very important to enhance trust in

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online services and to use the potential of the digital economy. This level can be achieved by modern and clear rules across the EU. That is why the European Commission was proposing a fundamental reform of the EU's data protection framework.

2. Evolution of data protection reform

The EU's 1995 Directive, the central legislative instrument for the protection of personal data in Europe, was a milestone in the history of data protection. Its objectives remain valid.

In 2007 the Lisbon Treaty has created, with Article 16 TFEU, a new legal basis for a modernised and comprehensive approach to data protection and the free movement of personal data, also covering police and judicial cooperation in criminal matters.

Since 2009 the European Commission has launched public consultations on data protection and engaged in intensive dialogue with stakeholders.

On 4 November 2010, the Commission published a Communication on a comprehensive approach on personal data protection in the European Union which set out the main themes of the reform.

Between September and December 2011, the Commission was involved in a dialogue with Europe's national data protection authorities and with the European Data Protection Supervisor to explore options for more consistent application of EU data protection rules across all EU Member States. These discussions made clear that both citizens and businesses wanted the European Commission to reform EU data protection rules in a comprehensive manner.

In 2012 the European Commission proposed a strong and consistent legislative framework across Union policies, enhancing individuals' rights, the Single Market dimension of data protection and cutting red tape for businesses.

This new framework consist of a Regulation (replacing Directive 95/46/EC) setting out a general EU framework for data protection and a Directive (replacing Framework Decision 2008/977/JHA) setting out rules on the protection of personal data processed for the purposes of prevention, detection, investigation or prosecution of criminal offences and related judicial activities.

3. The main problems affect the right to data protect

The main problems that cause difficulties for individuals and business in exercising the right to data protected are:

- the rules are not updated and modernised;
- the ways are not sufficiently harmonised across Member States;
- inconsistent enforcement of data protection rules across UE;
- the powers of the national authorities responsible for data protection are not harmonised enough to ensure consistent and effective application of the rules;
- exercise of the rights is more difficult in some Member States than in others, particularly online;
- too large volume of data collected everyday;
- users are often not fully aware that their data is being collected;
- there is not a mutual trust between police and judicial authorities of different Member States;
- the mechanisms for transferring data to third countries have to be improved;

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- the development of the digital economy across the EU's Single Market and beyond is not stimulated enough.

4. How the new rules solved the problems

Though the objectives of the EU's 1995 Directive remain valid should be kept in mind that it was adopted when the internet was initially and, in today's new digital medium, existing rules don't provide the harmonisation required and the necessary efficiency to ensure the right to personal data protection. New rules will update and modernise the principles enshrined in the 1995 Data Protection Directive.

One important problem is there are still considerable divergences in the rules across Member States. As a consequence, data controllers may have to deal with 27 different national laws and requirements. The results are a fragmented legal environment which has created legal uncertainty, unequal protection for individuals, unnecessary costs and administrative burdens. New rules will remove barriers to the internal market which exist because of the divergent legal approaches and will achieve substantial harmonisation of data protection rules at EU level, creating one single law applicable across the EU. The savings from having one single law in terms of removed administrative burden will be € 2.3 billion per year.

An „one-stop-shop” for enforcement will be established. Thus businesses or organisations will only have to deal with one single data protection authority - the authority in the country where they have their main base.

There are a lot of cases when online social networking services collect much more data than individuals were aware of and some personal data that they thought had been deleted are still stored. So “the right to be forgotten” is broken. In order to reduce these practices the online social networking services (and all other data controllers) will be obligated to minimise the volume of users' personal data that they collect and process and to delete an individual's personal data if that person explicitly requests deletion and where there is no other legitimate reason to retain it. In this specific case, this would oblige the social network provider to delete the person's data immediately and completely.

Another aim of the new legislative acts is to strengthen rights, to give people efficient and operational means to make sure they are fully informed about what happens to their personal data and to enable them to exercise their rights more effectively. With new rules will be improved individuals' ability to control their data, improved the means for individuals to exercise their rights, reinforced data security and enhanced the accountability of processing data.

The new Directive will apply general data protection principles and rules to police and judicial cooperation in criminal matters. These rules will apply to both domestic processing and cross-border transfers of data. Having the same law in all EU Member States will make it easier for our police forces to work together in exchanging information. This will help fight crime more effectively. If people's personal data is shared in this way, they can be confident that it will be protected by the same law everywhere and that your fundamental right to data protection will be respected.

A stronger, simpler and clearer data protection framework will encourage companies to get the most out of the Digital Single Market, fostering economic growth, innovation and job creation. This will especially help small and medium-sized enterprises. For companies offering cloud services – remote storing and processing of data on computer servers – the trust in the EU's coherent regulatory regime will be a key asset and

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attractive point for investors. Having the same rights across the EU will also boost individuals' confidence in the fact that the protection they get for their data will be equally strong, wherever their data is processed. This will improve trust in online shopping and services, helping to boost demand in the economy. Both for citizens and business, these reforms will help break down barriers that are hindering Europe's response to the crisis.

Individuals' rights must continue to be ensured when personal data is transferred from the EU to third countries, and whenever individuals in Member States are targeted and their data is used or analysed by third country service providers. This means that EU data protection standards have to apply regardless of the geographical location of a company or its processing facility. In today's globalised world, personal data is being transferred across an increasing number of virtual and geographical borders and stored on servers in multiple countries. More companies are offering cloud computing services, which allow customers to access and store data on remote servers. These factors call for an improvement in current mechanisms for transferring data to third countries. This includes adequacy decisions and appropriate safeguards such as standard contractual clauses or Binding Corporate Rules, so as to secure a high level of data protection in international processing operations and facilitate data flows across borders.

In order to implement the new rules the Regulation provides for sanctions that are proportionate and dissuasive. For first offences, the national supervisory authorities may send a warning letter. For serious violations (such as processing sensitive data without an individual's consent or on any other legal grounds) supervisory authorities shall impose penalties up to €1 million or up to 2% of the global annual turnover of a company. The fines start out at €250,000 or up to 0.5% of turnover for less serious offences (a company charges a fee for requests from a user for his data) and move up to €500,000 or up to 1% for not supplying information to a user or for not having rectified data.

5. Conclusion

The EU data protection reform aims to build a modern, strong, consistent and comprehensive data protection framework for the European Union. Individuals' fundamental right to data protection will be reinforced. The other fundamental rights will be respected too. The reform will first of all benefit individuals by strengthening their data protection rights and their trust in the digital environment. The reform will furthermore simplify the legal environment for businesses and the public sector substantially.

Finally, the reform will enhance trust among law enforcement authorities in order to facilitate exchanges of data between them and cooperation in the fight against serious crime, while ensuring a high level of protection for individuals.



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DEFENSE ACQUISITION MANAGEMENT WITHIN EU
DIRECTIVES FRAMEWORK

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Abstract:

This paper summarizes briefly the European Unions regulations on acquisition, trying to outline the main aspects applying to defense area. It begins with the principles stipulated in the Treaty on the Functioning of the European Union – TFEU than, it introduces the regulatory framework in the field of procurement adopted by European Parliament and the European Council in order to achieve a European defense equipment market. It focuses on Directive 2009/81/EC that sets new rules for the acquisitions of armaments, ammonitions and war material and as well for the procurement of sensitive supplies, works and services for security purposes. The paper makes reference to exemptions based on article 346 TFEU as well as to offset and introduce the initiative of the European Defense Agency (EDA), the Code of Conduct on Offsets, that is a voluntary, non-legally binding, non-legally enforceable regime applicable to defense procurement contracts. The bottom line conclusion is that defense resources management sooner or later ends-up with the need of an acquisitions or modernizations program and at that point, there is always required to organize and run an acquisition procedure that must not only follow national legislative framework but also take into account the EU Directives and TFEU.

Key words: Defense, acquisition, European Union, Directives, procurement, offset.

1. Introduction

In order to better understand defense acquisition regulations one should take a first look at the origin of public procurement regulations within European Union. At the beginning was the Treaty of Rome 1957, now known as the Treaty on the Functioning of the European Union – TFEU, which even though does not include any explicit provisions relating to public procurement, establish however a number of fundamental principles, some of them being relevant in terms of public procurement, as follows:

- free movement of goods;
- prohibition against discrimination on grounds of nationality;
- freedom to provide services;
- freedom of establishment.

In addition to these principles stipulated in the Treaty, we have a set of so called general principles, emerged from the case law of the European Court of Justice (ECJ), which are often used to fill in gaps in the legislation and to provide solutions. The most important of them to the procurement area are the following:

- transparency;

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- equality of treatment;
- mutual recognition;
- proportionality.

Even if the Directives do not apply, these general principles still apply to the procurement and award of contracts by contracting entities.

2. EU Directives on procurement

To strengthen the Treaty principles in the field of public procurement and to provide the necessary guidance to member states, the European Parliament and the European Council have adopted two procurement Directives:

1. DIRECTIVE 2004/17/EC OF coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors;
2. DIRECTIVE 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.

These two procurement Directives have been adjusted with another two Directives, which apply to complaints and review. These are so called “remedies” Directive 89/665/EC and the Directive 92/13/EC. Both of them have been significantly updated by another Directive 2007/66/EC, which was due to be implemented by the member states by 20 December 2009.

One should keep in mind that the Directives apply only to contracts of a value that exceed or meet certain thresholds. These thresholds have been set based on the assumed cross-border commerce and have taken into consideration the cost of applying a tender procedure which is supposed to be proportionate to the estimated value of the contract.

In addition there is a new Directive, which applies to the procurement of military supplies and related works and services - Directive 2009/81/EC. According to this directive, the gradual establishment of a European defense equipment market is essential for strengthening the European Defense Technological and Industrial Base and developing the military capabilities required to implement the European Security and Defense Policy.

It is important to note that before having the Defense and Security Directive, procurement of sensitive equipment and services was in principle covered by the other procurement directives. This means that procurement of non-sensitive and non-military equipment, works and services remained covered by the general public procurement Directive 2004/18/EC and that contracting authorities should be aware of the field of application of the Defense and Security Directive.

3. Defense and Security Directive 2009/81/EC

Defense acquisition constitutes a noticeable segment of public procurement in the EU. The aggregate defense expenditure of the 27 EU member states is approximately EUR 200 billion. This figure includes approximately EUR 90 billion for procurement in general (namely acquisitions, operation and maintenance) and roughly EUR 50 billion for the acquisition of new defense equipment in particular.

Despite the substantial resources allocated to defense procurement by EU member states, defense procurement contracts have for a number of years been subject to different national procurement regimes, with different procurement rules and procedures. These differences across national lines discouraged and in some cases even prevented cross-border competition. As a result, there has so far never been a genuine pan-European

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defense procurement market but rather 27 national markets fenced off with regulatory barriers to entry aimed at protecting national defense industries.

In order to achieve a European defense equipment market it is required to establish an appropriate legislative framework in the field of procurement. This involves the coordination of contracts awarding procedures to meet the obligations arising from the Treaty and the security requirements of Member States.

The Directive 2009/81/EC sets the rules for the acquisition of arms, munitions and war material (as well as related works and services) for defense purposes, but also for the procurement of sensitive supplies, works and services for security purposes. For the purposes of this Directive, military equipment is understood in particular as the product types included in the list of arms, munitions and war material adopted by the Council in its Decision 255/58 of 15 April 1958.

As with other procurement directives, in order for the Defense and Security Directive to apply, the value of the contracts must be above certain thresholds. The applicable thresholds are currently as follows:

- EUR 412 000 for supply and service contracts;
- EUR 5 150 000 for works contracts.

The purpose of Directive 2009/81/EC is to introduce at European level:

- transparent and fair rules that allows companies to access other defense markets within EU;
- increase flexibility for contracting authorities to negotiate contracts;
- the option for contracting authorities to require suppliers to ensure:
 - the protection of classified information;
 - security of supply.

It covers specific security and defense acquisition of:

- Military equipment, i.e. arms, munitions and war material included in the 1958 list (which defines the scope of Article 346 of the Treaty) plus related works and services,
- Sensitive security equipment works and services which involve access to classified information.

One of the most significant innovations of the Defense and Security Directive is that contracting authorities in the field of defense are free to choose the negotiated procedure with prior notice (together with the restricted procedure) as a standard procurement procedure. This provides greater flexibility to contracting authorities and more freedom to discuss available solutions with economic operators. It should be remembered that the European Legislator has chosen a similar approach for the Utilities Directive (open bid was the main recommended acquisition procedure). In addition, contracting authorities can use the competitive dialogue and the negotiated procedure without prior notice on specific grounds.

Another innovation of the Defense and Security Directive is represented by the specific provisions related to the security of information. Because of the sensitive subject matter of defense and security acquisition contracts, the handling of classified information is extremely important. The Directive 2009/81/EC includes provisions that try to tackle this issue. For instance, contracting authorities may require from economic operators the following:

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- A commitment that tenderer shall appropriately safeguard the confidentiality of all classified information in their possession or coming to their notice, in accordance with the relevant member state's provisions on security clearance;
- A commitment that tenderer shall obtain the commitment outlined above from all its feature sub-contractors during the execution of the contract;
- Information about the sub-contractors that allows the contracting authority to determine if they possess the capabilities to safeguard the confidentiality of the classified information.

The Directive 2009/81/EC has been transposed into Romanian legislative framework by the Governmental Emergency Ordinance no. 114/ 21.12.2011 which entered into force by the 1st October 2012.

4. The Directive 2009/81/EC's exemptions

As any other instrument of secondary EU law, Directive 2009/81/EC does not change but must abide by the Treaty (primary EU law). As a consequence, it should be applied as it is, subject to the exceptions established by the Treaty on the Functioning of the European Union. Such exemptions are established in articles 36, 51, 52 62 and 346 of Treaty on the Functioning of the European Union.

The most relevant exception for the area of defense is provided by article 346 TFEU where is stipulated that for the protection of essential security interests and for the avoidance of information disclosure, a Member State may award contracts without applying the Directive.

The definition of member state's essential security interests remains the sole responsibility of Member States. However, according to ECJ case-law, article 346 TFEU does not allow Member States to deviate from the provisions of the Treaty by simply making a reference to such interests. Derogations under Article 346 TFEU are limited to exceptional cases and European Court of Justice emphasized that the measures taken must not extend the limits of such cases.

Consequently, if any of the European Union member state has the intention of awarding a contract already covered by Directive 2009/81/EC, Directive 2004/17/EC or Directive 2004/18/EC, without following the procedure stipulated in those directives, it must ensure that the procedural measures chosen (e.g. the direct award of the contract to a certain manufacturer) is absolutely necessary to protect its essential security interest. Therefore, before using article 346 TFEU, an assessment must be performed in order to identify security interests at stake and to evaluate the need of such specific procedural measures that avoids the application of directives.

5. Offsets

Offsets represent specific practices used by contracting authorities in the field of defense procurement, targeting to safeguard the domestic industries, and are basically some kind of "investment return ". Somehow, this represents a payment given by a foreign defense contractor for the acquisition of defense equipment or related services.

Until nowadays European member states have imposed offset clauses to external suppliers. There is no unified rules and regulations applied by all the states, on the contrary, there is a considerable variation from state to state (e.g. the offset requirements ranges from 0% up to 200%).

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Sometimes, offset activities are directly related to the nature of the contract and thus they have a military nature (e.g. participation of local/domestic industry to the production of some parts of equipment that are procured). In other cases, offset activities are indirect but still pertaining to military area (e.g. domestic supplier are involved in the production of other military products, not-related to the main contract) or indirect and nonmilitary (supplier commitment to buy civilian goods from that country).

In Romania there is the Government Emergency Ordinance no. 189/2002 that establishes the principles, general framework as well as offset procedure in addition to the acquisition contracts for defense and public security area. According to this ordinance the offset requirements are mandatory for every defense or security contract that involves the import or intra-communitarian acquisition bigger then EUR 3 mil.

These offset requirements are considered restrictive measures that are contrary to the principles established by the Treaty because do not allow the free movement of goods and services and there is no equal treatment for all (foreign and domestic) economic operators. As they breach the basic rules and principles of primary EU law, offset activities are not allowed, tolerated or regulated by Directive 2009/81/EC.

Being restrictive practices that infringe EU primary law, offset practices could be justified only based on one of the Treaty derogations, particularly by Article 346 TFEU. Even so, such practices should not affect the competition' conditions regarding products that are not intended for military purposes.

In the offset area it was the European Defense Agency (EDA) that has taken the initiative by proposing a Code of Conduct on Offsets, having the same objective as Directive 2009/18/EC which is to facilitate companies' access to defense markets in other EU countries. This code is applicable to acquisition contracts based on article 346 TFEU – so not being covered by Directive 2009/18/EC and has a voluntary, non-legally binding, non-legally enforceable regime. It has been adopted on 1st of July 2009 by 26 countries (25 EDA participating States (all except Romania) plus Norway)

According to this code contracting authorities are free to select any acquisition procedure as long as they comply with transparency, equal treatment and non-discrimination principles.

The contracts under this regime must fulfill certain publicity requirements (e.g. stipulate offset requirements in contract notice) and when awarding criteria is the most economically advantageous offer, offset will be allocated a less significant weight. Offset shall not exceed the value of the contract.

6. Conclusion

Defense resources management sooner or later ends-up with the need of an acquisitions or modernizations program and at that point, there is always required to organize and run an acquisition procedure that must respect not only national legislative framework but also the European Directives that have been transposed more or less into national regulations.

Instead of regulating all of the public acquisition contracts, EU community has chosen to deal only with those contracts of a value that exceed or meet certain thresholds and that could affect the intra-community trade. The main reason beyond such an approach was the desire to establish a European Defense Market and to strengthen the European Defense Technological and Industrial Base.

DEFENSE ACQUISITION MANAGEMENT WITHIN EU DIRECTIVES FRAMEWORK

The Defense and Security Directive 2009/81/EC sets the rules for the acquisition of arms, munitions, war material and sensitive supplies for defense and security purposes. It makes it easier for EU members to follow common rules and drastically reduce the possible exemptions (more difficult to justify). Procurement of non-sensitive and non-military equipment, works and services remained covered by the general public procurement Directive 2004/18/EC.

The Code of Conduct on Offsets proposed by European Defense Agency has the same objective as Directive 2009/18/EC which is to facilitate companies' access to defense markets in other EU countries but is applicable to acquisition contracts based on article 346 TFEU (not covered by Directive 2009/18/EC) and has a voluntary, non-legally binding, non-legally enforceable regime.

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KABUL INTERNATIONAL AIRPORT (KAIA) TRANSITION
PLAN: CASE STUDY ON HUMAN RESOURCES
MANAGEMENT (HRM)

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Abstract:

The purpose of this paper is to present a case study, along with the way of approaching, on HRM, regarding KAIA Transition Plan from International Security Assistance Force (ISAF) led by NATO, to Afghan Government Authority, represented by Ministry of Transportation and Civil Aviation (MoTCA).

As you have already known, at the end of 2014, NATO/ISAF will finalize its mission in Afghanistan, and until 31st of December 2014, the security of the country will be gradually transferred to the Afghan National Security Forces (ANSF). Also, the administration and management of the civil organizations/ structures (including the airports) have to be fully handed over to the Afghan Authorities.

NATO's involvement in Afghan aviation rehabilitation and transfer of responsibility, to Afghan authorities on civil aviation structure, were outlined in SACEUR's directions and guidance for Afghanistan, which referred to operating KAIA – and other airports – as a key military task with the intention of transferring the responsibilities to Afghan Authorities as soon as practicable while safeguarding military operational requirements. At the same time, SACEUR highlighted that any transition plan had to be considered the "human capital issue" to enable the Government of the Islamic Republic of Afghanistan (GIROA) to take over and run the airport.

Key words: Transition Plan, KAIA, ISAF, MoTCA, TASKIL, TAS.

1.Introduction

KAIA is the most important airport from Afghanistan. The command and control of the military side of the airport (KAIA, which operates 24/7) belong to a NATO/ ISAF one-star general (COMKAIA), and the civil side of the airport (South KAIA or KIA, which operates only the daytime) is led by the President of KIA, an Afghan civilian. But, even if there are two different command and control airport authorities, COMKAIA is responsible to provide Air Traffic Control services inside the Kabul TOWER's area of responsibility, and overall Flight Safety, Meteo Service, AIS (Aeronautical Information Services), FCRS (Fire Crash and Rescue Service) and Force Protection, for the whole airport.

Only to have an idea on its capabilities/airport operations, I will give you some details regarding the number of flights (both side military and civil) and number of passengers/ cargo tones handled (on load/offload) by KAIA CATO (Combined Air Terminal Operations). The period taken into consideration for the aforementioned numbers, is from April 2011 to April 2012, when Romania had the KAIA Lead Nation role:

- number of flights (military/civil) – 126,000

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- number of passengers handled by CATO – 275,000
- Cargo Quantity (in tones) handled by CATO – 91,000

KAIA is also a very “busy” place...more than 5,000 permanent residents and thousands of ISAF/ANSF transient personnel on a daily base, with a lot of different structures and stakeholders which are located inside the airport area, each of them having a different higher echelon and specific responsibilities. This has caused many troubles in managing the airport in an integrated manner, especially for COMKAIA as both Battle Space Owner and GDA (Ground Defense Area) Commander.

2. The Transition Plan: background and considerations

In 2008, the International Civil Aviation Organization (ICAO) was contracted by MoTCA, to develop a transition work plan (WP) and execute it, with assistance from ISAF, accordingly. The WP incorporated a detailed list of activities/timelines related to the transition process and envisaged transition being completed by end of March 2010.

Unfortunately, the WP was unsuccessful, mainly due to difficulties with the recruitment and retention of personnel linked to the lack of involvement and willing at the MoTCA highest level. First, the TASHKIL (translated to ‘Table of Organization and Equipment’) or the MoTCA organizational structure, had not been endorsed by MoTCA Minister, even if the recruitment and training had already commenced. Secondly, the proposed Technical Allowance Scale (TAS), - as a measure to pay and retain personnel once they graduated from the Afghan Civil Aviation Training Institute (CATI) and hired by MoTCA to fill posts identified on the TASHKIL - had not gained the approval from the Afghan side.

The second KAIA Transition Plan, named ‘Transition of Airport Functions at Kabul International Airport (KAIA)’ is an ambitious and big challenge. It has been developed between 2010 and 2011, at ISAF level, and finally was endorsed at JFC Brunssum, in June 2011. The main objectives of the plan are the transfer of KAIA vital airport functions to Afghan side by 2014 and MoTCA to develop the capability to take over and run the airport.

Five airport functions had been taken into consideration to be handed over to the Afghan side:

- Air Traffic Control (ATC);
- Fire and Crash Rescue Services (FCRS);
- Safety Management Office (SMO);
- Meteorological Services (METEO);
- Communications, Navigational Aids and Systems (CNS) Maintenance.

In the same period of time, there were discussed and made the necessary arrangements with MoTCA, on the hand, to solve the problems and difficulties with the recruitment, and retention of personnel (updating, signing and implementing the TASKIL, elaborating and implementing the TAS), and on the other hand, to elaborate and sign a Letter of Agreement (LoA) on KAIA transfer of the aforementioned airport functions between ISAF and MoTCA, as a legal and bi-lateral document on the transition issue. Finally, in March 2012, MoTCA Minister endorsed and has started to implement both the updated TASKIL and the new TAS.

This new Transition Plan was thought to be a reference model, which could be applied, for the transition process, to the other Afghan airports, where are located NATO/ISAF bases, such as Kandahar or Herat.

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Speaking about the phased approach, the plan has three phases (at certain point, phases have to be developed in parallel):

- Phase I - Capability building (Afghan human specialized resources), in five recognized vital airport functions (they have already mentioned above). This phase is on-going and I will give more details on it in the next chapter, because Phase I is linked to the purpose of this paper - the HRM based on a case study.

- Phase II & III: Equipment & Infrastructure (SHAPE will produce guidance with regard to extent of the investment)

Preconditions for success and considerations:

a) legal:

- Afghan Civil Aviation Law and Afghan Civil Aviation Authority to be in-place and effective working;
- LoAs to provide assignment of MoTCA personnel to KAIA, for the Transition period;
- Essential Qualifications/certification to be comprised in the Job Description, in accordance with ICAO and NATO standards;

b) KAIA CE (Crisis Establishment) balance between gradually increasing of Afghan/ MoTCA employees and decreasing of NATO/ISAF/ contracted personnel, accordingly.

c) Mentoring:

- a number of mentors from NATO side to train the selected afghan personnel on OJT (On-the Job Training) program and they have to be maintained in the future for the personnel/new equipment to be taken over by Afghan side during Phases II and III.
- it was the intent that the mentors would be primarily responsible for ensuring that the MoTCA personnel, selected to be trained/ prepared to take over the responsibility from ISAF personnel, will achieve the necessary qualifications/standards in order to assume their operational duties.

3. Phase I: capability building (human specialized resources)

This Phase has already started and it will set the conditions for follow-on work that will be needed in subsequent Phases (including equipment, infrastructure, contractors, airspace etc). The final goal of the Phase I has been (as I have already mentioned) “the gradually handover of the following operational/ airport vital functions at KAIA, from ISAF to Afghan Authorities, represented by MoTCA:

- Air Traffic Control;
- Fire and Crash Rescue Services;
- Safety Management Office;
- Meteorological Services;
- Communications, Navigational Aids and Systems (CNS) Maintenance”

It was established that the execution/ implementation of the Phase I, had to be applied independently to each of the above airport functions. Also, the operational capability of KAIA had not to be affected during this Phase as it has been imperative to ensure the continued delivery of safe and effective airport services to both civil and military air traffic (building of human capacity was considered not be at the detriment to normal operational services).

The selection of candidates had been made by MoTCA during the first trimester of 2012, along with their vetting, ensured by the specialized structure from ISAF/ ANSF. There were a number of trained Afghan nationals in the fields, in the past, but for most of

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them, considerable time has occurred since formal education and practical application have taken place.

The courses/OJT program started in April 2012, when 15 mentors from a NATO country, arrived at KAIA in March 2012, have been ready to train the selected candidates, to qualify them (only for those who has been in one of the TASHKIL positions), to be licensed by MoTCA. A formal agreement between MoTCA and ISAF to define responsibilities and liability was necessary to be signed, in order to allow training and certification of MoTCA employees.

Speaking about the selection, the candidates had to fulfill as a minimum, the following requisites:

- Education at High School Level – Grade 12;
- Aeronautical / Aviation background;
- Good command of English (Understanding, Speaking, Reading and Writing);
- Driving License;
- Good physical and psychological condition.

All candidates were subjected to an individual evaluation based on:

- test on general aviation and aerodrome concepts (40% weight for final result);
- individual interview with the applicants (30% weight for final result);
- applicant's curriculum (30% weight for final result); the Curriculum's evaluation criteria took into consideration the following factors:
 - Education
 - English Level
 - Experience in aviation field.

Some essential employment conditions had been established between ISAF and MoTCA, as follows:

- MoTCA Tashkil and TAS to be in-place;
- MoTCA cooperation with ISAF has to ensure that only the Afghan personnel who meet minimum qualification will be included in OJT program;
- training will be made in accordance with GIRoA Civil Servant's Law and the technical requirements of the specified position;
- supervision of MOTCA employees designated for training or working in the areas covered by LOA, will be a joint (ISAF/MoTCA) responsibility;
- administrative supervision as required by the GIRoA Civil Servant's Law and associated regulations will be the responsibility of MoTCA supervisors;
- the MoTCA selection of the Afghan personnel, has to be done in the most objective manner, with oversight from ISAF side, in accordance with LoA between MoTCA and ISAF;
- for Afghan Meteo future employees, must be re-called on duty those which ISAF has already trained in the past and left due to they were not on the TASKIL.

4. Conclusion

NATO, ICAO, and US Federal Aviation Administration (FAA) cooperation in Afghanistan has been vital in moving forward the complex, multi-faceted problem regarding the handover of responsibility of KAIA from ISAF to GIRoA. The recruitment and retention issues that have plagued previous plans to grow capacity in key specialist areas have now been resolved.

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Through a concerted effort between ISAF and MoTCA, the publication/endorsement of the TASHKIL and TAS created the real opportunity to grow the necessary skills and experience and finally, to start the process of transition. This should be regarded as the first step of many but is vital if transition is ever to be achieved. For example, rehabilitation and normalization of the aviation sector and infrastructure/equipment issues are equally important for the process to be completed.

We have assessed that, whilst a small initial investment in terms of manpower is required (just 15 mentors), the savings are significant (more than 80 CE Posts). A further 25 CE posts will be saved once the Afghan personnel have assumed the leadership and supervisory roles bringing the total saving to more than 100 CE posts. As a result, NATO will save a big amount of money (e.g: an average monthly payment for an ICC is around 7, 500 Euro; for an Afghan LCH is between 500 \$ and 1200\$ depends on the field, the biggest payment is in ATC field and the lowest is in FCRS)

However, even if the Plan seems to be achievable, there are some challenges and a certain grade of risk which from my point of view, can hamper or delay the implementation of the Transition Plan, such as:

- willing of the Afghan side to be really involved in the Transition Plan.
- TAS/ Payment issues:
 - to retain the Afghan personnel trained and qualified by ISAF trainers;
 - to retain the Afghan personnel graduated from CATI
- availability of the trainees for the training program;
- additional tasks out of the OJT program to be given by MoTCA, for trainees;
- quality and experience of the majority of the Afghan personnel is very low in comparison with ISAF personnel (especially ICCs);
- problem to find the suitable Afghan candidates, due to the very limited percentage of the people with a high school degree (almost 90% of the Afghan population are illiterates).

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**THE PLANNING-PROGRAMMING-BUDGETING SYSTEM
(PPBS) - A REVOLUTIONARY DECISION-MAKING AND
MANAGEMENT TOOL**

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Abstract: In this short paper, we try to analyze and outline the importance and implications of PPBS, its nature and role and its potential impact on governmental agencies and institutions.

Nowadays, more than ever before, organizations and institutions – generally, and governmental agencies and institutions – especially, are being confronted with the concept of PPBS (planning-programming-budgeting system). In a very complex world, in the context of evolution of the society, we need a process for identifying, costing and assigning a complexity of resources for establishing priorities and strategies in a major program and for forecasting costs, expenditure and achievements within the immediate financial year or over a longer period.

Key words: planning, programming, budgeting, resources, cost, decision, strategy, priorities.

1.Introduction

The Planning, Programming, Budgeting System (PPBS) is an in-depth budget format in which strategies are planned in multi-year increments, programs are regularly analyzed to ensure optimal strategies are in place, and budgets are developed to provide resources according to those strategies. PPBS was mandated for all federal programs by President Johnson in the 1960s and later rescinded in the 1970s, however the U.S. Department of Defense (DoD) has continued to use it for over 30 years.

The planning-programming-budgeting system (PPBS) should be regarded by Extension personnel at all levels as a new and exciting tool to be used in the development, management, and evaluation of Extension programs.

The special attraction of PPBS for Extension personnel should be in the development and evaluation of new alternatives or new courses of action for achieving specific Extension goals. Many Extension programs have not been subjected to the thorough review provided by systems analysis. Every Extension administrator wants to do more than his resources will allow. PPBS will help that administrator make choices between competing programs.

Those who master the concepts, learn the techniques, and begin the process of implementation will benefit both in terms of the quality of their own programs and in the amount of scarce resources allocated to them. PPBS is best thought of by the Extension administrator as a package of techniques for assisting in the allocation of resources, management of programs, and evaluation of total Extension effort.

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Basic to PPBS is the development of very specific objectives for the organization and the structuring of programs to meet these objectives. This is accompanied by the development of analytical studies to identify alternative means of reaching objectives, their versus their benefits, and the development of a management information system that will assist program administrators in determining how well they are doing what they set out to do. The programs, and the analyses developed, those responsible for resource allocation among competing programs (in both administrative and legislative roles) will have their decision pre sharpened and the total resources available to the organization be more effectively used.

2. PPBS – general overview

The main purpose of PPBS was to develop explicit criteria, open to thorough debate by all interested parties, that the Secretary of Defense, the President and Congress could use to measure the requirement for and sufficiency of defense programs.²³ Central to this purpose was to link, integrate, and provide a bridge between planning and budgeting, so that planning would be fiscally informed and annual budgets would follow instead of leading plans.²⁴ The PPBS developed by Hitch and others on Secretary McNamara's staff facilitated fulfilling the purpose by identifying the system's fundamental principles. [1]

The PPBS is a cyclic process containing three distinct but interrelated phases: *planning*, *programming*, and *budgeting*. In addition to establishing the framework and process for decision-making on future programs, the process permits prior decisions to be examined and analyzed from the viewpoint of the current environment (threat, political, economic, technological, and resources) and for the time period being addressed. The decisions shall be based on and consistent with a set of objectives, policies, priorities, and strategies. The ultimate objective of the PPBS is to provide the managers the best mix of human resources, equipment, and support attainable within fiscal constraints. Throughout the PPBS, the manager can provide centralized policy direction while placing program execution authority and responsibilities with the organization components.

The purpose of the PPBS is to produce a plan, a program, and, finally, a budget for the organizations.

In the **planning** phase, the role and posture of organization in the world environment shall be examined, considering enduring the need for efficient management of resources. The focus shall be on the following major objectives: defining the strategy necessary to help organization maintain and grow in the future; planning actions necessary to accomplish that strategy and ensuring the necessary framework (including priorities) to manage organization resources effectively for successful activities accomplishment consistent with resource limitations. This review shall culminate in the issuance of the organization guidance.

In the **programming** phase, the organization shall develop proposed programs consistent with its guidance. These programs shall reflect systematic analysis of activities and objectives to be achieved, alternative methods of accomplishing them, and the effective allocation of the resources. In this phase are analyzed the programs to provide a risk assessment based on the capability of the organization and support program to execute the strategy approved during the planning phase. A program review is conducted.

In the **budgeting** phase, the components of organization will develop detailed budget estimates for the budget years of the programs approved during the programming phase.

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There are several elements that identify the organization's budget as the product of a PPBS. In PPBS, budgets are developed on a multi-year basis and framed in terms of programs, rather than line items. The budget briefing outlines service requirements based on the programs and strategies, and accounts for them in the long-term. Necessary strategic and budgetary changes are projected into a file, much further than other standard budget formats. PPBS also calls for analyzing alternatives and cost effective methods to achieve objectives; the budget briefing demonstrates this in discussing what should be terminated or modified in the Year Program of Public Acquisitions (*what, how much and how we buy*). The PPBS can also be characterized by its framing and extensive justification of the budget in terms of objectives and strategy. [2]

The fact that governmental organizations has elected to use this budget method demonstrates its perceived adequacy. Chief among the benefits of the PPBS is that it allows for the use of policy and analysis as a guide for budgeting. Unlike incremental budgets, PPBS is a system of planned progress, when policy from higher up on the hierarchy provides the basis for budget estimates in the lower levels. The emphasis is placed on accommodating changing needs based on shifts in policy instead of continually funding programs because they simply exist. This is also allows the organization to categorize funding under objectives that may involve several agencies, strengthening resources for those objectives, instead of funding by agency and possibly fragmenting resources.

Also among its strengths, the multi-year forecasting of PPBS transforms the annual routine of preparing a budget into a conscious appraisal and formulation of future goals and policies. Taking a long-term view allows for deeper economic analysis which is beneficial not only in that it is more objective, but it also informs the policy behind the budget. The PPBS continues to be successfully used by governmental organizations because it bands together agencies performing similar and interrelated tasks, it integrates policy and objectives with the budget process, and provides a format for the organizations to forecast long-term goals through the budget.

But, despite these strengths, PPBS has some limitations. The usage of PPBS is not without shortcomings. The primary drawback is that PPBS is not a widely used system, thus organizations are forced to translate their budgets into standard formats. In addition, PPBS can be very time consuming because it is not iterative, thus each year requires new reflection on objectives and policy priorities. Using a PPBS requires technology with the capacity to handle very large, complex data. In recent years, this has become less of an issue, but in the early days of adoption it presented a major challenge. Finally, framing budgets in terms of objectives results in little tactical instruction on the daily implementation of those budgets. [3]

One of the best attributes of using PPBS is the transparency of priorities. Authorities can request the organizations explicitly their priorities and can see this.

3. Cost-Benefit Analysis and Systems Analysis

Through the adoption of PPBS, some of the tools of the economist are being applied to the decisions made in the public sector. The economist is concerned with the allocation of resources to competing demands. As part of the program examination it might be well then for administrators to examine the alternatives to meeting the needs of the people.

In some cases an activity must be carried out under conditions of political necessity. The role of the analysis then will be to find the set of programs which reach the target while minimizing the use of resources. In other cases the program to be chosen might

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involve a trade off between targets or specific target groups. Basic Extension activities (e.g., off campus courses for credit) would be an example of a minimizing situation. In **cost-benefit analysis** or **cost-effectiveness studies**, there is a thicket of problems to be considered, including secondary benefits, the length of project life, and the choice of the proper discount rate.

The benefits to the individual and to society are measured in increased incomes to participants in the courses. This can be estimated by data from local sources or imputed by using national data. Obviously it is not proper to credit all increased income to additional activities, but this might suggest the types of activities will have a high payoff to the individual.

The length of the project life will probably not be a great consideration in Extension work, but it might be a consideration in comparing a new system of teaching (as a TV tape) with the teach role. The life of the equipment will be one of the crucial estimates to be made. Another consideration will be the selection of a discount rate for discounting the stream of benefits; usually a low rate favors long lived capital with future benefits; a very high rate would favor systems with an immediate payoff and low capital use.

An important part of PPBS is **systems analysis**. It is a methodology, a way of looking at problems of choice under conditions of uncertainty. As a methodology, it demands as its first step a very clear statement of organizational goals or objectives. These objectives must be stated clearly and operationally—in terms of the things done to meet objectives.

The notion of a system and its analysis implies that if the objectives, the means, and functional responsibilities are specified, a task can be performed more efficiently. The system components be arranged so that compatibility and purposeful performance be achieved by organization and adjustment of system components.

The concept of a system and the analysis of the components their relationship to the total system is a skill that all Extension staffs must begin to develop. A county director looking for a topic for his next administrative conference would do well to forget about rehashing the intricacies of the expense account forms and spend a day in a systems analysis workshop.

Systems analysis demands a multi-discipline approach to the problem. A systems analysis team ought to include economists, sociologists, political scientists, as well as the program experts of Extension. In many ways, the county staff of Extension is a systems analysis team, if its members can just be taught to look at their problems in an analytic, systems-oriented way.

Using the operationally defined statement of objectives, systems analysis then proceeds to examine the alternative ways of achieving these objectives, the costs of the various alternatives and the benefits obtained as applied to costs.

Given the necessity for quantifying objectives for educational programs, the most immediate payoff for systems analysis in Extension today may well be in the area of identifying new alternatives. The challenge of PPBS and systems analysis for Extension is in the imaginative application of the techniques of systems analysis, a consideration of the interaction of all the sub-systems, the extension of the boundaries of the system, and the identification of new alternatives.

A fundamental requirement of systems analysis is that it be open and explicit. This means that assumptions, calculations, data, and judgments are laid bare for both proponents and opponents of policy to examine. Obvious errors, inconsistencies in analysis, and faulty data are easily identified by friend and foe alike.

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Systems analysis should be oriented to outputs rather than to the inputs of Extension programs. Expenditures must be tied to specific goals. The analysis should not be oriented only to inputs such as conferences, short courses, workshops, bulletins, staff time, and media. These are not goals in themselves, but only instruments to achieving goals. Extension agencies will be forced to shift attention away from traditional and often beloved instruments. They must focus on explanations of their objectives rather than their means. If the analysis indicates the beloved instrument is of little utility in meeting the defined objective, then the analysis will have been I worth the effort.

Extension, as well as the total university, must begin to evaluate the benefits of the various techniques used in its programs. Some form of media or format evaluation will have to be a part of an Extension PPBS effort, and in fact should be done without PPBS. The introduction of much of the new educational equipment into the Extension effort comes at a time when it can be evaluated by a PPB System. It may be that the cost of an additional agent could better be allocated to the development of an effective programmed learning text, a loop film, or an imaginative TV tape.

4. Conclusion

In conclusion, PPBS is an important decision-making and management tool, of real use to activities. More and more, organizations will be asked to illustrate its usefulness to the society it serves. PPBS will I assist in showing what is useful, what is wasteful, and will assist in the management of the change that is taking place in the mix of programs.

Although modified frequently, PPBS evolved into PPBE and exists today because PPBS was never meant to be a closed, rigid or perfected management system. Components thus often view PPBE as taxing, overly complex and unresponsive to some of their concerns.

Despite some limitations inherent in the PPBS approach it has remained steadfast and still represents the best budgetary option for the governmental organizations. At this time no other budgetary system has the same capacity for long-term planning, integration of multiple agencies with similar goals, or direct link between objectives and budgetary prioritization and policy implementation. The size, complexity, and importance of the operations of the modern organizations demands a budget system that addresses all those elements and allows for regular reexamination of objectives, PPBS is the most suitable system for them.

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COMMAND OF A LIMITED RESOURCES AND CONSTRAINTS BASED ENVIRONMENT

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Abstract:

“Let’s take the resources that we have and prioritize, manage and focus our energy on just doing things that count – on real results” – Phil BREDESEN [1]

Managing an organization is a challenging task. Management skills within a private company are measured in money and employees’ effectiveness. There are many ways to analyze how that company is doing its business, how resources are used and how efficient they return results.

Managing a military organization is a different business, on terms of resources, efficiency, costs and results. How to train military managers and leaders, how to use their skills and check their abilities, is a challenge itself.

Key words: Manager, leader, military organization, resources, efficiency, results, challenge.

1. Introduction

It is natural and easy for people to talk about leaders, managers, skills, prerequisites, role, responsibilities and duties, as it is to talk about the weather. Main reason for their smartness is that people were born to manage and lead, as they could do in their childhood.

Behind the story there is some truth, laid in the fact that, indeed, some people were born leaders. The complete truth is that all the others study hard and learn how to lead and manage and, even so, they need years and years of experience to pretend they have all necessary skills to take an organization to upper floors.

2. Ship’s environment

When people talk about ships, their mind takes them to the middle of nowhere, with sunny weather, quiet environment and the most beautiful sunset. And it is partially true. What they don’t think of are the people onboard, making each trip a safe return.

The ship itself is an environment of physical space, emotions, relationships, tasks, duties and responsibilities, just like a metal body, specially designed to travel on rough seas, as it travels on calm seas, where the crew is the heart, the head, the arms and the legs, and the ship is to its members, at the same time a home, a workplace, a teambuilding and a training ground.

Working with 200 crew members on such a limited space and for a longer time, in the middle of the sea and away from the beloved, is a very demanding, but still such a wonderful job. Crew members, raging on age from 19 to over 50 years old, are pieces of a

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very complex puzzle, on which everyone has its own role, small from the individual point of view, but important to generate the perfect puzzle.

As any military organization, there is a specific chain of command onboard ship that consists of officers and senior petty officers, with strict and clear rules.

Besides the official chain of command, there is another mix of informal leaders, respected petty officers with no command positions and some trying-to-be-respected petty officers, as well as senior and respected sailors. The human nature of crew members places them into smaller, interest oriented groups which include, as a general rule, different ranking petty officers and, sometimes, even senior sailors.

Within this complex environment, there are two main issues ship's command must deal with: leadership and resources management.

3. Human resources

Ship's complement is structured into a pyramid shape, having the commanding officer and executive officer on top, followed by different size groups, ranging from 10 up to 70 crew members, each of them led by an officer, on a 2 to 3 top-to-down level of command.

When an officer is assigned onboard a warship, no matter the position he is appointed to, he knows there are some challenges he should face.

There is always the eagerness to prove own capacity, ability and skills to command a group of people. There is also the natural tendency to impress your boss, as well your subordinates, on the marvelous things you are able to do. You can impose your ideas, your words become action and you see results, and this makes you feel great and, the upper you go in the chain of command, the greater you feel.

On the other hand, to get to do all these things, you need to be the restless apprentice, to learn how to listen and when to talk, to learn to be empathic but also to ignore, to be kind but also strict, as many other may-not-seem-important skills.

For the command team, working with such a variety of people is the most challenging of all tasks, as all should have the same direction and the same pace on achieving designated organizational goals.

Thus, officers must develop a special relationship with their subordinates, in terms of professional and, maybe the most important, a long term relationship of personal trust.

There is an important feature that, besides the professional training and responsibilities, makes a difference between officers and the other members of the crew: the time spent on the same position.

The officers graduate military school having in mind their upward military career, which could end at the rank of Admiral and a large organization to command. As a result, they spend less time in the same place and change many positions, as they advance during their career, getting more people under their command and bigger responsibilities.

On the other hand, petty officers have generally technical responsibilities, with a limited room for evolution and, as a consequence, they spend more time on the same position. They have to carry out repetitive tasks, which have no or minor changes, during their years of service onboard.

Under these circumstances, there is sometimes a severance between officers and petty officers, generated especially by behavior differences: the task-oriented attitude of the officers and the ease-oriented attitude of the petty officers, which if it is not properly managed, could generate tensions and disputes among crew members onboard.

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4. Human resources management

From the command's perspective, the crew must be efficient, motivated and willing to contribute to accomplish ship's tasks. Command team, as the top level management onboard, must deal concurrently with the officers, petty officers and sailors onboard.

There are many issues to consider, when we approach this matter. As already presented, officers spend less time on the same position, which might cover one to three years, while petty officers might spend from one to up to 10 years onboard the same ship and, sometimes, on the same position.

Onboard ships, most positions for petty officers and sailors are filled in and there are very few gaps, which has a double effect: on one hand, you have a stable and experienced crew and, therefore, you should have the prerequisites to accomplish your tasks. On the other hand, there could be some long-lasting informal petty officers who might try to make their life easier, in terms of professional frankness.

As human resources managers, the command team must foresee future missions and must keep track of all personnel, to maintain key positions filled at all times. There is an unwritten rule that says that commanding officer focus is on next one to two years, executive officer on six months to one year, and their immediate subordinates within the next six months, while the lowest command level focuses on next month.

Besides the crew's future pay role, there must be a continuous attention paid to the day by day organizational issues. Among other things, command team should be among people to notice their behavior, attitude, mood and willingness to perform.

There are cases when command team has little or no room for decision, as they might be imposed from their superiors. Therefore, commanding a unit is not only managing own resources in accordance with the missions, but also deal with extra tasks, within the same time and using members of his crew. One of the most challenging issues is to be impartial, to be frank and to share out the tasks, on a balanced manner, without inducing supplementary tension among crew members.

Some of the things to be considered are presented in the next paragraph.

5. Things to consider

Ideally, ship's crew is a stable, mission oriented, willing to perform and to obtain the best results, under any circumstances; in reality, things are different from the perfect case, on diverse degrees.

The continually change of officers makes petty officers encounter many bosses during their service, with own command skills, routine, demands and problem-solving ways, to which they must go along. The higher the position, the higher is the impact over the crew members.

In most cases, a change of command at any level implies changes in attitude, in the way rules apply, problems are solved, people are treated and environment is shaped. Also, due to the fact that officers spend less time onboard, you cannot "scout" and bring people you'd prefer onboard.

Some officers have as target to maintain the morale and motivation, while the best approach is to increase them, as little as possible. This is easier to achieve than one could imagine, implies minor physical and intellectual effort, but a lot of internal motivation and willingness to care.

As an example, one could be task oriented and do anything to solve the problem, with no consideration for his people; other could accomplish the tasks, carrying about his

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people; one could understand that sometimes things just happen and no one could be blamed for, or other could always find a guilty person and apply the top penalty.

Even if you are very task oriented, you cannot do it otherwise but with the people you lead. Tasks are issued and carried out by the whole crew on a top-down basis, while the motivation is born and raised at the individual level. You must be father, mother, priest, psychologist and friend, to induce in people a sense of personal closeness and to build trust, without impeding you in taking all disciplinary measures, when you should do so.

Some superiors are sometimes reluctant to give incentives to the people they command, due to internal or external reasons: they don't know how to do it, they are afraid to look as human beings and lose their power over subordinates or they just don't feel like doing it; on the other hand, externally, they don't have enough courage to assume the whole package of command in front of their superiors, including incentives.

You cannot always ask people to do things, without making them feel respected. They must see their work is cared about, that you don't just use them, that they are part of the team you belong to. If they are happy, they work harder and better and you are happy.

You can't lie and take advantage of their work, as if you had done it all by yourself, because one day, the lies will turn against you.

You must treat them equally, but you must be distinctive in your approach. Knowing peoples' personal problems is not interference within their personal life, but a way to understand them, their behavior and, maybe, use an advice or a way to help them solve their difficulties.

While treating them individually, a great attention must be paid to the small groups people belong to. There is a great threat to leave them loose, as they have their own interests and might compete to each other, on making their life easier onboard. If the groups have an easy life, command team lives a nightmare.

You need to find informal leaders, as they have a weight on moving things among the crew members. On a small ship, this task is quite easy, while onboard large ships, this might take a while, as you could find a very "negative vocal" petty officer as a right target, but the real informal leader is directing from the shadow.

This is the reason command team should always focus on the whole organization, as people but also as leading skills, to be informed, to appraise or to correct attitudes or behaviors, including to the subordinated officers. To do so, command team must make time and mingle with the crew, additionally to the daily formal meetings or activities.

Managers should trust their subordinates' skills, but they must always be alert, to sense things that might work better or even go worse. It is a very well known example when one smart and willing-to-work member of the organization is overwhelmed by his superior, because he does a good and timely work, while other people just wait for the working hours to finish.

Also, there are usually departments which are better managed and work more efficient, and some other departments which need improvement. You must comprehend this and you must treat departments differently; let the better one do its job, with no significant involvement, while for the other ones must be kept a close eye on them.

Another fact is that, due to mentioned conditions, compromises must be made; not all tasks could be performed at highest standards and, therefore, you must balance the urgency, the standards, the importance and people involved and do the best to achieve the best, under the given circumstances.

The rewarding system within the military has not many options; even so, individuals can make the difference between units with a good morale, with a respected-

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by-people hierarchy instead a respected-by-necessity one, with a calm and decent environment, in which you really love to work.

And this is not an achievement to you. It is a success of the organization, no matter the size, under your leadership, created to remain and to extend to the years to come, even after your time to move arrives.

6. Conclusion

Within a military organization, even if it has its specific rules, people lead people and, therefore, all management and leadership theories do apply. It is therefore only up to individuals, to accept to learn and to use the available tools.

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**CONSIDERATION ABOUT RECRUITMENT, RETENTION,
RETIREMENT AND RECONVERSION A CURRENT
STRATEGIC ISSUE FOR THE ARMED FORCES
HUMAN RESOURCES MANAGEMENT**

Captain commander Rădulescu Fănel – RO NAVY

*“Man is the measure of all things: of things which are,
that they are, and of things which are not, that they are
not”*

Pretoqoras (ca. 490 BC – 420 BC)

Navy Staff, Romania

Abstract:

The HRM consist in all activities focused on acquirement, development, motivate, and maintain human resources in the organization framework in order not only to rich the organization's goals with maximum efficiency but also to satisfy the employees needs. HRM is also a strategic and comprehensive approach to managing people and the workplace culture and environment. As a result of evolution and organization's development, the HRM managers have to realize a specific plan dedicated to recruit and retain those personnel which has the requested qualification by the organization. The program implementation consist in personnel recruitment, selection, integration, training, choosing and giving the proper benefits, rewards, and continuously performances evaluation in order to assure the organization's goals fulfillment. The development of human resources consist in training of dedicate persons for dedicate job's position regarding the organization needs. In order to choose the proper preparation of HRs, the HR manager must take in consideration the employee motivation and capabilities. Effective HRM enables employees to contribute effectively and productively to the overall company direction and the accomplishment of the organization's goals and objectives. In order to maintain a good relationship between organization administration and employees, a set of activities such as conflicts management, employee guidance, building-up a strong relationship with syndicates, must be developed at the level of organization. Depending of the organization evolution a set of measures have to be taken in order to employ, remove, or assure reconversion programs for personnel. All that activities is representing the Human Resources Management, and should by same in both civilian and military framework.

Key words: *human resource, performance, strategy, sustainability, recruitment, retention, retirement reconversion, reintegration.*

1.Introduction

The Human Resource Management begins around the end of the 19th century and was dominated by transactional work such as payroll and administration benefits. **At the beginning it was a product of the human relations but later it developed into a domain related to the work environment.**

Human resource management (**HRM**) or (**HR**) should be briefly defined as the management of an organization's workforce or human resources.

As a result of the globalization process, company consolidation, technological growth, and further achievements, Human Resource Management focuses on **strategic initiatives like** top management and acquisitions, talent management, succession planning, industrial and labor relations, diversity and inclusion.

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In the framework of Human Resource Management the HR managers are not only responsible for the attraction, selection, training, assessment, and rewarding of employees, but also they have to oversee the organizational leadership and culture, and to ensure compliance with employment and labor laws.

In the civilian sector, human resources management is viewed as a sum of knowledge, skills, creative abilities, talents, and aptitudes of the organization's members, as well as the values, attitudes, and beliefs of the individuals involved.

The success of human resources management is based on productive individuals, their inherent abilities, and their enrichment based on environmental factors such as education, training, and development.

Starting from this point of view, we have **to deal with** the roles of recruiting, retention, career development, evaluation, awards, morale and welfare, risks assessment in order to provide safety, retirement benefits, reconversion possibilities and compensations for personnel, everything being done within the framework of the armed forces HRM.

For a proper HRM in the military field starting at the strategic level, all human resources managers need to have multi-dimensional and well-integrated competencies to understand and excel in combined and joint environments.

For that, my intention is turn the attention to the major importance that should be given to personnel in the Defense Resources Management, making some analysis on recruitment, retention, retirement, reconversion or reintegration as current strategic issues regarding military HRM.

2. Economic, politic, and strategic environment as an affecting factor of military HRM.

Taking into consideration the actual unpredictable and complex security environment all over the world, it is obvious we must have, adapt, and maintain an up-to-date military force, able to carry out a varied spectrum of contingency operations, following the national interest and/or our in place or future agreements with EU and NATO.

Regarding our UE and NATO membership, due to the future possible changes of the environment and policies, we will have to continue the armed forces transformation process.

Due to that, all military HR managers, at all levels and branches, must possess the skills necessary to face the challenges of the 21st century. To acquire these skills people have to think "with progressive aspirations towards the future we all wish for, through the enhancement of certain concepts meant to project the modernisation of the Romanian Armed Forces of tomorrow!" [1]

That means, as I said before, **that before taking into consideration other things** it is important to have a very clear image in our mind of how valuable human being is in itself or as a resource part involved in Defense Resource Management.

2.1 Economical crisis effects which affected Romanian Armed Forces development

Soon after the financial crisis appeared and hit Romania also, its defense budget for 2010 went down with 13% from 2.5% GDP in 2009. Due to this budget cutback almost 80% of the Romanian defence budget is spent on salaries and pensions, with only about 20% remaining for missions at home and abroad, and no funds have been allocated to the investment budget since 2009 so, no new procurement will be possible until 2014. Moreover, **after the** pay cuts of up to 25% in the public sector have hit the military and defense industry hard, and the seven strategic procurement programmes running since 2007 to complete achievement of NATO standards will also be suspended and we **cannot count on** their fulfillment before 2025. [2]

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In their turn, the EU policies and structures suffer a continuous transformation, and we have to be prepared to face it. For example, nowadays, an article in The Guardian, stresses on the fact that “five of the six biggest countries in the EU, excluding Britain, have called for a radical overhaul of European foreign and defense policies to create a powerful new pan-European foreign ministry [...] a possible European army, and a single market for EU defense industries” [3].

Having this overview, we have to take in consideration the fact that the means or assets should be managed or built-up if the system have proper to tasks, well motivated, skilled, and trained personnel. Without realize the undeniable value of the human resource, almost all decision making processes will vanish, and the mission goals should not be fulfilled, even if the force gain enough budget or top high-tech.

3. The role and place of the human resources at the management level.

Starting from the current approach to military human resources management, some aspects need an in-depth analysis, in order to adopt the scientific approach of human resource management also for armed forces framework. We have to implement concepts, policies, and efficient strategies for the effectiveness of the military personnel, strategies which should be well adapted to society, to the continuous evolution of the military and political environment.

The human resources represent one of the most important investments for any organization and they are the only ones capable to produce and to reproduce all the other resources, which are at their disposition. The human resources are important, few, difficult to copy and relative irreplaceable. [4]

When the HR transformation in the military field was initiated, a series of organizational objectives were established, as follows:

- To develop and implement a well balanced structure based on pyramidal model as well as in other armed forces, NATO members;
- To develop and use a recruiting and selection system able to assure withhold of the personnel with best abilities and potential for follow military career;
- To build-up and implement a flexible promotion and career evolution system, based on professionalism, motivation, performance on previous duties, abilities and potential for future professional development;
- To introduce a new job – “career manager”, at the level of each armed forces branches HQ;
- To reorganize the military educational systems, in order to assure a broad theoretical and practical preparation area, covering all requested aspects from the job description list;
- To prepare the legal basis and implement the system changes needed to replace the conscripts with professional enlisted personnel, allowing the women to work for all Armed Forces branches, and to establish direct and indirect career evolution for all ranks;
- To organize a reconversion system and implement the retirement procedures and compensation measures as a result of the necessity to reduce the number of military and civilian personnel from the armed forces due to the reorganization process of the forces structure.

It was a great effort for the Romanian Armed Forces to find and follow the proper ways to complete those goals. From time to time, being under the time and agreements pressure some steps and phases were skipped, or postponed. That had some secondary effects.

First, the massive retirement generated a hole in the body of the remaining specialists. Then, due to the necessity to fill fast some gaps in the organization system and vacancies, a

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lack of motivation appeared among the members of both military and civilians. To this, the financial crisis effects were added. Unfortunately, the crisis affected all the fields of the Defense Resource Management. **Now is time to focus our thinking, not for today or for tomorrow, because both this time frames are becoming too quickly past and that habit** will anchor us in a loop which will make us blind and unable to cross the boundary to the future. For that, we have to learn how to project the present in the future to obtain the fulfillment of our goals timely updated by using controlled inputs which can occur inherently, and a strategic and comprehensive approach to managing people and the workplace culture related to any relative future environment.

4. Consideration on the current strategic issues for the armed forces Human Resources Management

Human Resources Management should be defined in a general sense as a series of integrated decisions about the employment relationship that influences the effectiveness of employees and organizations. In the military framework we can interpret that as changing the point of view about HRM which has no longer a supporting role, moreover we can say it is transformed in a strategic enabler for the armed forces. [5]

The success of human resources is based on productive individuals, their inherent abilities, and the extent to which those abilities are modified through environmental factors such as education, training, and development.

This is a reason to assign tasks as understanding the roles of recruiting, retention, career development, evaluations, safety, awards, retirement and reintegration, personnel management, morale and welfare, and compensation issues.

4.1 Military Human Resources Management-(MHRM) area of responsibility and related functions

MHRM describes the process of managing people by performing the essential functions of planning, organizing, directing, and supervising effective procedures necessary in administration and operation of personnel management.

The MHRM functions should be as follows [6]:

- *Personnel structure.* This branch of MHRM should manage the part where personnel requirements and authorizations are determined and documented as a function which supports the armed force development.
- *Structure & career evolution.* This function ensures that the Armed Forces is staffed with the correct ranks and skills in numbers sufficient to satisfy force requirements, and has three components.
 - (1) *Manpower management.* The process of linking accession, retention, and promotion targets to Armed Forces requirements as measured against the military manning program in the PPBES.
 - (2) *Accession and retention management.* The process that converts manpower targets to missions and oversees execution.
 - (3) *Training and courses integration.* The establishment of a demand for training programs and a system to control input and tracking of trainees and students.
- *Distribution.* The function of assigning available military personnel to units based on Armed Forces requirements and priorities.
- *Development.* This function begins with accession training and continues throughout a military personnel's entire period of service. It includes institutional training, self-development, leader development and supporting programs such as the evaluation, promotion, and command selection systems.

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- *Deployment.* This function enables the Armed Forces to transition from the “preparation mode” to the “conduct of military operations” mode. Deployment includes mobilization, deployment, redeployment, demobilization, reconfiguration, noncombatant evacuation, and repatriating.
- *Compensation.* This function encompasses the management of all pay, allowances, benefits, and financial entitlements for military personnel and retirees.
- *Sustainment.* This function involves the management of programs to maintain and advance the well being of military personnel, civilians, retirees, and family members.
- *Transition.* As individuals leave the Active Component (AC) for either the Reserve Components (RC) or civilian life, this function provides assistance to military personnel, Armed Forces civilians, and family members.

Another approach based on generic function which should be carried out by HRM as it is presented in the figure below:

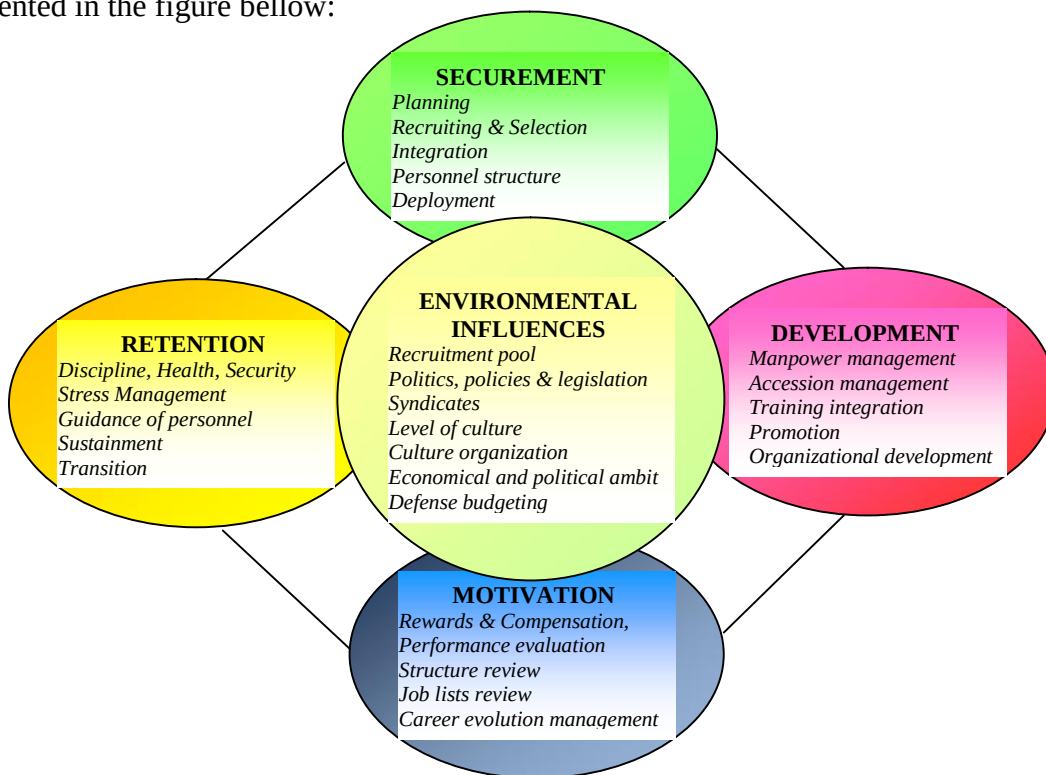


Fig.1 (MHRM functions design)

4.2 Human Resources Recruitment

Recruitment refers to the process of attracting, screening, and selecting a qualified person for a job. At the strategic level it may involve the development of an employer brand which includes an “employee offering” [7].

The stages of the recruitment process general speaking include:

- job analysis and developing the specifications;
- the sourcing of candidates by networking, advertising, or other search methods;
- matching candidates to job requirements and screening individuals using testing (skills or personality assessment);
- assessment of candidate’s motivations and their fit with organizational requirements by interviewing and other assessment techniques. The recruitment process also includes the making and finalizing of job offers and the induction and on-boarding of new employees.

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Depending on the size and culture of the organization recruitment may be undertaken in-house by managers, human resource generalists and / or recruitment specialists [8].

Alternatively parts of all of the process might be undertaken by either public sector employment agencies, or commercial recruitment agencies, or specialist search consultancies.

The armed forces recruitment process is under direct competency of the Human Resources Management Directorate, which according its areas of competence approve the rules and methodologies used in the process of recruitment and selection of candidates and delegates those duties to the information and recruitment offices, which are part of regional military centers.

I will not discuss here about the duties and responsibilities of different structures involved in the recruitment process. My intention is to stress a little on how new members should be attracted to join the Armed Forces, having in mind that civilian labor market is more attractive and can increase its attractiveness in the future. For that I will enumerate some steps, coming from the strategic recruitment process.

- Find out what the turn over rate is for the position and at least match it;
- Offer employee benefit programs like: health assurance, medical and dental coverage, insurance, and so on.
- Make lifestyle part of your employee recruitment offer like: free access in welfare and recreation basis;
- Emphasize the benefits in your offered job description, which is rising as unexpected benefit related to restricted specific of military life.
- Be creative with perks, in order to attract and make your employment recruitment efforts more successful.
- Offer to the recruits some way to move upwards, as the chance to develop new skills, or the certain possibility to gain upper jobs/ranks after receive a dedicated preparation, and gaining needed skills, but before you have to be sure that he/her will get the future possibilities on the table;
- Create a personnel incentive program not only reward their good performance but give them something to look forward, if they chose to work in the armed forces.
- Institute a profit sharing program, as making them to feel it proud of being part of the system, and important for its growth.
- Sweeten the pot in order to determine the recruit to prefer to enter in the armed forces than chose other business. Give them idea that should receive in time a bonus large enough to matter, but take care that signing bonus has to be contingent upon x amount of time of hiring.
- Widen the scope of your advertising. For that is better to place ads in places such as job Web sites and college/university campus boards, for example. Advertise in other towns or cities.^[7]

Other valuable steps to find recruits if the recruitment pool will shrink, should by:

- Connect with your local college or training school.
- Get involved with your local college or university's cooperative training program.
- Hire through a government program.
- Use employment agencies.
- Use the web.
- Put the word out on the street.

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4.3 Human Resources Retention and Development

“Look to the future and identify the components of a military compensation system that will attract, retain, and motivate the diverse work force of the 21st century” [8], (US President Bill Clinton, 1995).

It doesn't meter if we face now the financial crises effects, nobody stop us to figure out the future and to try to be prepared for it. In order to identify how we will stimulate capable personnel to attend and remain in our armed forces we have to analyze and understand what we have to do, when, whit what means, and how. First we have to elaborate a HRM planning, in order to make o parallel or link between recruitment necessity and retention of capable personnel.

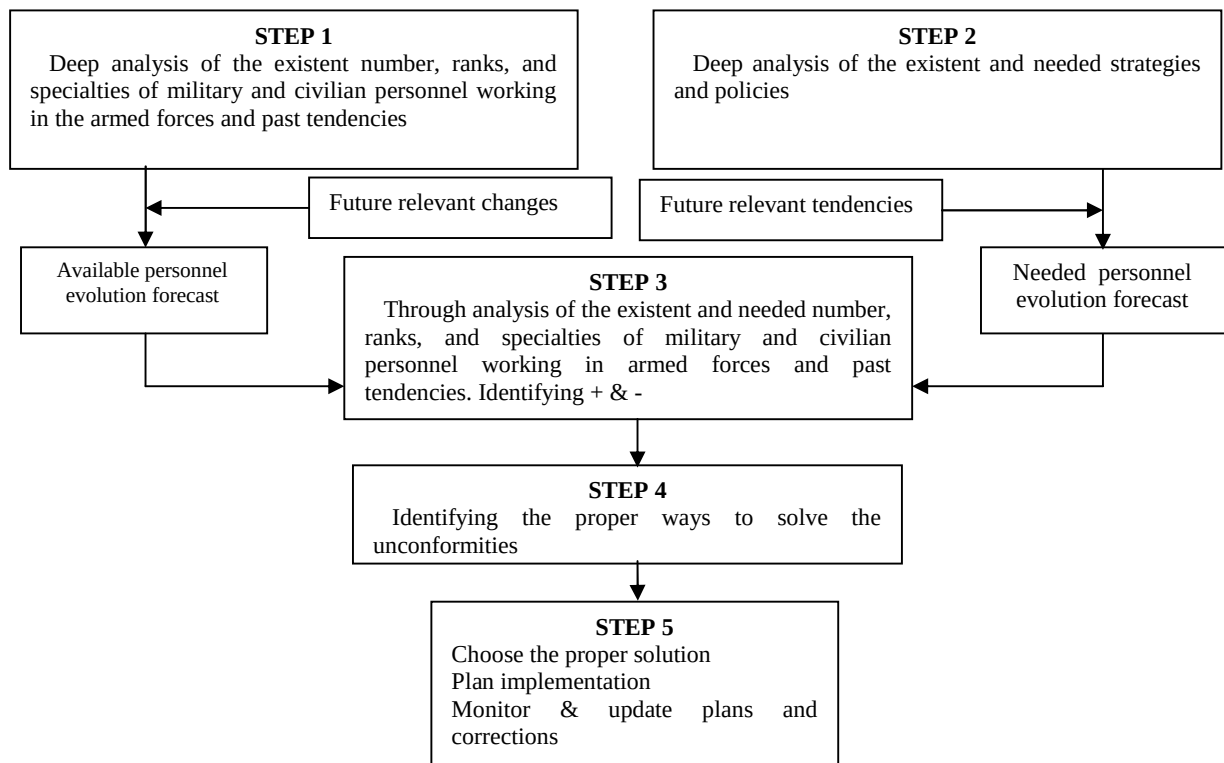


Fig.2 (MHRM Planning)

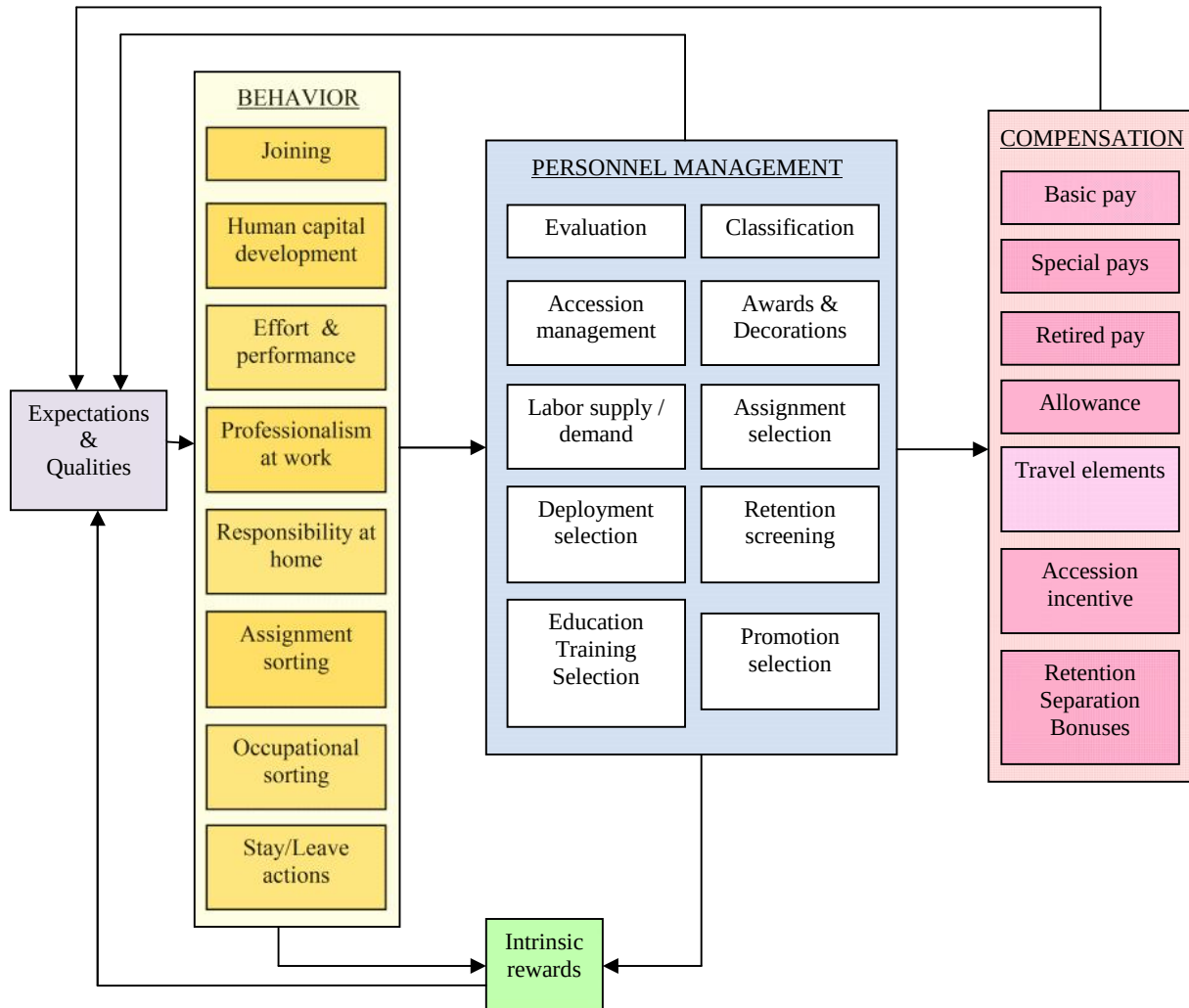
As we can see in figure 2, a possible approach of MHRM planning should help us to: identify the personnel suited for a specific function; identify the vacancies/job places which have to be staffed with personnel or will be revised; elaborate lists of jobs description based on the level of knowledge, abilities and the level of expertise needed; establish the steps and timings, and also to evaluate the entire activities costs.

Now having all that answers, and the identified valuable resource, we can discuss about the HRM personnel retaining process. In that process three main elements are involved and show the interaction between the actions of the individuals in response to the environment (behaviors), personal management processes, and compensation. Figure 3 presents a basic analysis of relations between those three elements as ensemble, without define all component parts and show the interaction among them.

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Fig.3 (Model of circular framework – motivation related to characteristics of rewards) [8]

My intention when I started to elaborate this paperwork was to bring up some ideas, letting the floor for a deeper analysis for whom will be interested, as a result I will present



only the basic principles. Compensation is equivalent with extrinsic rewards; on the one hand it influences the personnel expectations and quality of work, and on the other hand it can be seen as a result of a decision making process and analysis developed at the level of personal management, affected or influenced by the behavioral inputs.

Now, having a broad overview of the interaction of those three elements it is better to figure out the linkages between all sub-elements which represent them.

That is represented in figure 4, above, where continuous lines represent the relationship between behavioral aspects and compensation sub-elements, a relationship related to the part of personnel management referring to promotion, selection in very close linkage with the retention chain elements. All other linkage lines have different effects. The following scheme is very crowded, and should be analyzed, taking in consideration all cumulative aspects and processes generating cape stones for capable personnel retention, in order to be optimized and make it functional for a future MHRM approach.

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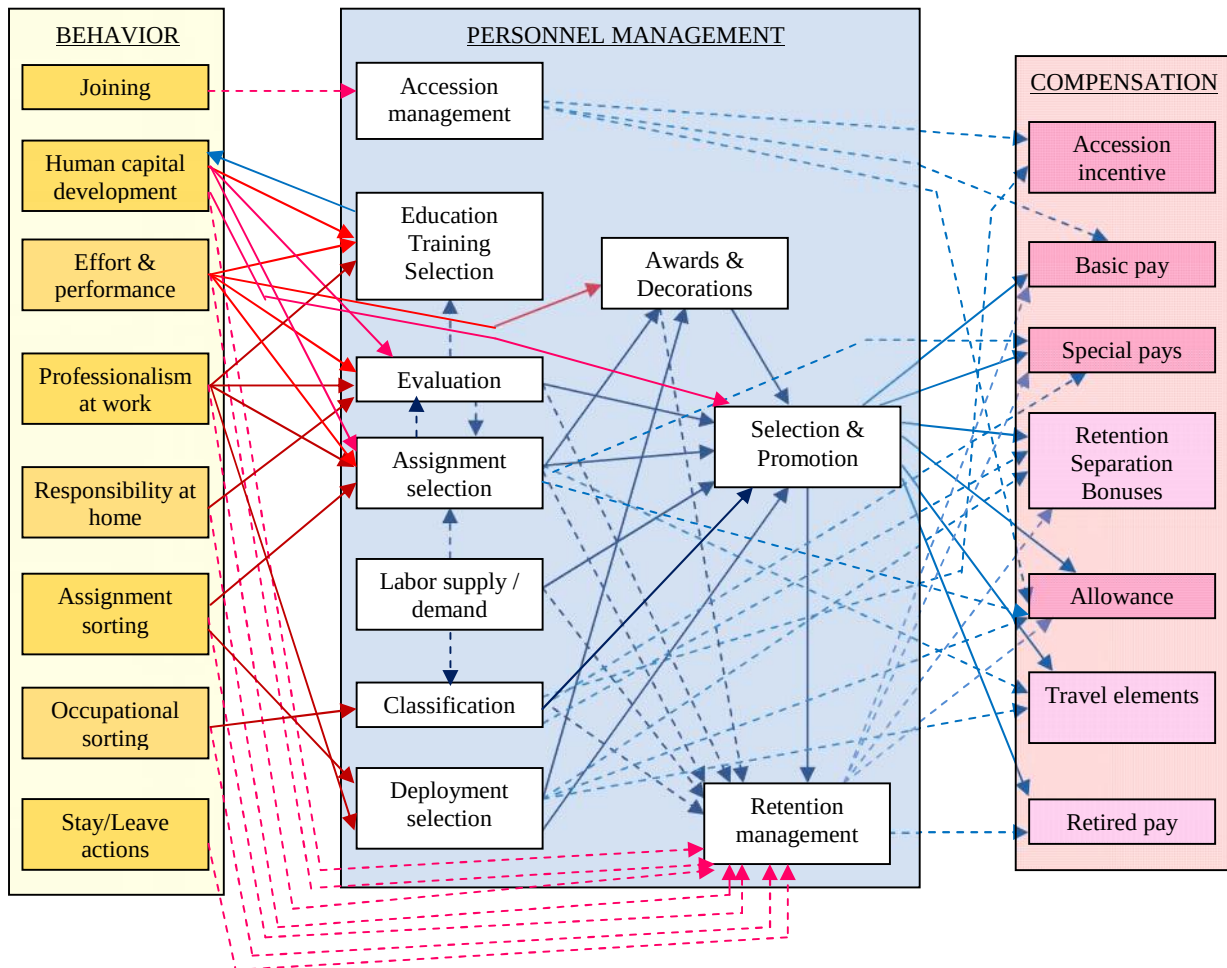


Fig.4. (MHRM system, usual linkages between specific elements) [8].

Within personnel management we will identify a set of elements as Manpower management, Accession management, Training integration, Selection & Promotion and others connected to organizational and individual development, all together, part of the development function of MHRM.

From all that specific activities of development function of MHRM, I will present only two which have a particular importance and should support HR managers in their efforts to form and retain the capable personnel in the armed forces. One of them is forming and increasing personal performance of human resources and the second one is selection and promotion which you can find in figure 4 named selections and promotion or career development in other publications.

Forming and increasing personal performance of human resource activity has as goals: to identify and evaluate the level of professional and personal preparation and capabilities of the armed forces personnel in order to develop for individuals the main competences, which related with their behavioral, mental and physical aptitudes make him or her well fitted for a specific duty or job place. What is missing in our structures at all levels of HRM is the career manager who has to do this job. Without that position in the chain of HRM, career evolution hasn't a scientific approach; it is generally quite a form of foreseeing and follows an individual interest, and is done by the person itself. That should negatively affect the level of motivation and the interest to increase the individual performances. In addition it allows for

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retirement or separation or to not put the right personnel in the right positions, in other words it will affect the career development process.

In one optimized MHRM system training and educational programs will be efficient and effective, only if are integrated in MoD related policies, based on a previous analysis of jobs description for vacancies, evaluation of available personnel to assign those duties, types of training/education needed and armed forces needs. A form of systemic approach is presented in figure 5 in which curriculum & didactics/training planning is orientated towards fulfilling the system needs.

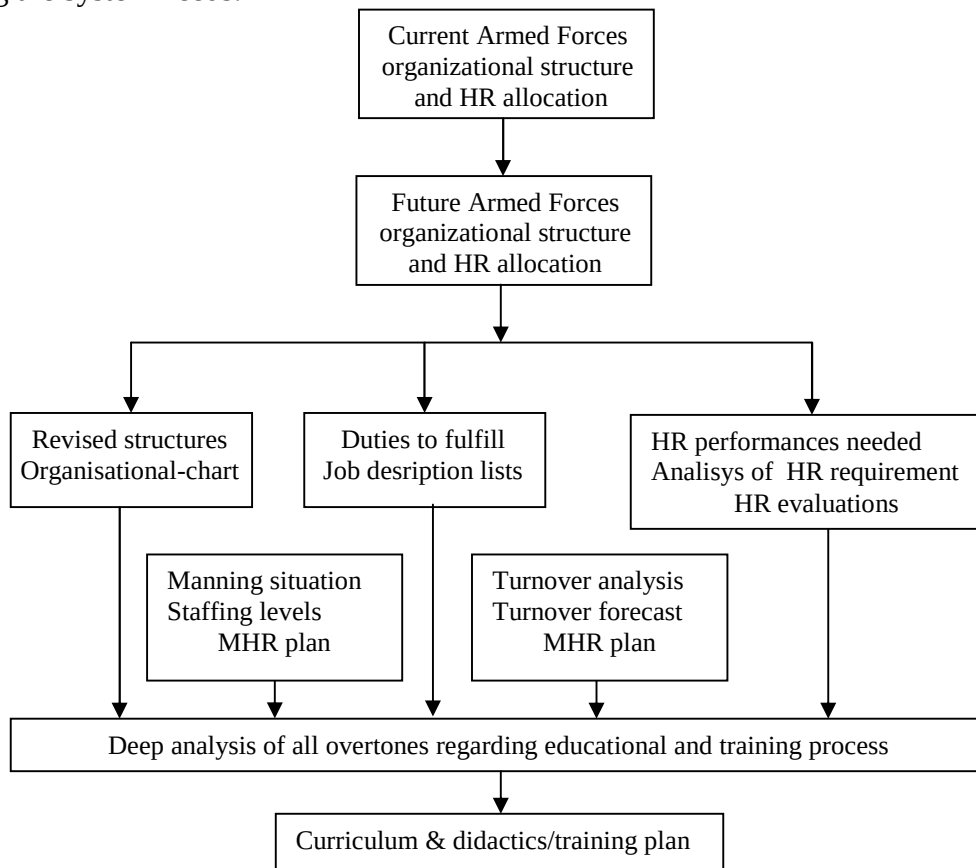


Fig.5. (Curriculum & didactics/training planning)

4.4 HR Retirement and Reconversion

When we discuss about human resources retirement or separation we have to understand the need to develop a MHRM specific function, dedicated to manage this changing of personnel status.

In the US Army, for example, that MHRM function is named – “**The transition function**”, and includes a broad range of activities focused on ensuring soldiers and their families are treated with dignity and respect and assisted in every way possible as they transition from the active service to a reserve/retirement and/or civilian status [8].

To support that MHRM function inside the HRM system a dedicated structure is needed and this structure has to manage some activities like:

- elaborate a broad spectrum of programs and services designed to assist soldiers in making critical career and transition decisions.
- develop some programs in linkages between military structures, structures responsible for labor market management, local and regional military centers, private or under the state control, factory, business or/and other provided services.

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- assure the free access to a large number and spectrum of reference materials and a wealth of information about benefits, civilian employment opportunities, career planning and services available through many, state and local government agencies.

- assure all above also for civilians who leave because of force alignments, reductions in force or base closures.

- establish a strong partnership between the Armed Forces and the private sector, creates a recruiting multiplier, improves employment prospects for transitioning personnel, reduces unemployment compensation costs to the Armed Forces

- elaborate programs dedicated to preparing the soldiers and family members for retirement by providing assistance and information on their benefits and entitlements

- assist personnel who use "Separation" for different motives the form of retirement, form which includes voluntary and involuntary release from active duty, discharge, non-disability retirement, and physical disability retirement.

Obviously, nowadays due to the crisis effects if we are not prepared properly for this lifestyle change, retirement can be extremely difficult. Having that HRM structure in place able to execute the **transition function** requests in support of military and civil personnel working in the Armed Forces, the system will have only to benefit. Why? Because all people from the military system will be motivated, focused on solving the allocated tasks, or fulfilling the missions goals, having the feeling that the Armed Forces through MHRM system take care of them not only when are on active duty but also at the end of the military career.

5. Conclusion

In order to meet the demands of the 21st century, at the level of the MHRM system probable is needed an organizational review or an adaptation of its structure as well as possible in order to indentify and implement HRM function and processes that currently exist within the civilian community, and could be fitted well in the HRM military framework. The key personnel to handle this work its no other than the military human resources manager. Very important also is to bear in mind the value of a well prepared HR manager at any level especially at the strategic level. Also the career manager has in his turn a key position in MHRM system, because he/she is the "watch keeper" of personnel competency improvement, of them career evolution, and a mail in the personnel motivational chain. If the career manager has done a good job, the armed forces personnel managed by him/her for sure will gain the needed knowledge, skills, and/or abilities needed to successfully perform a dedicated job function. Never forget the value of people as a sum in the meaning of terms HR. For that reason the HR Managers must have good knowledge of HR concepts, principles, and practices related to major armed forces programs, such as: training, assignments, separations, relocation, reserve programs, retirements, records management, customer service, strength accounting, casualty affairs, promotions, family support, humanitarian, senior leader management, manpower, evaluations, awards and decorations, special programs, benefits and entitlements, readiness, and protocol, in order to give confidence in MHRM, increase the level of moral, and determination to be part of the armed forces and stay instead of leaving.

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**HUMAN RESOURCES MANAGEMENT
IN PENITENTIARY INSTITUTIONS.
STAFF KNOWLEDGE AND EVALUATION PROCESS**

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Abstract:

Human resources management have experienced many substantial changes as a result of experience gained, the pressures of scientific results and extremely rapid changes produced on all landings of social life. This paper will present the importance of human resources management for the activity of a penitentiary

1. Human resources management – an evolving concept

Human resources management have experienced, over the years, in the light of developments occurring within the scope of the functions of personnel, substantial changes as a result of experience gained, the pressures of scientific results and extremely rapid changes produced on all landings of social life.

For the vast majority of specialists, the sequence of the stages of development of concepts on the management of human resources is as follows:

- the “empirical” period (until the 19th century), characterized by the existence of concerns built on improvisation, use recipe transition of “known for years” experience and intuition;
- the “welfare and prosperity” period (early 20th century), who places the habits and the use of specific methods and techniques of their staff;
- the period assertiveness (inter-war years) to bring into the mainstream the significant increase in the importance of personnel formation, debuting in all organizations, compartments, as administrative support to ensure the manpower required;
- the “management of staff” (1950s) phase “development” – covers the tactical activity, to ensure the entire palette of activities specific to the function of personnel;
- the period of 70s – 80s when the “maturity” - the involvement of managers staff in adopting their strategies in the field of responsibility, as well as the general development strategies of organizations, increasing the role of specialists in the field of personnel activities;
- the period “human resources management” (after the 80s) – the new tactical concept proposes another philosophy according to which staff acquires the status of a main factor for the efficiency of a structure, even the success of it.

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2. The importance of human resources management

All organizations, including those that make up the structures of our institution evolves in a relational environment extremely complex. Within the framework of their people there are those which meet the defined objectives, customer support and internal system to the same extent, which ensure the extension of its organizations to the outside.

As a result, in order to ensure optimal functioning of organizations, managers have the main aims, attracting and retaining staff with the highest degree of qualification, training and the improvement and development/implementation of a system of motivation and compensation.

The increasing importance of human resources management comes from the fact that it influences the activity of the entire institution:

- the analysis and design of posts, in accordance with the needs of the objective of the work;
- the design of a powerful system of recruitment and selection;
- the improvement of the activities of the personnel;
- the modernization of the system of training and continuous training;
- the insurance of a rigorous promotion system;
- the management of careers;
- the more efficient use of available human resources;
- the establishment of an optimal climate for employment, insurance conditions for maintaining health, rapid restoration of physical and psychic potential.

3. Definitions, aim, functions

In the Romanian and foreign specialized literature there are presented numerous definitions of the HR domain:

- all activities relating to the optimal use of human resources for the benefit of each individual organization, and community in general;
- the function that enables organizations to achieve their goals by having an effective work force;
- all activities of an operational nature (planning, recruitment, maintenance personnel) and energy problems (organizational climate implementation), to ensure the organisation with the necessary human resources;
- complex of activities aimed at directing the efficient use of "human capital", in order to achieve organizational objectives, while taking into account the conditions to meet the needs of employees.

3.1. The aim

It is considered that, through human resources management, we ensure the adoption of more effective measures in relation to personnel recruitment, selection, use, stimulation and moral people. All these measures, however, formulated as a prerequisite to ensure the optimum development of the human element. Also, we carry out a reconciliation of the interests of the institution and those of workers by promoting policies, procedures and specific management methods.

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3.2 The specific functions

- planning, which requires policies and management programmes, depending on the nature of future requirements of the organization, peculiarities of the external environment and characteristics of employees (knowledge, skills, abilities, and skills).
- implementation of plans and programmes which includes activities with direct impact on the performance of human activities such as: proper staffing (recruitment, selection, appointment on post), staff training, which involves training and career management, performance management, compensation, and labor relations.
- evaluation results, which highlights the contribution that the policies and programmes have upon the staff to enhance the efficiency of the organization, including the stability of employment.

4. The main activities of human resources management

4.1. Analysis of the posts

Constitutes one of the most important activities of the MRU, due to the fact that, underpins the knowledge requirements of each post and, with it, ensures that persons who correspond the best to the criteria and requirements are hired.

Job analysis involves the description of job tasks and specifies the skills and qualities required.

In order to achieve a relevant analysis of the station, it is necessary to obtain very precise answers to a series of questions, such as:

- Which are the activities that a worker carries out and how can the be accomplished in the timeframe allotted?
- What is intended by activities – objectives and station relations with all other posts?
- What does that post imply: knowledge, skills, activities, which are the requirements at the station?

The most commonly used methods for the collection of the information necessary for the analysis of the questionnaire are: job interview, observation, journal, conference and critical incident technique.

In the process of analysis of the workstations there are involved: the holder of the post, the superior and an analyst specialized in this kind of activities.

The stages in the analysis plan, are:

- preparation (setting goals, responsibilities and the persons involved);
- identification of stations;
- the choice of methods of analysis, and that it will be applied;
- direct collection of information;
- drafting the description of posts;
- post specifications (establishment of job qualification requirements for tasks): a training station, the level of responsibility and mental capacities (initiative, presence of mind).

Analysis of workstations shall be carried out in order to achieve an understanding of the content of the work, of the mechanisms through which the staff can be motivated, the standards of the time required to perform tasks and how the work relations and professional quality of life could be improved.

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4.2. The recruitment, selection and employment of staff

Human resources recruitment is the activity which consists in determining the potential candidates for a particular post.

Recruitment ensures: searching, identifying and attracting potential candidates to fill certain positions through direct employment, the appointment of staff in different positions.

In our system, the work of recruitment, selection and recruitment is precisely regulated by orders and instructions, the role of the Director is to attract qualified personnel for the post in question.

Managerial decision on recruitment will operate in relation to the following aspects:

- attracting and identifying the optimal number of candidates, through the establishment of target groups and areas with the highest probability of success;
- to make a report as quickly as possible between posts that can be filled from the outside the institution and those which can be filled by promotion from within;
- promotion by means of recruitment to the interests of the institution;
- designing a recruitment policy in line with the personal dynamics;
- to promote, as far as possible, through recruitment policies, protection of personnel already employed;
- presentation, to make them more attractive, vacancies, so as to ensure the recruitment, high performance;
- limitation in design time and cost to the minimum necessary, tasks inherent in the process of recruitment.

All these problems can become recruitment policies, which the directors may develop according to talent and intelligence, without prejudice in the way the provisions of normative acts that govern the activities of staff.

The directors will take into consideration, in particular, that a strategy hiring should be developed in three main directions:

- the system of recruitment is reflected and must be consistent with the strategic plans of the institution being closely related to the mission and its objectives;
- the recruitment system will be put in relation to the external environment, being influenced from this perspective of the General characteristics of the labour market, legislation, and regulations existing in different fields;
- the recruitment system will be based on previous experience in the field, both successes and failures related to this plan, which will influence such sensitive efforts to achieve future recruitment.

The methods of recruitment of personnel relate mainly to the environment in which it is carried out. Thus, the institution has as alternatives to fill vacancies, recruitment from outside or within its structure.

In the penitentiary system the headquarters announce the vacancies and the conditions of their employment. Applicants for the educational institutions of the National Administration of Penitentiaries come mostly from outside of the institution, but there are not provided the circumstances in which the staff from the structure may participate at the exams.

Internal recruitment has the following advantages:

- allows knowing very well the potential candidates;
- it is faster and less expensive;

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- ensures the motivation of the staff;
- strengthens the feeling of belonging to the institution.

Internal recruitment has the following disadvantages:

- there are no suitably qualified personnel for the post in question;
- moves, even promotional offerings, are currently hard to accept.

External recruitment has the following advantages:

- identifying and attracting candidates with superior performance;
- offers the chance of comparison between domestic and foreign candidates;
- ensures the infusion of "fresh breath";
- contributes to the removal of the routine that you can install.

If the recruitment of personnel does not pose special problems in itself, being necessary to identify persons who possess the knowledge and skills that is required by the post for management posts, the directors will have to take into consideration the following aspects:

- for the first time, candidates from the inside, analyze the candidates from the outside.
- conduct the recruitment thoroughly in order to ensure that those recruited for the job will be effective;
- appropriate assessment of candidates, because a recruitment of second hand, will lead to the classification of a manager of the same category;
- location, identification and recruitment of suitably qualified persons and with the desire to occupy the post and function.

Personnel selection is the process of determining the quality of candidates from within and outside the institution to be enrolled in the vacancies or to be admitted to the educational institutions of the penitentiary system.

In order to carry out a selection, the selection of strategies designed institutions which, in principle, include the following:

- the establishment of performance criteria and conditions for the selection of candidates;
- development of techniques and methods for conducting the selection process;
- procedures for assessment of candidates;
- the establishment of rules for obtaining the necessary information about the candidates;
- the use of information acquired in the course of the selection;
- measurement of the final results of the selection;
- analysis of the effectiveness of the Organization and conduct of the selection and adoption of appropriate measures.

Efficiency of selection can be made by taking the ratio between the number of candidates who will demonstrate efficiency and will be successful and the total number of persons submitted by the selection.

In the process of preparing and conducting interviews, the following are recommended:

- the restriction of the use of the interviews for the selection of candidates to situations when this method may be relevant;
- the establishment of clear criteria for the selection and elaboration of appropriate system correlated to the appreciation of a scoring or summary of replies;
- obtaining relevant information about the candidates;

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- thorough preparation of the person conducting the interview;
- fixing the set of questions for the candidate, who will refer in particular to the objectives, plans, ambitions, motivation option for democracy agreed, type of activity, the level of training, work experience, qualities and defects, failures, and are developing knowledge about the institution and how he thinks it can serve.

The tests will involve identifying candidate qualities and defects and to establish a ratings of their skills.

Often, tests prior to the interviews may be made in the register of restrictions and contraindications for the posts envisaged.

The main activities carried out in the selection process are:

- advertising on the organisation of the selection;
- preparation of organizational activities;
- completion of the application;
- medical examination;
- psychological testing;
- verification of the physical skills;
- testing for recruitment;
- interviewing;
- decision of the hiring board.

5. Evaluation

Professional performance evaluation means determining the formal, periodic manner in which the members of the organization fulfill specific tasks for the posts they occupy in relation to the criteria, standards and evaluation methods.

The data obtained during the process of evaluation must be objective, real and provide feed-back-by for the results of the members of the organization. The evaluation should be carried out at an appropriate time and in an appropriate manner.

Evaluation of three distinct activities which involve human resources:

- evaluation of behaviour;
- evaluation of potential and capacity development;
- performance evaluation.

Design and implementation of a system for performance evaluation should be based on six essential questions:

- Why do we evaluate performance?
- Is the performance assessed?
- How do we evaluate?
- Who should assess?
- When should we evaluate performance?
- How will the results be communicated?

The need to evaluate the performance of subordinates comes from the desire to give evidence of high professionalism and justification of decisions regarding human resources. The information that is obtained in the evaluation of performance, may be ranked (purposes) according to the following schema(in order of the importance of goals):

- performance improvements in labour protection;
- payments based on merit;

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- assessment of the benefit of employees and discussing with them the results and expectations;
- promotion decisions;
- advising employees;
- motivation of employees;
- evaluation of potential employees;
- identification of training needs;
- the establishment of good relations between managers and employees;
- involvement and consultation of employees in setting career goals;
- efficient allocation of tasks;
- decisions of transfer;
- decisions of dismissal;
- justification of the long-term plans;
- assessment procedures for recruitment.

6. The qualities and features of the manager within the staff assesment

In addition to the knowledge and use of appropriate methods and in compliance with methodological and organisational premises arising from the nature of the assessment and evaluation of the nature and specifics of the tasks and missions unit, performing a rigorous assessment involves:

- different staff evaluation criteria depending on the nature of posts;
- assessment must be uniform;
- assessment must be probatory, that is, to be carried out for long periods of time during which the person evaluated would be confronted with the major problems specific to job descriptions;
- methods and techniques used should take into account the specifics of each post;
- the evaluation must be based solely on the lack of information;
- the result of evaluation shall be communicated to the person concerned, accompanied by the necessary recommendations.

To meet these requirements shall be deemed to be a manager should possess the following qualities and traits:

- communication – 75% of activity (transmitting and receiving messages);
- training – to know the duties of each employee;
- the life experience;
- skills and knowledge of subordinates;
- psycho-pedagogical knowledge;
- honesty;
- impartiality;
- the balance of praises;
- objectivity;
- responsibility.

7. Conclusion

As I pointed out at the beginning of this paper, the domain of human resources has seen substantial changes over the past 50 years under the influence of social factors and

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policies. At the moment one can say with certainty that the staff of military structures is the determining factor of the development and evolution of all these institutions.

The National Administration of Penitentiaries and subordinated units belong, together with the Ministry of National Defence to structures of public institutions, defense, public order and national security of the State. The special status of functionaries of the prison administration system is determined by the nature of service that involves duties and risks.

The staff of the penitentiary administration system is employed in functions on the basis of individual labour contract which shall be subject to labour legislation.

Looking at the special nature of the tasks performed by the prison administration staff, as well as the positioning of the institution in the other public bodies of the State, it is obvious that the task of recruitment, employment and evaluation of it is one particular altogether, managers or directors to grant substantial importance.

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**The 7th International Scientific Conference
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**CURRENT ISSUES
IN INFORMATION SYSTEM SECURITY MANAGEMENT**

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Abstract:

Determining the exact requirements for security for a given organization is essential for implementing the proper security measures. Such measures are designed to protect information systems from security breaches. The Internet and computer networking requires a new security measures and policies to reduce the threats and challenges inherent from these new technologies and software applications and network devices. The information security attacks of an organization's assets have high dollar impact, loss of customer confidence, and negative business reputation. An organization must analyze its assets and the threats these assets face from either inside attacks or outside attacks.

Key words: security measures, countermeasures, malicious attacks.

1. Overview

Security Management involves protecting a network from all kinds of unauthorized access. This includes many sub functions like collecting and reporting security related information, proactively detecting and preventing intrusions, etc.

The Internet and computer networking means that there is a need for new security measures and policies to reduce the threats and challenges inherent from these new technologies and software applications and network devices. Information, network equipments, transmission media, computer systems, and servers are subject to threats. “Yet the use of information and communication technologies has increased the incidents of computer abuse.”

Security measures and countermeasures are implanted to protect organizations from different security attacks. To guarantee the security requirements of a given organization, it is essential to be able to evaluate the current security demands of an organization as well as the measures taken to achieve such requirements. Security weaknesses cause a negative impact on organizations such as financial loss, reputations, and loss of customer confidence.

The intention of implementing security measures, controls, and policies is to guard information security objectives and information assets. Information security objectives, which are confidentiality, integrity, and availability, are the main concern in categorizing information security level.

2. Information Systems Security Assessment

Today, the evaluation of Information Systems (IS) security in accordance with business requirements is a vital component of any organizations business strategy. While there are a few information security assessment standards, methodologies and frameworks

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that talk about what areas of security must be considered, they do not contain specifics on HOW and WHY existing security measures should be assessed, nor do they recommend controls to safeguard them.

The reason for which you have to run a vulnerability assessment is to check that all systems have been patched for vulnerability, or obtain a list of systems that require a patch. This is a great way to verify that your patch management software actually did its job and rolled out the patches.

Vulnerability assessments (VA) can be broken down into three steps: information gathering/discovery, enumeration, and detection.

2.1. Information Gathering/Discovery

Information gathering is used to determine the breath of the assessment by gathering IP addresses, available port information, and possible contact information of the target.

Information gathering and discovery is the process an individual or group performs to ascertain the breath/scope of an assessment. The purpose of this step is to identify and determine the total number of systems and applications that will be assessed. Output of this step typically consists of host names, Internet Protocol (IP) addresses, available port information, and possibly target contact information.

2.2. Enumeration

Enumeration validates the underlying operating system and running applications of the target.

Enumeration is the process used to determine the target operating system—a process called OS fingerprinting—and the applications that reside on it. Upon determining the operating system, the next step is to substantiate the applications that reside on the host.

2.3. Detection

Detection determines what vulnerabilities exist.

Detection is the method used to determine whether a system or application is susceptible to attack (i.e., vulnerable). This step doesn't confirm that vulnerabilities exist; penetration tests do that. The detection process only reports the likelihood that vulnerabilities are present.

To detect vulnerabilities we'll need to utilize a vulnerability assessment tool such as Tenable Network Security's Nessus or eEye Digital Security's Retina. Neither tool is free, so we'll need to evaluate the cost or pursue open source alternatives prior to conducting this step.

Once we have procured a VA tool, we can continue the assessment, targeting the systems we've evaluated in steps 1 and 2 to determine whether they have any vulnerabilities. VA tools detect vulnerabilities by probing remote systems and comparing the systems' response to a set of good (expected) and bad (vulnerable) responses. If the VA tool receives what it considers a bad response it assumes the host is vulnerable.

2.4. Detecting Vulnerabilities via Security Technologies

Traditionally when we want to ascertain system- or application-level vulnerabilities, we need to install vulnerability assessment scanners throughout our enterprise.

These scanners are responsible for detecting network hosts (information gathering), discovering available applications (enumeration), and ascertaining vulnerabilities

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(detection). Vulnerability assessments scanners are typically network appliances running VA software. Figures 1 represent a typical organization's VA infrastructure.

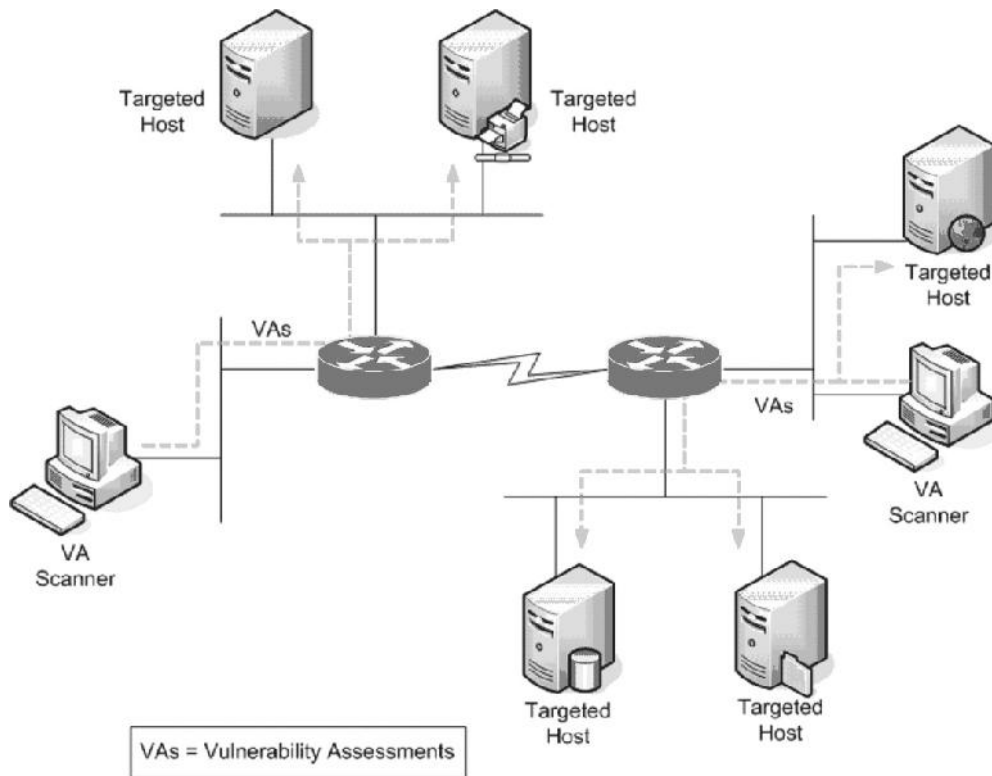


Fig.1 An enterprise VA deployment

3. Information Security Threat and Vulnerability

Vulnerability is the weakness of information and information systems which can lead to attacks, harm, modification, destruction, disclosure, interruption, and interception.

The relationship between information assets, threats, vulnerabilities and existing defenses is illustrated in Figure 2, which depicts an information asset that is only partially protected by the defenses of the media and systems handling it. Some threats will be defeated by these defenses, but other threats can take advantage of unprotected vulnerabilities and, in the worst case, compromise the information asset.

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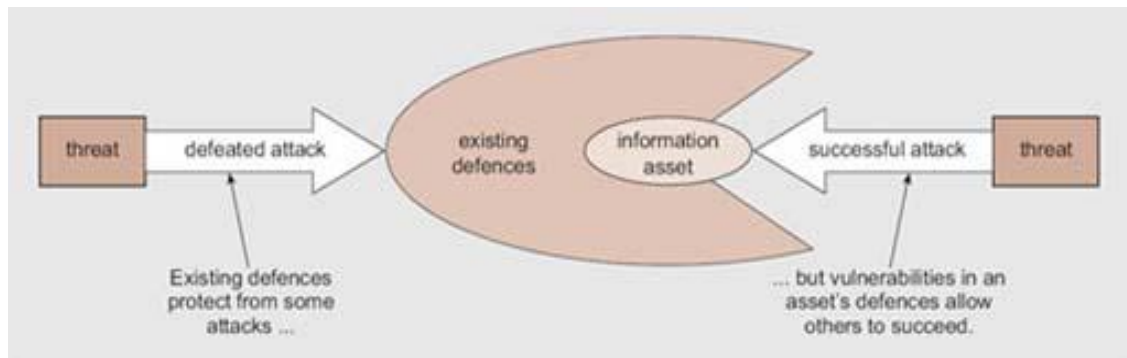


Fig.2 The relationship between information assets, threats, vulnerabilities and existing defenses

An effective vulnerability management framework will enable the organization to:

- establish an appropriate frequency for detecting vulnerabilities
- detect such vulnerabilities across the enterprise's public services and internal resources
- attribute an appropriate severity rating to the vulnerability
- link the detection capability to the enterprise change, configuration and release management processes
- appropriately address the issues according to their vulnerability
- confirm that remediation activities have lowered the exposure to, or removed in total, the initial vulnerability
- perform ongoing vulnerability management through a continuous improvement lifecycle

An effective threat management framework will enable the organization to:

- identify threats that may lead to a degradation in performance, or an attack, of an enterprise resource
- evaluate the risk that a threat presents and take appropriate action
- direct the appropriate information about threats to the affected parties so an informed decision can be made to the response
- ultimately have the capability to focus and utilize the security resources where most needed

With threat and vulnerability management systems running in harmony, the exposure of the network is greatly reduced thereby bringing security, reliability and availability to the enterprise network.

4.Current Information Security and Compliance Issues

4.1. Voice over IP (VoIP) / Voice over Broadband (VOB)

VoIP and VOB applications are becoming increasingly interesting to businesses everywhere, because of their combination of flexibility and cost-effectiveness. They also bring information security challenges.

A VoIP network is subject to all the same threats as wired network: “ ...viruses, spam, phishing, hacking attempts, intrusions, mismanaged identities, Denial of Service (DoS) attacks, lost and stolen data, voice injections, data sniffing, hijacked calls, toll fraud, eavesdropping, and on and on and on.” (VOIP Security Alliance, 1 December 2006). While there is little formal guidance on effective VoIP security, it is clear that risks to these

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networks need to be analyzed and assessed, and appropriate (largely technology-based) controls implemented.

4.2. Phishing

Phishing attacks use 'spoofed' e-mails and fraudulent websites that are designed to fool recipients into divulging personal financial data such as credit card numbers, account usernames and passwords, social security numbers, and so on. By hijacking the trusted brands of well-known banks, online retailers and credit card companies, phishers are able to convince up to 5% of recipients to respond to them. Phishers then use this data to commit fraud.

Clearly, phishing poses dangers for both consumers and for the organizations whose identities are hijacked; IT governance and risk management frameworks should all be addressing this issue as a matter of urgency.

The Anti-Phishing Working Group has a website that provides information that is relevant and helpful to those who recognize the need to take appropriate action now.

4.3. Wireless Networks

Some estimate that deploying wireless networks can reduce MIS costs by at least 30%. That type of saving, combined with all the user benefits of easy access to network resources, has driven the number of UK organizations deploying wireless networks up to 34% of the total, from just 2% in 2002. 53% of those organizations, however, admit that they have no security controls in place over their wireless networks. This is a failure of IT governance; it needs to be addressed as a matter of urgency by all organizations that have deployed wireless.

The emerging standard for Wireless Fidelity interoperability and security is 802.11i; the website of the Wi-Fi alliance is a useful resource for those who recognize the need to consider the risks of deploying this technology.

4.4. Blue Exploits

Bluetooth devices, particularly mobile phones, are at risk from two types of attack from nearby or passing devices, blue jacking and bluesnarfing. A blue jacking attack involves sending text messages to the mobile phones of any users who are within range, and it could be used both maliciously and for 'blue spam'. A bluesnarfing attack is potentially more serious, and involves the theft of all contact information stored in the phones. Not all phones are vulnerable to these sorts of attacks and as manufacturers respond to the discovery of these vulnerabilities, so there will be changes.

5. Conclusion

Information system security is essential to organizations that depend on information systems. This fact becomes more obvious when an organization's information is exposed to the risk of cyber attacks and the resulting damages. Managers need to know the extent of the damage that a cyber attack can cause and the possibility of occurrence, so they can determine what they need to do to prevent the attack by selecting appropriate safeguards or repairing damage.

CURRENT ISSUES IN INFORMATION SYSTEM SECURITY MANAGEMENT

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RISK MANAGEMENT IN MULTINATIONAL IT PROJECTS

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Abstract:

Cultural differences have become more perceivable at the same time as national borders have become less relevant and economic systems more dependent on each other. Current concepts about culture do not seem to help in understanding the differences and their effects in practice. Despite the previous efforts within the project management discipline, a large variety of concepts and the lack of practical solutions are leading to disregarding especially the innovation potential arising from multiculturalism.

Key words: risk, management, multinational, project, software, development.

1. Introduction

In today's ever changing business landscape, technology and innovation projects play a key role in creating competitive advantages for an organisation. However, many such projects are often hampered by under performance, cost overruns and lower than predicted revenue. This seems to indicate the lack of risk management in the way we manage projects. On the other hand, it is impossible to have any projects without risks. Thus, it is essential to have effective risk management rather than trying to eliminate risk out of projects.

2. What is risk management?

Cultural diversity can be, depending on the project, a source of high uncertainty, manifested in both positive and negative outcomes. Common project culture can also act as a helpful ingredient when managing the objectives of the project. The word risk has a long history and its meaning has been modified over time, causing debates about the correct terminology.

The management of negative impacts, or risks, has conventionally been stressed more intensively. Positive outcomes of uncertainty, or opportunities, and this type of thinking overall might not even be very suitable for traditional projects. When participants launch a project, they most likely have already estimated some benefits at least to be gained through the project. Some of the risks are also already known and proactive actions could have been taken, such as eliminating or minimising the impacts, transferring responsibility to another party, or actively accepting the consequences.

Uncertainty can be generated from external or internal sources. Uncertainty management is a continuous process. Both threats and opportunities could be managed simultaneously in the same process; only new risk identification techniques and response strategies are proposed to identify opportunities: exploit, share, enhance or ignore. The

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impact of the same event might be positive to one project participant and at the same time negative to another.

Risk management involves the following steps (Fig. 1):

- Identify and analyze.
- Plan how to recognize, handle, and recover.
- Try to avoid or prevent.
- Mitigate occurrences.
- Recover software process.
- Need communication and reflection.

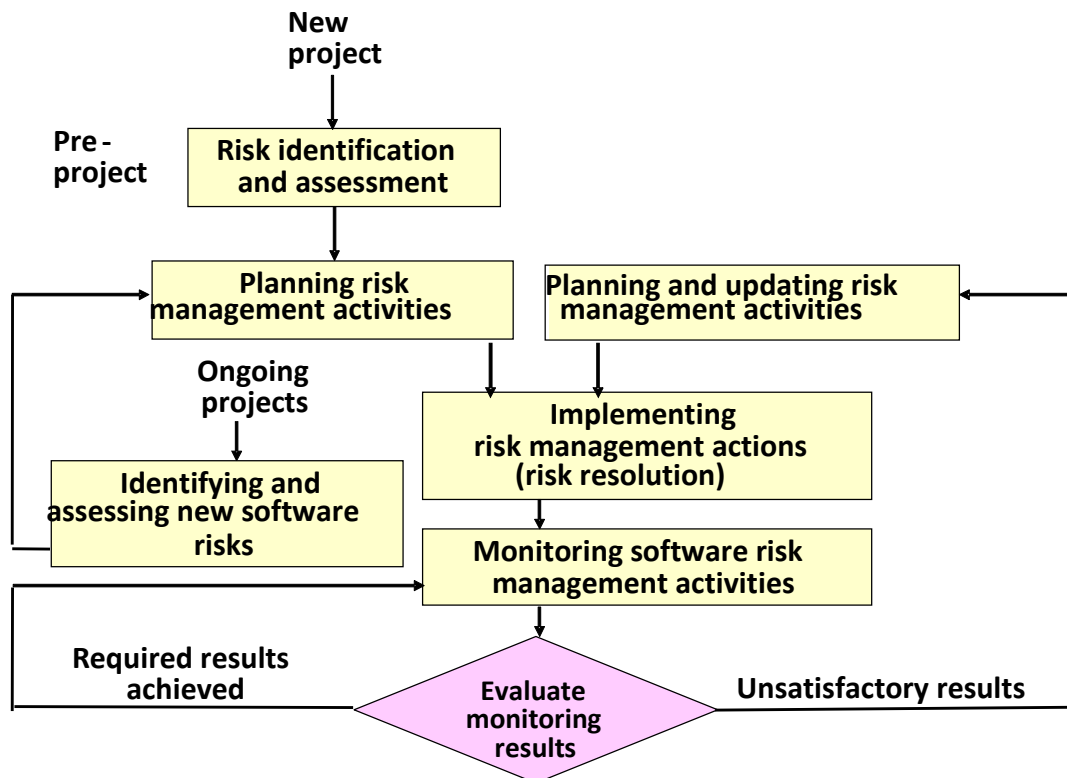


Fig. 1. The software risk management process

3. New criteria for effective collaboration

3.1 Some specific issues

When the knowledge base of an industry is both complex and expanding and the sources of expertise are widely dispersed, the locus of innovation will be found in multinational, rather than in individual firms.

In recent decades, there has been unprecedented growth in corporate partnering and reliance on various forms of external collaboration. The most common rationales offered for this upsurge in collaboration involve some combination of risk sharing, obtaining

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access to new markets and technologies, speeding products to market and pooling complementary skills.

Viewed broadly, technological change occurs in two forms. When advances build on existing know-how, established firms reap the bulk of the benefits. But when new discoveries create technological discontinuities, or radical breaks from previously dominant methods, incumbents can be robbed of many of their advantages.

Software development can be a high-value, but high risk undertaking. About 30% of software projects undertaken in the United States fail outright, and of the remainder, half finish with schedule and budget overruns that approximately double the original estimates (Standish Group, 1995). With the rise of outsourcing and off-shore development, many software development projects have acquired the additional risks that accrue to geographically distributed project teams – restrictive communication channels, differences of practice and policy, differences of language and culture, and time-zone challenges.

Many organizations now depend on collaborative work practices for their success. A collaborative work practice is a recurring process that can only be completed through the combined mental efforts of multiple people. Examples of collaborative work practices include mission critical tasks such as software requirements engineering, operational risk assessments, tender evaluations, and project proposal writing. While collaborative work practices can create significant value, collaboration can be a mixed blessing. Conflicts of purpose, unreliable information, poor communication, inadequate reasoning processes, and distractions can hamper a group's efficiency, limiting the value it can create. These difficulties become magnified when, as is often the case in the global economy, the contributors to collaborative work processes are separated by time and distance.

Technology, and in particular the development and deployment of new software systems for applications in government, business, industry, and entertainment, is one of the pillars of the globalizing economy. The software development process increasingly involves multiple teams, not only within a single organization, but across multiple organizations, and often across national, linguistic and cultural boundaries, motivated by both technical and business concerns. Technically, systems have become larger, more complex, and more interactive — especially over the internet and on the Web — and have a greater need for evolvability as a result of changes in the computer platform, the user community, and the application domain. Business issues involve not only cost-benefit tradeoffs and time-to-market concerns, but a need for high-quality technical and business services and for specialized application domain and development process knowledge.

All this drives the need to include sophisticated knowledge management techniques into collaborative software development. Knowledge management entails elicitation and specification, efficient and effective organization and access, knowledge generation, and abstraction, translation, and views. It also importantly requires knowledge protection, intersecting with intellectual property, privacy, and security concerns.

3.2 Collaborative knowledge

The handling and management of collaborative knowledge addresses three dimensions: the source of knowledge, the nature of the knowledge, and the use, application, and impact of the knowledge, particularly its effect on collaboration. In dealing with collaboration, it is useful to add another category to the standard distinction between explicit, implicit and tacit knowledge, namely whether the knowledge in question exists within individual partners or their people (for example, corporate practices), is common to all partners (scientific knowledge), is inherent in the collaboration (project

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history), is publically available, or requires collaboration and integration to instantiate; a parallel measure deals with the use of the information — in individual organizations, or in the collaboration itself.

Table 1 presents an overview of the collaborative knowledge spectrum — sources and degree of awareness or concreteness.

	Level of awareness/concreteness				
		Partner			Shared
Source	Managed	Explicit	Implicit	Tacit	
Business & Technical Documents	Knowledge bases	Artifact libraries Policies History	Management goals/objectives	Document style preferences	Contracts Project history & configuration
Safety/Risk Information	RMMM plan	Safety procedures Risk assessment Triggers	Staff expertise	“Sixth-sense” awareness	Collaborative risks
Support services		Procedures Service contracts	Day-to-day conduct of service		
Tools and environment		Tools languages, notations, glossaries	Culture Idioms	Work practices	Shared infrastructure
Corporate environment		IT support Business network	Vendor/supplier decisions		History of collaboration
Expert knowledge		Publications White papers Memoranda Plans, etc.	Day-to-day processes Evaluation mechanisms Teaching	Social interaction Judgment	Professional contacts Modes of interaction
Legal knowledge		Documents	Interview & research strategies		International commercial agreements
External environment	External knowledge bases	News, statutes, regulations	Trends		(Inherently shared)
Collaborative		History Metadata	Communication Support	Trust	Protocols for interaction
Metrics & Inputs		Results & Trends	Relationships	Attitudes	Past & current projects
Social networking		Records of interactions	Social relationships		Implicit/tacit protocols

Table 1. The collaborative knowledge spectrum

4. Means for dealing with change

Flexible interfaces can provide support for business and management processes , including risk management , traceability and artifact flow , security , and knowledge management . They provide a natural place to hook:

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- Policies for accessibility, transmission, and inter-component security.
- Policies and procedures for information hiding (whether for abstraction, access control, security, protection of intellectual property and privacy, or for more efficient and effective use in risk management), handling of revealed changes, or other management contingency policies.
- Translation of artifacts (language-to-language, notation-to-notation, perhaps glossary-to-glossary [motivated by standards and regulatory compliance across jurisdictions, as well as important national/regional variations in idiom]) and generation of abstract views.
- Selective propagation plus context-sensitive versioning of change information, artifacts, and possibly policies, depending on information about the context and status of the adjoining components and the interface itself.
- Generation of some types of summary artifacts, including schedule tracking.

They also provide a natural place for aspects of knowledge management, where various uses of information hiding also apply. Most of the above policies and actions have security and knowledge management implications.

In addition:

- Data mining of components—can use both pattern discovery in the component to find information, and filtering and abstraction, both to protect information and to hide obfuscating details—both during development and upon deployment/execution and maintenance/evolution.
- History and change information, component state, coherence of artifact configurations across components.
- Interesting question for discussion: ordering of filter-abstract-discover. Which leads to most patterns being discovered? Is there a chance of covert leakage?

Such interface objects will have references to the public state of the components it connects — not just object state, but process, project, product and business artifacts states.

Change is a key risk factor. The need to effectively accommodate it — whether a result of problems (corrective or preventive changes) or driven by changing needs and environments (adaptive or perfective changes) — has long been a major software engineering concern and is further exacerbated in large scale collaborative projects.

Table 2 outlines the change toolbox, a set of approaches that can be combined to tame and localize change. They are classified into process - and product - centric means.

Flexible high-level component interfaces allow for proper change localization, encapsulation and absorption of effects at component and partner boundaries.

Means for dealing with change		Project Characteristics	Critical property when dealing with change
Process-centric Means	Agility	Short iterations, team collaboration, customer involvement; change tolerance and flexibility, easier evolvability	High evolvability; relatively small, hierarchical or idiomatic project; tight scheduling constraints
	Traceability (artifact dependency)	Easy to navigate traceability matrix; well-structured artifacts required to minimize dependencies; “immediate-automated”	Large-scale projects with clearly identified requirements; known requirements paired with need for high

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	management)	identification of change impact; proactive monitoring of churn; tracking project progress	innovation; large number of diverse dependencies or complex dependence web
	Artifact flow management	Clearly identifies artifact types, partner responsibilities, and communication; basis for controlled artifact state and transformations	Large and complex project with diverse set of artifacts; large number of active stakeholders; complex flow of information
	Organizational Collaboration	Open organizational collaboration, open channels of information exchange, cooperative risk management, ease of change propagation via uniform and interconnected process views	Bidirectional component interaction; end-to-end product constraints or security, integrity, reliability requirements; high demand for information processing capacity; cross-partner domain expert collaboration
	Cooperative Risk Management	Clear roles and responsibilities of stakeholders when dealing with change; change taxonomy; hierarchical risk management plans	Large and complex project with diverse set of artifacts; large number of active stakeholders; complex flow of information; high level of innovation
	Knowledge Management	Identify, structure, and specialize implicit knowledge and relationships; identify implicit patterns (data mining); handle need-to-know, security and intellectual property	Domain uses implicit knowledge and/or subjective judgment; patterns of use matter; substantial intellectual property
	Domain Expert Collaboration	Identify critical cross-component domain issues, inconsistencies, and tradeoffs	Heavy use of domain knowledge; domain models or vocabulary variable or unstable
Product-centric Means	Software Architecture	Support for “plug-and-play” modular replacement, idioms to handle complexity and problems, easier change analysis and propagation via uniform structure; approach for cross-cutting concerns (e.g., aspects)	Hierarchical application; structural complexity; evolvability of behavior; service-oriented architecture with families of services/clients; inter-component cross-cuts
	Component Interfaces	Restricted propagation of change impact across component boundaries, reduced complexity of dependence web via information hiding; design for abstractability of dependence information	Partners responsible for different subsystems; complex or heavy information flow across boundaries; intellectual property or security concerns
	Interface Patterns	Flexibility of logical interfaces with fixed physical interfaces; access to legacy or COTS (commercial off-the-shelf)/GOTS (government off-the-shelf) services/databases; better information hiding at component boundaries; improved agility within components; support for refactoring within components	Collaborative development; negotiable boundaries between components; agile component development
	Adaptive Information	Propagation of content, system and bookkeeping information across component boundaries; safe extensibility of information semantics and component interfaces; improved agility within components	High component coupling; component-crossing extra-functional constraints (performance, timing, etc.); negotiable information flow

Table 2. Means for dealing with change (“Change Toolbox”)

5. Conclusion

Software development has rapidly moved toward collaborative development models where multiple teams from different organizations and possibly companies, distributed across the globe, work together to define, develop, deploy and often collectively maintain complex software systems. To effectively accommodate such change product and process means, including flexible architectures and interfaces, iterative development, and cooperative, hierarchical risk management are required.

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A key differentiator in collaborative software development is effective cooperative knowledge management — the process of acquisition, creation, and exchange of knowledge between all participants in the development efforts. This process is facilitated by the establishment of open culture and requires infrastructure services that support it.

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APPROACHES TO MANAGING THE LIFE CYCLE COST

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Abstract

Top managers are deeply involved in the strategic decision making process that affects the future of their organization on long term. At a particular time they have to decide what type of equipment they should commission into service so as to keep up with the progress of the society, to make profit for their company or to add more value to their current operations. Since they no longer consider their decisions on the acquisition cost as being the main cost driver, they have become more and more interested in pointing out both the total cost of ownership and the main challenges they will have to face with so as to manage the total cost.

Key words: decision, value, system, ownership, challenge, cost driver

1. Introduction

Nowadays top managers have “*le savoir faire*” to make decisions based on needs assessments, costs forecasts, and risk management related to the commissioning of a new system into service. Therefore lots of studies have been conducted with the main purpose to identify methods and tools to manage the entire process “from cradle to grave” in terms of performance, cost and time.

2. Phases in the life cycle

Generally speaking, the life cycle begins with the concept, continues with establishing the operational requirements of the future system, the design stage and the final design, production, trials and homologation, its use within and post warranty period, upgrades and modernizations, and ends with its decommissioning from service and disposal. All these stages are integrated into a process that a manager should be able to coordinate over the time, monitor and measure its performance, and control its costs at all stages. Moreover, the cost of replacing the future equipment should be taken into account at the earliest stage as well as the cost associated with the decommissioning and the disposal in order not to be overlooked later on. This will make the life cycle cost management more visible and effective.

The concept “value for money” gives them the opportunity to acquire cutting - edge systems that bring added value to its operational objectives and support them to face up to any future challenge.

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For a simplified approach of the process, the stages aforementioned can be re-grouped into phases more comprehensive which give a strategic view on the process, namely:

2.1 Acquisition phase

At the beginning of this phase the need for a new capability generates this process. This capability shall be seen as a sum of attributes to reach a scope, not a sum of means, because means are part of the capability. The reasoning behind it is that whereas the means are changing due to the evolution of technology, the capability could remain with the same attributes. A project team is assigned to develop the attributes into a concept, into operational requirements and technical performance criteria afterwards, and to estimate the milestones and the rough order of magnitude on the expenditures relating to the total cost of ownership. The final design gives the technical features needed to make that capability effective, to make it efficient means that there is more than one system likely to fill it.

Other particular facets are related to other kind of means needed to be taken into account to ensure the full success of the acquisition phase such as training, support, etc.

The systems needed are selected based on such criteria as their technical performance, acquisition costs/life cycle costs, their compliance with the environment standards and the work safety standards, and the costs with disposal, etc.

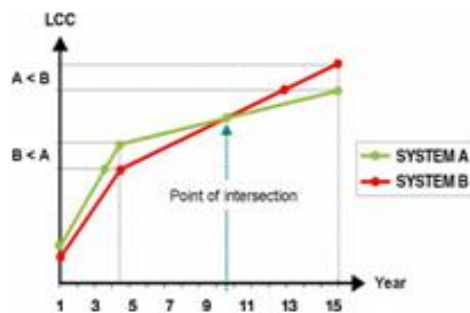


Fig. 1 LCC based selection of the system

2.2 In –Service phase

The main challenges are generated by the integration of the system with others being part of the same capability, by the need to dispose some sub-subsystems of before the lifespan of the system and their integration with the remaining sub- systems in the event that a new profile of the capability is required.

Logistics support shall be in place to ensure the performance of the system at any time.

2.3 Disposal

At the end of life cycle, the system is decommissioned and disposed of. This implies compliance with the environment standards in force as well as the ability to choose the right contractor to properly carry out this difficult task. Studies reflecting the impact of disposal on environment should be in place at that time as well as operating procedures spelling out how to mitigate the risks against the environment pollution.

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As a result of disposal it may be possible to have some revenue in return for the scrap that will lead to significant economy of scale as well as expenditures to restore the initial environment conditions.

3 Life cycle cost analysis

3.1 Aims and objectives

There is so much uncertainty as to what type of system may be appropriate, and what concept might be required in practice. Therefore it is advisable to approach more than one solution when decided to buy a new system. The budget is the key factor that will later on put its footprint on the level of technology implemented and on the amount of research that can be supported to develop new technology.

Various methodologies can be applied to estimate future costs for planning purposes. The methods selected depend on the level of detail required, the availability of data, and time constraints. To identify the most adequate method, the analyst must have a comprehensive approach of the models and techniques and their applicability, and a clear and complete understanding of the operational requirements of the future system.

The features taking into account are related and not limited to the life cycle phases (concept, development, production, operation, support and salvage) and the information received from internal or external organizations (suppliers)

3.2 Program content, cost limitations, assumptions

The program starts by identifying the options available to meet the need, analyze these options and plan the activities for the next phases for the implementation of the most effective solution based on estimated costs in such areas as personnel, facilities, support equipment, spare parts, publications, training and training equipment, technical data, etc

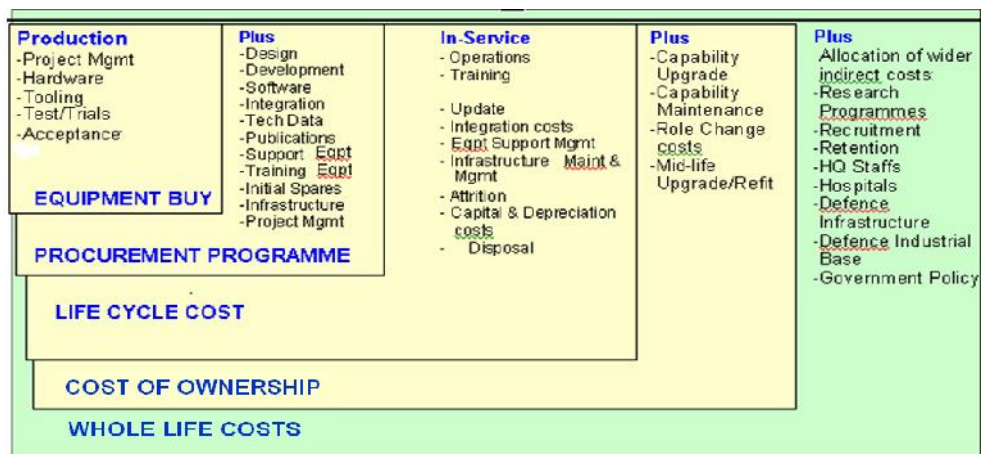


Fig. 2 Life Cycle Cost Boundary

At the earliest stage of the program, the main issues are the rough order of magnitude of projected life cycle costs, the technical solution within the concept, the risks emerging in any phase of the program, milestones, socio-economic factors, inflation rate/exchange rate, models for estimating costs. The program is to be tailored taking into account the development of the process through planning.

Throughout this program, LCC manager watches over the system's effectiveness by comparing the previously estimated figures of LCC with the real ones incurred to identify

APPROACHES TO MANAGING THE LIFE CYCLE COST

trends and possible areas where there are problems, and to take corrective actions as required.

At the end of the life cycle, LCC is used to weigh up options to modify, rebuild or replace the system. In the end, the most cost-effective and operationally effective alternative is chosen.

3.3 Generic cost breakdown structure (GCBS)

GCBS is a tool which spells out the main cost drivers through the life cycle of the system and it is relevant to any product or project. GCBS shall be easy to develop, comprehensive, comparable, unambiguous, and flexible.

GCBS can be divided into:

i) Acquisition costs for, *inter alia*, procurement or development, initial logistic support, preparation, testing and acceptance, installation of the system, project cost, training;

ii) Operation costs :

- Operation costs for operating personnel, operating training, operating documentation, operational infrastructure and facilities, consumables, etc;

- Support costs for maintenance personnel, training and facilities, spare parts stocks, test & support costs, maintenance documentation, computer resources, infrastructure, upgrading and modification, etc;

iii) Disposal costs

As a cost element is always associated to a “resource” used by an “activity” applied to a “product”, at the earliest stage of creating a GCBS it is recommended to identify all possible resources, activities and products. This is the purpose of the three following primary structures or lists:

- The product tree defines all core product elements over the lifespan of a system.
- The activity list defines all possible activities performed over the lifespan of a system.
- The resource list defines all possible resources used by activities.

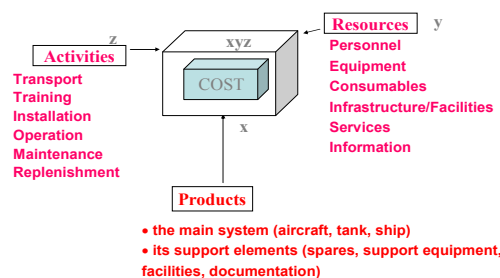


Fig. 3 Cost Breakdown Structure

GCBS is the basic framework on which a CBS is built taking into account the specifics of the project (develop a new system, purchase a system off the shelf, etc.) and the type of the system (naval weapon system, light armored vehicle, aircraft, etc).

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3.4 Establish the data. populate the life cycle cost framework

3.4.1 Project initiation phase

The initiation phase identifies a gap in capability. This gap is detailed in some necessary documents and the planning will be initiated after its endorsement.

3.4.2 Project planning and development phase

This phase starts by identifying the options available to meet the need, analyze these options and plan the activities for the next phases. The comparison of the identified options will help to find one or two or three possible solutions that satisfy the need.

Life Cycle Costing is the method used to evaluate costs, to populate and develop the costs for each option. This may be the first estimate of Life Cycle Cost (LCC). The first estimate of LCC is based upon a deep understanding of the operational requirements and outlines a possible solution. This estimate is an indicator on the rough order of magnitude of total project cost and milestones.

At the turn of this initial estimation, a Program Planning Proposal (PPP) is conducted. PPP identifies resources required in broad terms and is similar to a pre-feasibility study.

A Project Development Study is carried out after PPP approval. This is a more detailed study and analyses the various options of meeting the need in more areas such as: capability, life cycle costs, personnel, technology and overall impact on business. Afterwards the second estimate of LCC is elaborated.

The second estimate of LCC is based on the general description of the end item sought, on production and construction experience, on the market conditions or on system concept or preliminary design and analysis of its cost and timelines. This second estimate of LCC might be adequate for taking the appropriate investment decision. This estimation is used to draw up the Program Development Proposal (PDP). The project definition phase begins after PDP approval.

3.4.3 Project definition phase

This phase implies a more detailed analysis of the most appropriate option, or maybe additional options are required. More options are weighed up to evaluate to what extent the operational requirements are met with regard to cost, milestones and performance. As this time the implementation phase is planned in detail. At the end of this analysis, the third estimation of LCC is prepared. It is based upon quality data (related to cost, timing and production or construction). This estimation should provide accurate financial and technical data related to fulfilling the operational requirements to get effective project approval. Additionally contingencies expenditures should be delineated to ensure the full transparency of costs ceiling throughout the implementation phase. The third evaluation of LCC is used to draw up the Program Change Proposal (PCP). The project implementation phase begins after PCP approval and it is the final phase before the acquisition of the system.

3.5 Conduct the cost analysis (CCA)

The purpose of conducting costs analyze is to evaluate and cut down the initial and through life cost. A number of LCC-studies can be performed in the bidding phase of the new equipment, namely:

- i) Estimation of the total costs for new equipment;

APPROACHES TO MANAGING THE LIFE CYCLE COST

ii) Comparison of Life Cycle Costs for different options to fulfill the operational requirements. Tenders are to be compared in the bidding phase. It is also possible that one bidder offers a number of options to fulfill the requirements. Bidders and tenders can be compared against each other on cost issues, when a common cost tree is used.

It is also possible to use LCC-analyses to calculate, evaluate and compare several support alternatives for the new equipment, i.e. the comparison of the concept of five levels of maintenance with the three levels'.

iii) Analysis the important factors of influence / cost-drivers to cut down the total life cycle costs.

iv) Sensitivity analyzes on most important factors of influence or uncertain cost elements to determine their impact on the total life cycle cost. The issue is how to deal with uncertainty in cost.

The Software Support Cost does not depend significantly on the size of the software, and the size of the user, but on the operational environment, the age and the contractual conditions.

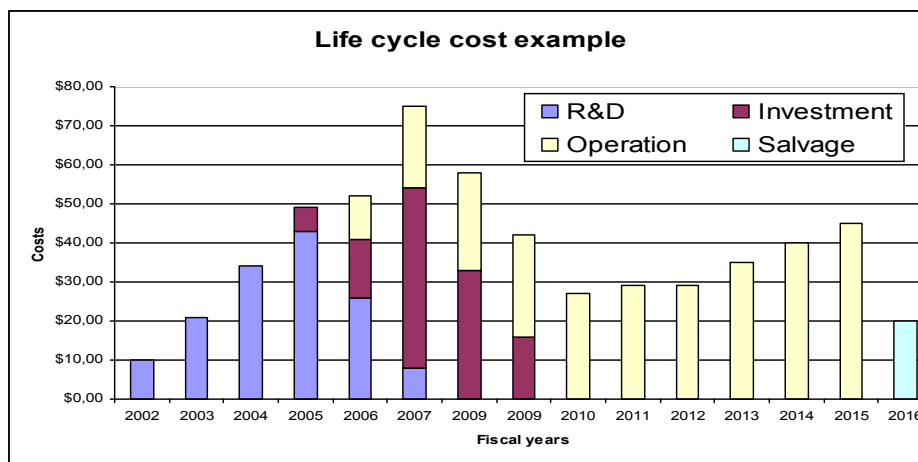


Fig. 4 Life cycle cost

4 Conclusions - Decisions

At the end of cost analyze the best solution has been identified and there is a clear picture on cost profile of when costs are expected to occur, based on work breakdown structure and the expected costs thereto.

Life cycle cost allows to the decisions makers to evaluate the future expenditures; to make comparison between alternative solutions; to manage the existing budgets; to make options for procurement; to evaluate the opportunities to cut down costs; to asses the affordability.

LCC is not an exact science, but an insight in the significant cost drivers, and an insight in the magnitude of the costs.

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SENSITIVE INFORMATIONS MANAGEMENT

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General Staff

Abstract:

Since the oldies times it has been known, information means the power. From that we can find out that it is most important to keep sensitive information inside the organization and, on the other hand trying to reach more information from the opposite organizations. This is an informal rule that can involve a very formal issue, information security and sensitive information management. The purpose of this paper is to show to the reader some principles, policies and rules of information security in order to reach a good management of sensitive information. Loss, misuse, modification or unauthorized access to sensitive information can negatively affect the privacy or welfare of an individual, trade secrets of a business or even the security, internal and foreign affairs of a nation depending on the level of sensitivity and nature of the information.

Key words: sensitive information, classifying information, management, policy, responsibilities, protection, risks, threats, vulnerabilities.

1. Introduction

Confidential information which contain high value, and if compromised could result in serious consequences, is considered to be sensitive information. Unauthorized disclosure, alteration, loss, or destruction of sensitive information will cause perceivable damage. Examples include governmental information, information contained in client, case or patient files, information pertaining to security of critical infrastructures, information enabling law enforcement and emergency services.

The security category of a document, file, records series, or system is determined by the most sensitive information it contains. The significance of classifying information due to its sensitivity defines appropriate security controls and reduces the risk of unauthorized disclosure, use, loss or destruction of information.

Examples of classifying information from different countries or organizations:

ROMANIA	NATO	EU
Nesecret	Unclassified	Unclassified
Secret de Serviciu	Restricted	Restricted/Restreint
Secret	Confidential	Confidential/Confidentiel
Strict Secret	Secret	Secret/Secret
Strict Secret de Importanta Deosebita	Cosmic Top Secret	Top secret/ Tres Secret

SENSITIVE INFORMATIONS MANAGEMENT

All personnel who handle or manage sensitive information have to understand their responsibilities and obligations in order to keep sensitive information in original shape inside the organization according whit security policy and law.

2. Areas of Concern

The primary area of concern is that sensitive information may not be adequately protected against security and privacy risks.

There are many factors which can amplify these concerns:

- Personnel may not identify sensitive information holdings and resources;
- Sensitive information may not be handled according to the information classification process resulting in unauthorized disclosure, loss or destruction of information;
- Physical materials (blank forms, tokens, certificates, security badges, etc.) which are used for sensitive information may not be controlled or stored in secure facilities;
- Weak processes for managing sensitive information (removable media devices, paper records, incomplete shredding, documents left unsecured) could result in security breaches;
- Personnel are not adequately trained in special handling requirements;
- Requirements for personnel to complete special confidentiality agreements may not be followed or enforced;
- Strong encryption technology may not be used resulting in information being inadequately protected while in storage or during transmission;
- Logical security controls may not be in place to ensure the protection of sensitive information (network segregation, dedicated servers);
- Contracts with third parties may not specify special security requirements for sensitive information;
- In the absence of regular security reviews or audits it will be difficult to determine if the controls intended to protect sensitive information are effective and functioning properly;
- Poor physical security controls during transportation, storage or destruction of media and records may create security exposures.

3. Intended Outcomes

The policies associated with sensitive information are intended to ensure that sensitive information is identified and protected adequate with its value and sensitivity, to encourage the development and implementation of controls for a good management of sensitive information. Also, most important things are to ensure that personnel are responsive of their responsibilities for protecting sensitive information in order to reduce the probability of inappropriate disclosure, alteration or destruction of sensitive information.

3.1. Responsibilities of all personnel

3.1.1. Things to do:

- Identify information that should be defined as sensitive information;

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- Implement approved encryption schemes for sensitive information;
- Keep sensitive information within specially designated physical security zones;
- Be aware of and understand security policy and practices for sensitive information.

3.1.2. Things to avoid:

- Including sensitive information in e-mail, faxes and other forms of electronic messaging;
- Unauthorized storage or transportation of sensitive information away from secure facilities;
- Using sensitive information for testing or training purposes.

3.1.3. Things to pay attention to:

- Special security and privacy controls designed to protect sensitive information.

3.2. Responsibilities of Management

3.2.1. Things to do:

- Ensure that sensitive information is defined and protected;
- ensure that security policy will be, implemented appropriate to the value and sensitivity of the information;
- Ensure personnel responsible for managing, accessing and using sensitive information receive suitable training and regular reminders of special security requirements;
- When a security or privacy breach has occurred, review and revise related policies and processes as needed.

3.2.2. Things to pay attention to:

- Special handling requirements for Cabinet documents;
- Reports from audits or security reviews which identify risks to sensitive information;
- Recommendations from personnel for securing and handling sensitive information.

3.2.3. Things to establish procedures for:

- Conducting periodic reviews or audits to assess the security of sensitive information;
- Reviewing system reports to identify inappropriate access or usage;
- A pre-release approval process for presentations, or articles which may contain sensitive information.

3.2.4 Things to monitor:

- Initiatives to remediate security or privacy concern identified in assessments, audits and reviews.

4. Organizing Information Security

The protection of information assets requires a multi-disciplinary approach that is supported by the information security organization. A management structure needed to coordinate information security activities including required information security activities,

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who coordinates them and what agreements are required. This coordination applies to internal organizations and to external parties accessing or managing the organization's information assets.

The information security organization requires the support of a network of contacts in the information security community to bring out advice, trends and to deal with other external factors.

4.1. Management support

It is strongly recommended to establish a security infrastructure necessary to protect sensitive information assets by establishing an information security architecture for standard security controls and defining organizational roles and responsibilities for information security. This concern requires elaboration of the Information Security Policies, developing and reviewing them when is necessary, monitoring and measuring the implementation of them and developing and delivering a program to maintain information security awareness.

4.2. Specialist support

Information security specialists are responsible for:

- Interpreting the Information Security Policies;
- Evaluating information security implications of new organizational initiatives;
- Performing information system security risk analysis activities;
- Performing information security assessments and reviews;
- Evaluating new threats and vulnerabilities;
- Investigating major information security incidents;
- Advising on the information security requirements for documented agreements;
- Analyzing and providing advice on emerging information security standards;
- Providing information security advice for business areas.

4.3. Confidentiality agreements

Information Owners must ensure employees are informed of their obligation to maintain the confidentiality of information and, ensure individuals other than employees accept and sign an agreement to maintain the confidentiality of information.

Confidentiality requirements must be reviewed and updated periodically.

5. Physical and Environmental Security

This chapter identifies requirements for the protection from environmental and man-made threats to personnel and property in information processing facilities. One of the principles used for protection is the use of security zones to place computers, people and information in secure areas. Safety measures for equipment installations are also required.

Requirements for the installation, operation, protection and maintenance of computer equipment are identified to preserve the confidentiality, integrity and availability of government information and information systems.

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5.1. Security perimeter

Information owners must establish the appropriate type and number of restricted zones to achieve the necessary conditions for personnel safety, and for the protection of, sensitive or valuable information and assets.

Appropriate security controls must be applied to reduce the level of identified risks and include a structure that prevents external visual and audio observations and complies with all local building codes for structural stability (external walls, internal walls, ceilings and doors). Walls surrounding the facility must be extended from true floor to true ceiling, to prevent unauthorized entry and minimize environmental contaminations such as that caused by fires and floods. Appropriate control mechanisms (e.g., locks, alarms and bars on windows and doors) must be applied to prevent unauthorized access;

All information processing facilities must be equipped with physical intrusion alarm systems that automatically alert monitoring staff to take immediate action. Alarm systems must be continuously monitored;

Access to restricted zones must be controlled, authorized and monitored as required by the applicable zone.

5.2. Secure area requirements for personnel

Information owners must identify and document requirements that apply to personnel authorized to work in secure areas. They are responsible for informing personnel working within a secure area that activities within a secure area are confidential and must not be discussed in a non-secure area, or with persons who do not have a need-to-know and no type of photographic devices, video, audio or other recording equipment is to be brought into unless authorized.

5.3. Other secure area requirements

Information owners must identify and document requirements for other individuals who may need access to a secure area. They are responsible for ensuring that maintenance staff, cleaners and others who may require access on an ongoing basis to the secure area must be screened and their names placed on access lists. Visitors must obtain approval for visits and personnel must escort visitors when they are within the secure area.

Unoccupied secure areas must be physically locked and periodically checked. Physical intrusion alarms must be installed to automatically alert monitoring staff of a breach.

6. Need-To-Know Principle

Need-To-Know is one of the most fundamental security principles.

Knowledge, possession of, or access to sensitive information shall not be afforded to any individual exclusively by virtue of the individual's office, position, or security clearance.

The responsibility to determine "need-to-know" is the responsibility of the individual who possesses the sensitive information.

One reason to be constantly aware of "need-to-know" is that some trusted insiders have gone badly. When this happens, careful observation of "need-to-know" helps to limit the damage. When someone looks for information that they don't need-to-know, it may just be simple curiosity, but that is not the only possibility.

Need to know can be really hard. It goes against our natural instincts and everything we have been taught about getting along in groups. Breakdowns in applying the

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need-to-know principle don't usually stem from deliberate misbehavior. Instead, they arise from people trying to be helpful and cooperative, things we are educated to do from early childhood.

Need-to-know sounds so simple. The need-to-know principle says that having the clearance for information is only half of the issue. The other half is having the need-to-know.

Individuals with authorized access to classified information are required to limit access to that information only to individuals whose clearance and need-to-know has been verified.

The need-to-know principle dictates that an authorized holder of information, only share the information when two conditions are met.

These are:

- the requester has the appropriate clearance and access.
- the requester needs to know the information in order to perform his or her job functions.

When both conditions are met, the information can be provided.

References:

- [1] Government Decision No. 353/2002 - Norms on the Protection of NATO Classified Information in Romania;
- [2] Government Decision No. 585/2002 - The National Standards on the Protection of Classified Information in Romania;
- [3] Law No. 182/2002 On Protection of Classified Information;
- [4] Government Decision No.781/2002 On the Protection of Restricted Information;
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**OVERVIEW ON THE DEFENCE PLANNING PROCESS, ON
THE MILITARY BUDGETS AND ON THE DEFENCE
EXPENDITURES DATA OF DIFERRENT STATES**

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Abstract:

The present study begin from a simple analysis of the defence planning processes, the planned budgets and military expenses of the states and intends to identify in those information indicators determining the military posture of states.

Key words: defence planning, budgets, expenses, comparison, indicator

1.Introduction

The defense planning process along with the budgeting and the military expenses could play an important role in determining the military posture of states.

In the present paper we will extract some sample data from the information provided by states to different organizations, put it in a systematic format and try to identify some indicators connected with those information.

2.International Transparency Framework

In consolidating the international security by confidence building measures the transparency over the military expenses set by the UN Standardized Instrument for Reporting Military Expenditures was initiated by the General Assembly Resolution A/RES/35/142B-1980 [1] with the original goal to facilitate reduction of the military budgets and led to a comprehensive database.

The Forum for Security Cooperation of the OSCE developed its own tools to enhance the level of mutual transparency over the defense planning process, military budgets and expenses. In the second chapter Vienna Document on Confidence- and Security-Building Measures establishes that *“The participating States will exchange annually information to provide transparency about each OSCE participating State’s intentions in the medium to long term as regards size, structure, training and equipment of its armed forces, as well as defence policy, doctrines and budgets related thereto, based on their national practice and providing the background for a dialogue among the participating States, including the date on which the military budget for the forthcoming fiscal year was approved by the competent national authorities and the identification of those authorities. The information will be provided to all other participating States not later than three months after the military budget, referred to in paragraph has been approved by the competent national authorities.”* [2]

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Information on the defense planning processes is also exchanged among the OSCE countries according to the provisions of the Questionnaire on the implementation of the provisions of the Code of Conduct on Politico-Military Aspects of Security (*“Description of the national planning- and decision-making process - including the role of the Parliament and Ministries - for the determination/approval of (a) the military posture; (b) defence expenditures”* [3]).

3. Template for Data Extraction

The data that will be presented is extracted from national data exchanges publicly available on the UN and OSCE web sites and it is pretty accurate. As the work is not intended to point to a specific state situation in the following analysis steps we will avoid mentioning any country name so we rather refer to numbered case studies. For the same purpose we will try to focus evolutions rather than absolute figures directly extracted from the notified budgets or expenses.

As it was mentioned in the introductory part the work will try to be a first step towards a contribution in identifying indicators that could be used as measures to determine the posture of different military systems.

To achieve the above mentioned goals we will proceed to filling the following format:

- *country description* (location, alliance, dimension);
- *overview on the defense planning process* (basic documents, decisional bodies, decisional flow);
- *military budget and expenses evolution* over a specific period (overall budget and expenses, specific budgeting and expenses).

We have chosen this approach as we expected different results for different situations (big countries with important military potential, developed countries located in the central part of Europe, countries located at the borders of NATO, non-NATO countries).

For each case study we proceed to the following:

- comparison between the overall budget and expenses for the envisaged period of time;
- comparison between the specific budgets and expenses for personnel, operation & maintenance and procurement;
- successive comparison between the overall budget and the specific budgets for personnel, operation & maintenance and procurement;
- successive comparison between the overall expenses and the specific expenses for personnel, operation & maintenance and procurement.

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4. Case studies

4.1 Case study 1

For case study 1 we have chosen an example of a big country with an important military potential. The country is not part of NATO but participates to different other security cooperation frameworks.

The actual democratic control over the armed forces has recent origins. One can accept the proper functioning of a democratic system in the country but still we face an important level of centralized control and an increased level of corruption.

The data for this study covers the 2007 – 2010 period.

For this case study the proposed analysis structure led to the following:

1. Comparison between the overall budget and expenses for the envisaged period of time

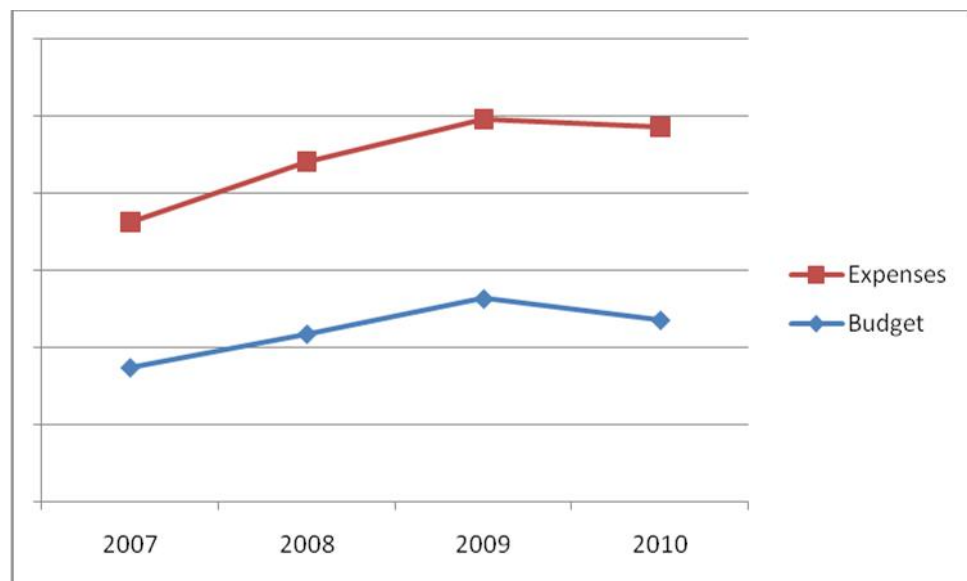


Chart 1

OVERVIEW ON THE DEFENCE PLANNING PROCESS, ON THE MILITARY BUDGETS AND ON THE DEFENCE EXPENDITURES DATA OF DIFERENT STATES

2. Comparison between the specific budgets and expenses for personnel, operation & maintenance and procurement

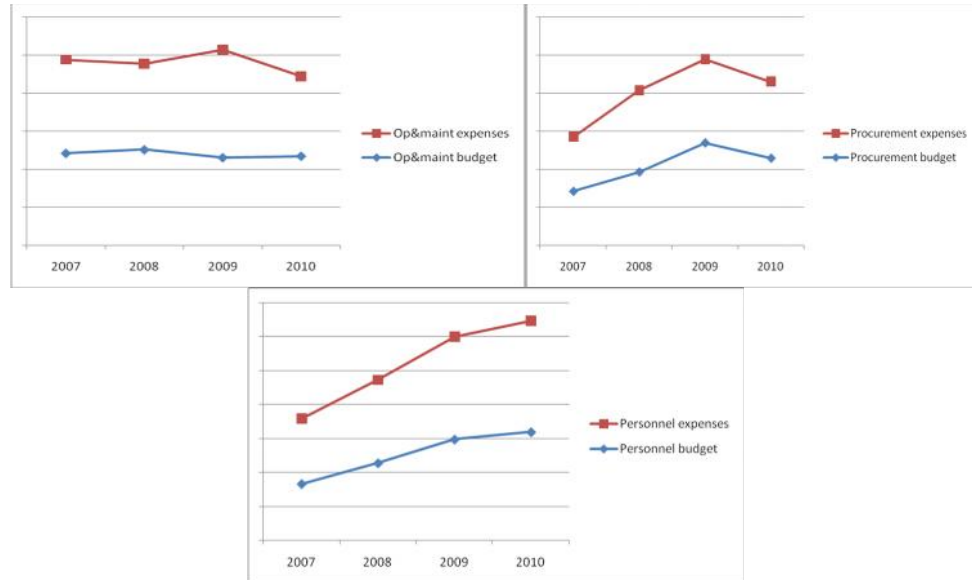


Chart 2

3. Successive comparison between the overall budget and the specific budgets for personnel, operation & maintenance and procurement

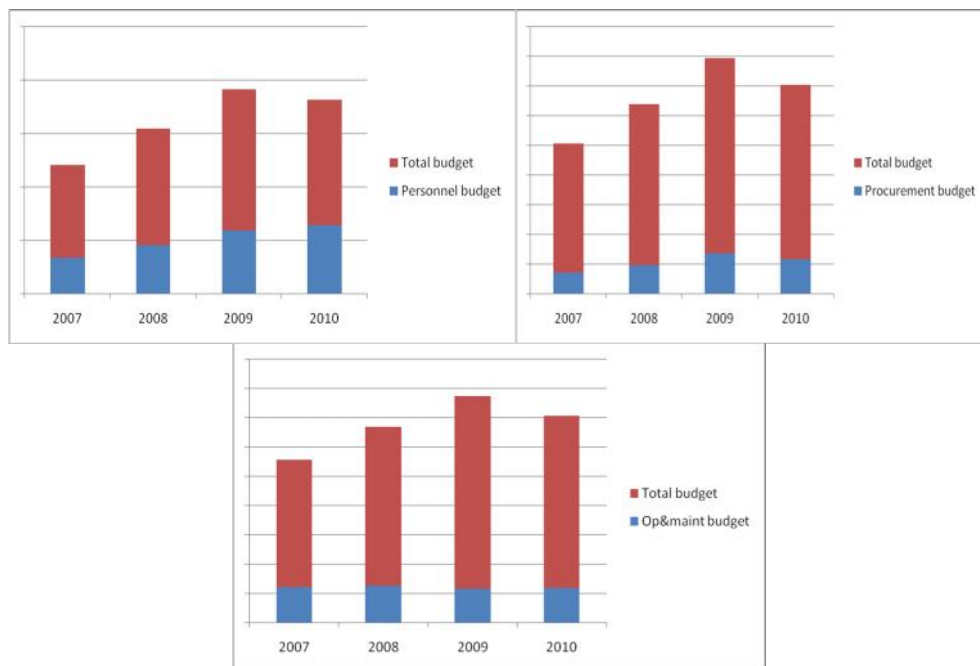


Chart 3

OVERVIEW ON THE DEFENCE PLANNING PROCESS, ON THE MILITARY BUDGETS AND ON THE DEFENCE EXPENDITURES DATA OF DIFERENT STATES

- Successive comparison between the overall expenses and the specific expenses for personnel, operation & maintenance and procurement

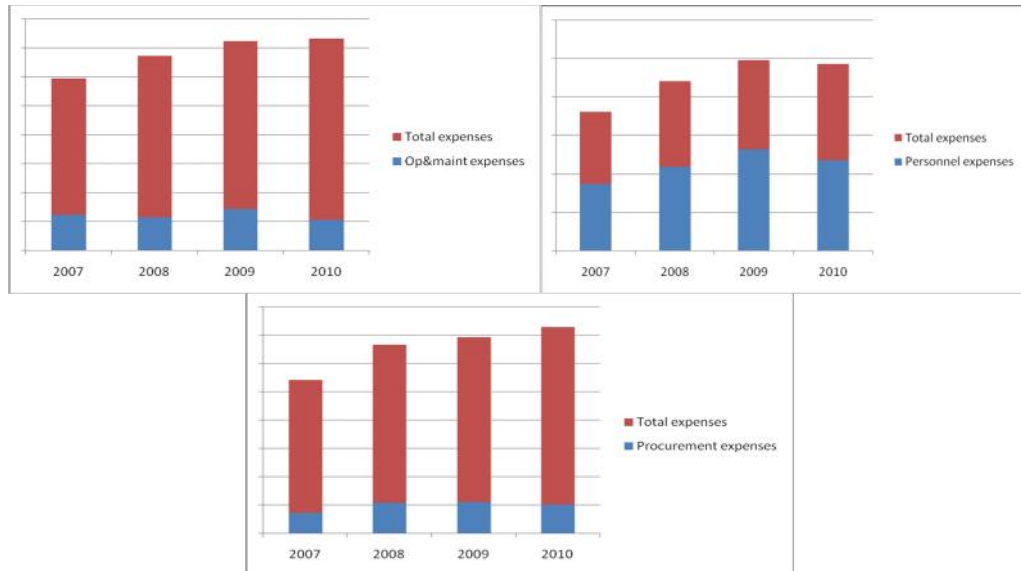


Chart 4

4.2 Case study 2

For case study 2 we have chosen an example of an average to big country with an important level of military interest. The country is part of NATO and is located to the geographical boundary of the alliance in an important strategic position.

The democratic control over the armed forces it has a long enough tradition to be consolidated.

The data used for the study covers the period 2007 – 2009.

For this case study the proposed analysis structure led to the following:

- Comparison between the overall budget and expenses for the envisaged period of time

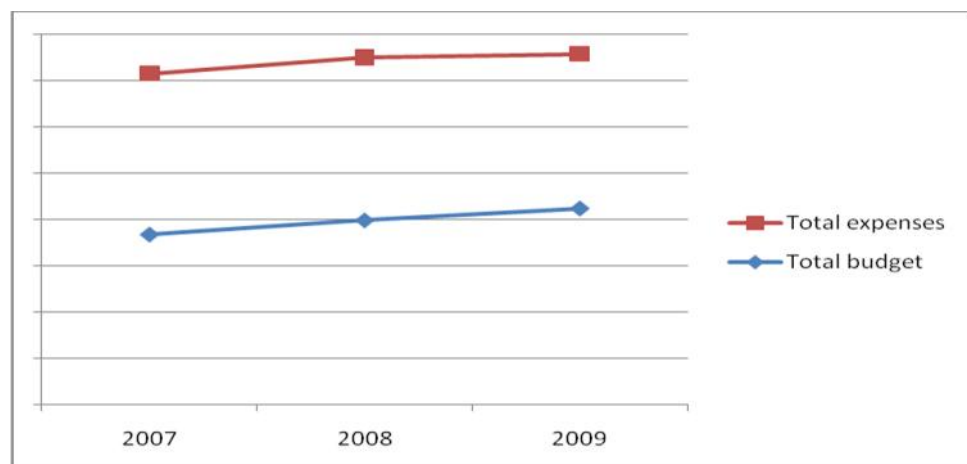


Chart 5

OVERVIEW ON THE DEFENCE PLANNING PROCESS, ON THE MILITARY BUDGETS AND ON THE DEFENCE EXPENDITURES DATA OF DIFERENT STATES

2. Comparison between the specific budgets and expenses for personnel, operation & maintenance and procurement

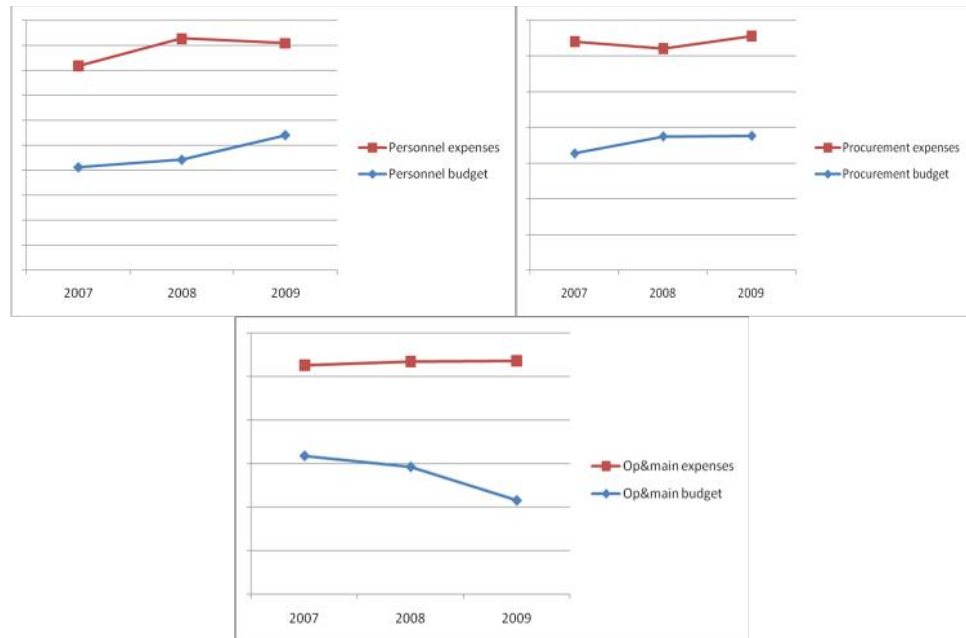


Chart 6

3. Successive comparison between the overall budget and the specific budgets for personnel, operation & maintenance and procurement

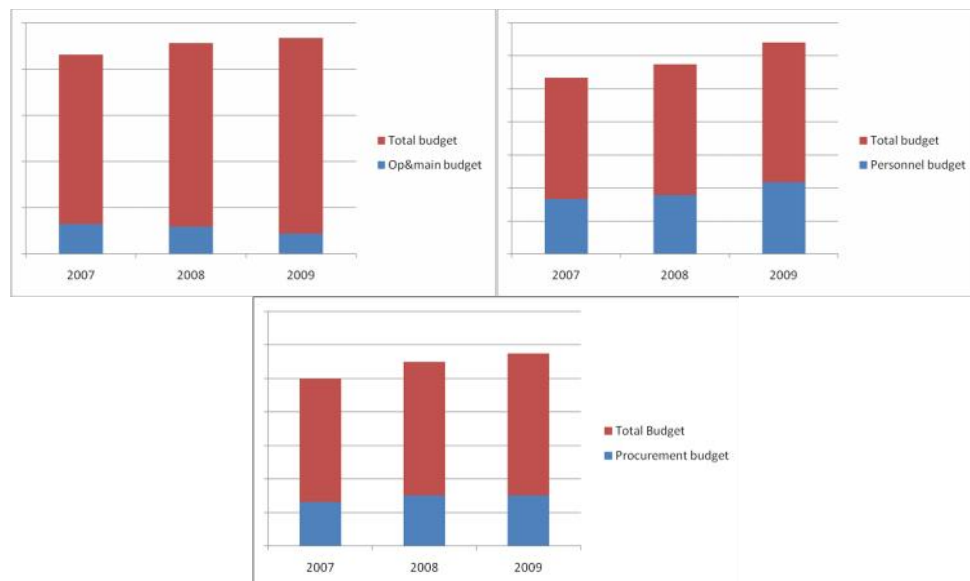


Chart 7

OVERVIEW ON THE DEFENCE PLANNING PROCESS, ON THE MILITARY BUDGETS AND ON THE DEFENCE EXPENDITURES DATA OF DIFERENT STATES

4. Successive comparison between the overall expenses and the specific expenses for personnel, operation & maintenance and procurement

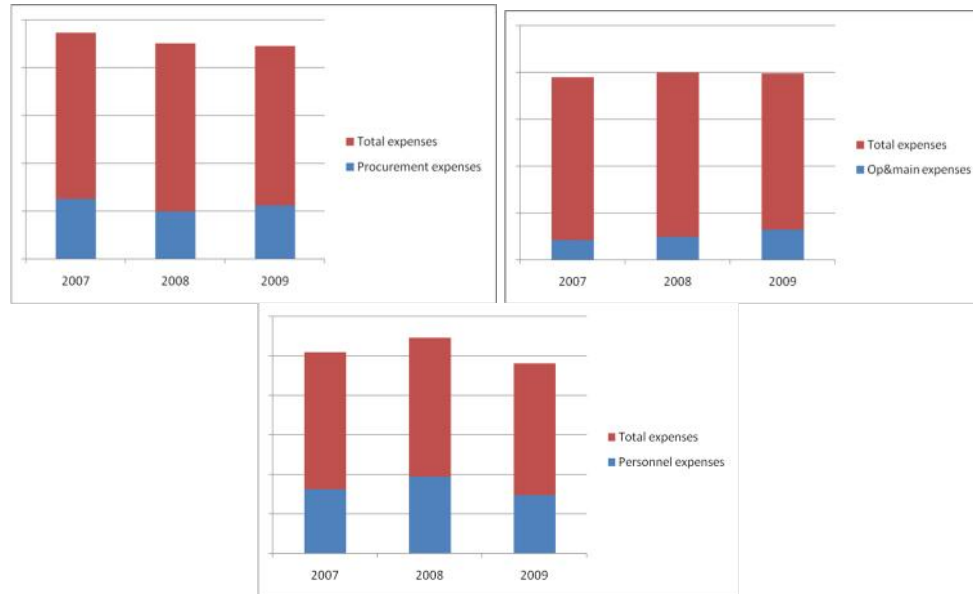


Chart 8

5. Findings

For all presented comparisons the expenses constantly exceeded the planned budgets.

All planned budgets and expenses have a smooth increasing progression during the envisaged period. A tendency to reduce the increasing tendency is visible in both cases.

In both cases the total expenses evolution follow closely the personnel expenses profile.

In the first case we can notice a decreasing tendency of the procurement and operation & maintenance expenses. In the second case they remain pretty constant.

In the first case we can observe a very high percentage of personnel expenses.

For both cases the percentage of the operation & maintenance expenses is very low compared with the overall budget.

6. Conclusion

As this is a study in a very beginning phase we cannot appreciate precisely at this stage if the presented findings are useful indicators but we cannot deny some links as the pressure to limit the expenses in some cases, the importance of the military systems that were able to obtain constantly more money than planned, the pressure on behalf of the personnel expenses etc.

Based on the previous presented findings one can appreciate that at the defense planning level put together with the military budgets and expenses there are evolutions or

OVERVIEW ON THE DEFENCE PLANNING PROCESS, ON THE MILITARY BUDGETS AND ON THE DEFENCE EXPENDITURES DATA OF DIFERRENT STATES

other type of indicators of the state of the military system that can be put in connection with elements determining the military posture.

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- [3] Constantinescu, M., *“Defense and security effects of the economic crisis”*, Journal of Defense Resources Management, Brasov, no. 2 (2)/2011, ISSN 2068 – 9403
- [4] Constantinescu, M., *„The economic framework of the capabilities based planning”*, National Defense University "Carol I" Bulletin no. 2 year 2010, ISSN 2065 – 8281, sole author
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**NATO DEFENSE PLANNING PROCESS
- CONECTION TO THE ROMANIAN DEFENSE
PLANNING¹ -**

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Abstract:

The NDPP in the Alliance is a crucial tool which allows member countries to benefit from the advantages (political, military and resource) of working together. Within the planning process, Allies contribute to enhance security and stability, and share the burden of developing and delivering the necessary forces and capabilities needed to achieve the NATO's objectives. The defense planning process prevents the renationalization of defense policies, while at the same time it recognizes national sovereignty.

Key words: NATO, defense, planning, NDPP, step

1.Introduction

The defense ministers of the Allied nations tasked, in 2008, the EWG(R)² to conduct a review of the NDPP³. The capability development is the outcome of their functioning within each of distinct domains.

The capability development is not conducted in a holistic approach. In addition, the deficiencies in providing capabilities and forces for the ongoing operations led the Nations to express the desire for a further review of the NDPP, in order to integrate all the various strands of the capability development.

The elements of the review are the evolving approach and opportunities for increased coherence of the capability development with EU⁴ and partner nations, with the view to avoid (unnecessary) duplications.

The old NDPP (review completed in 2004) introduced a 10 year planning period. The aim is to use of a step-by-step approach to overcome the Alliance shortfalls and to better support the nations' long term planning cycle. A four year planning cycle with four year elements – Political Guidance and FG⁵ – and biannual elements (defense reviews) was adopted and the use of Reinvestment Goals was meant to better support the defense reform and the transformation process of the Nations and of the Alliance as a whole. The

¹ The document is unclassified and all the information has been extracted from unclassified references documents (Romanian and NATO)

² EWG(R) – Executive Working Group (Reinforced)

³ NDPP – NATO Defence Planning Process

⁴ EU – European Union

⁵ FG – Force Goals

NATO DEFENSE PLANNING PROCESS – CONNECTION TO THE ROMANIAN DEFENSE PLANNING

emphasis was placed on a capability-based approach in the process of deriving of the MMR⁶ and the formulating of the FG addressed to Nations.

The NDPP in the Alliance is a crucial tool which allows member countries to benefit from the advantages (political, military and resource) of working together. Within the planning process, Allies contribute to enhance security and stability, and share the burden of developing and delivering the necessary forces and capabilities needed to achieve the NATO's objectives. The defense planning process prevents the renationalization of defense policies, while at the same time it recognizes national sovereignty.

2. Defense Planning process – an overview

2.1. Aim

The aim of defense planning is to provide a framework where national defense planning and NDPP can be harmonized to meet the agreed targets in the most effective way. In other words, defense planning seeks to ensure that the Alliance has necessary forces (interoperable, equipped, trained, supported) – and associated military and non-military capabilities – to undertake the Alliance's full spectrum of missions in accordance with the Strategic Concept⁷.

The NDPP could address some non-military capabilities and expertise to complement the military support to stabilization operations and reconstruction efforts. These

The NDPP has a coherent and comprehensive defense planning process. It applies a specific approach and mechanism through which NATO is bringing its civilian and military side, including the Strategic Commands, closer together by engaging them in a common, functionally integrated approach to the issue of defense planning alongside national planners. Work is done in a functionally integrated manner while at the same time ensuring that products are fully coordinated, coherent, persuasive, clear, result-oriented and delivered on a timely basis.

2.2. Elements

The NDPP consists of five steps or functions. The process is sequential and cyclical in nature, but the frequency of the individual functional activities may vary and the function of the facilitating implementation (step 4) is a continuously activity:

1. establish political guidance;
2. determine requirements;
3. apportion requirements / set the targets;
4. facilitate implementation;
5. review results.

Any of these elements can be conducted out of cycle or at intermediate intervals if it is necessary.

⁶ MMR – Minimum Military Requirements

⁷ The Strategic Concept is an official document that outlines NATO's enduring purpose and nature and its fundamental security tasks. It also identifies the central features of the new security environment, specifies the elements of the Alliance's approach to security and provides guidelines for the adaptation of its military forces. Generally speaking, since the birth of NATO, there have been three distinct periods within which NATO's strategic thinking has evolved: the Cold War period; the immediate post-Cold War period; and the security environment since 9/11.

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At the **first step**, the political guidance provides the goals and the objectives to be met by the Alliance within the framework of the planning process. At this moment is defined the LoA⁸ - what the Alliance should be able to do (qualitative and quantitative capability terms).

The purpose of this step is to establish a unified political guidance document (a single one) for defense planning. The political guidance should reflect the political, military, economical, legal, civil and technological factors which could have an impact on the development of the capabilities. The document will be reviewed at least every 4 years.

The responsibility for preparing the political guidance belongs to EWG(R). The first draft will be elaborated by the Defense Planning Staff Team taking into account the initial inputs provided to EWG(R) by NATO bodies and committees responsible for various planning domains. The draft will be forwarded to EWG(R) for further development by nations. Once this draft is mature, it will be forwarded to NAC/DPC/NPG by EWG(R) for submission to and approval by ministers and endorsement by Heads of State and Government

A detailed analysis will be conducted, within the **second step**, to identify the capabilities required to achieve the LoA and to steer the capability development efforts of Allies. These capabilities will be identified by the SCs⁹. The complete requirements determination will be conducted every 4 years. To ensure flexibility, a mechanism for out-of-cycle adjustments, mid-point revision or updated will be provided.

The results of the analysis will be translated into targets addressed to the Nations. For this reason the SCs will provide rational and transparency in how the requirements have been developed.

After the single set of required capabilities, MCR¹⁰, is determined, the SCs will conduct a comparison between these and the existing and planned national, multinational and NATO owned capabilities potentially available for the operations. The SCs will identify the shortfalls in required capabilities.

This set of shortfalls form a subset of MCR and will be used to derive a set of PSA¹¹ taking into account the risks associated with each shortfall. On the other hand, the comparison will identify the surpluses against the MCR.

The **next function** is apportioning requirements and setting the targets to nations, on the basis of fair burden sharing and reasonable challenge. The targets can be met individually or by using a multinational approach – some targets or target elements can be assigned for collective implementation.

This step is conducted every 4 years, but there is the possibility to introduce out-of – cycle targets, according to the needs of the Alliance or the Nations.

The DPST¹² (initially led by SCs) will develop targets for existing and planned capabilities against the MCR and will consolidate them in the draft target packages, together with their associated priorities and timeless. Targets are expressed in capability terms and are flexible enough to allow national and multinational implementation.

Each member country has the opportunity to seek clarification on the content of targets and to present its national views on their acceptance during a meeting between the

⁸ LoA – Level of Ambition

⁹ SC – Strategic Commander, i.e. Allied Command Operation (ACO) and Allied Command Transformation

¹⁰ MCR – Minimum capability Requirements, formerly Minimum Military Requirements. MCR will be made available to the Nations

¹¹ PSA - Priority Shortfall Areas

¹² DPST – Defense Planning Staff Team

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relevant national authorities and representatives from the DPST. The DPST will consider the member country's perspective and priorities with the aim of refining the NATO target packages and providing advice on what constitutes a reasonable challenge.

Following discussions with member countries, the leadership of the DPST will transition from the Strategic Commands to the IS¹³. At this point, the DPST will continue to refine and tailor individual draft target packages in line with the principle of reasonable challenge. To ensure transparency and promote Alliance cohesion, packages will be forwarded to Allies with a recommendation of which targets should be retained or removed to respect this principle. Allies will review these packages during a series of multilateral examinations.

Agreed packages are accompanied by a summary report, which is prepared by the Defense Policy and Planning Committee (Reinforced), on the targets as a whole. This will subsequently be forwarded to permanent representatives for submission to defense ministers for adoption. The summary will include an assessment of the potential risk and possible impact caused by the removal of planning targets from packages on the delivery of the Alliance's Level of Ambition.

The **fourth step** is a continuous activity. It seeks to acquire the capabilities by monitoring and encouraging national implementation by facilitation and supporting multinational implementation and by executing collective implementation¹⁴. The DPST will

- identify further action to be taken, including solution development,
- conduct planning activities and develop proposal for allocating lead responsibility where this has not already been done,
- offer suggestions for multinational solutions,
- and will identify the need for remedial action (if necessary).

The detailed work needed to develop and implement a capability improvement or action plan is carried out by multidisciplinary task forces. These task forces are composed of representatives from all stakeholders, under the lead of a dedicated entity. Each task force is supported by a "Capability Monitor" who keep themselves abreast of progress in the implementation phase and report to all relevant bodies and committees, providing feedback and additional guidance to the task force leader

The **last step**, review results, examines the degree to which the aims and objectives (political objectives, ambitions and associated targets) have been met. It also seeks to offer feed back and direction for the planning process and its associated activities for the next cycle. Capability reviews will be carried out every two years.

The review process starts with the development of NATO Capability Survey, which seeks information on:

- national plans and policy, including on Allies' efforts (national, multinational, collective) to address their targets, and
- on the national inventory of military forces and associated capability, any relevant non-military capabilities potentially available for NATO operations, and NATO financial plans¹⁵.

¹³ International Staff

¹⁴ Outline model for a NATO defense planning process, phase 2 (PO(2009)42

¹⁵ Outline model for a NATO defense planning process, phase 2 (PO(2009)42

NATO DEFENSE PLANNING PROCESS – CONNECTION TO THE ROMANIAN DEFENSE PLANNING

3.Connection to the Romanian Defense Planning

The Romanian Defense Planning is conducted in accordance to the provisions of the Defense Planning Law (473/2004). In accordance to this law, the defense planning is an essential component of the Romanian defense policy. It consists in a complex activities and measures meant to promote the national interests and to define and fulfill the defense-related national security objectives.

The planning process includes the programs, actions and measures initiated by Romania

- to contribute to security and collective defense in the Alliance and EU,
- to continue and enhance the bilateral and multilateral military cooperation,
- and to meet its commitments to other international organizations, agreements and conventions.

In the fig. 1 is presented the provisions of the law, into a graphical form, concerning the main elements of the Defense Planning Process and their functional relations.

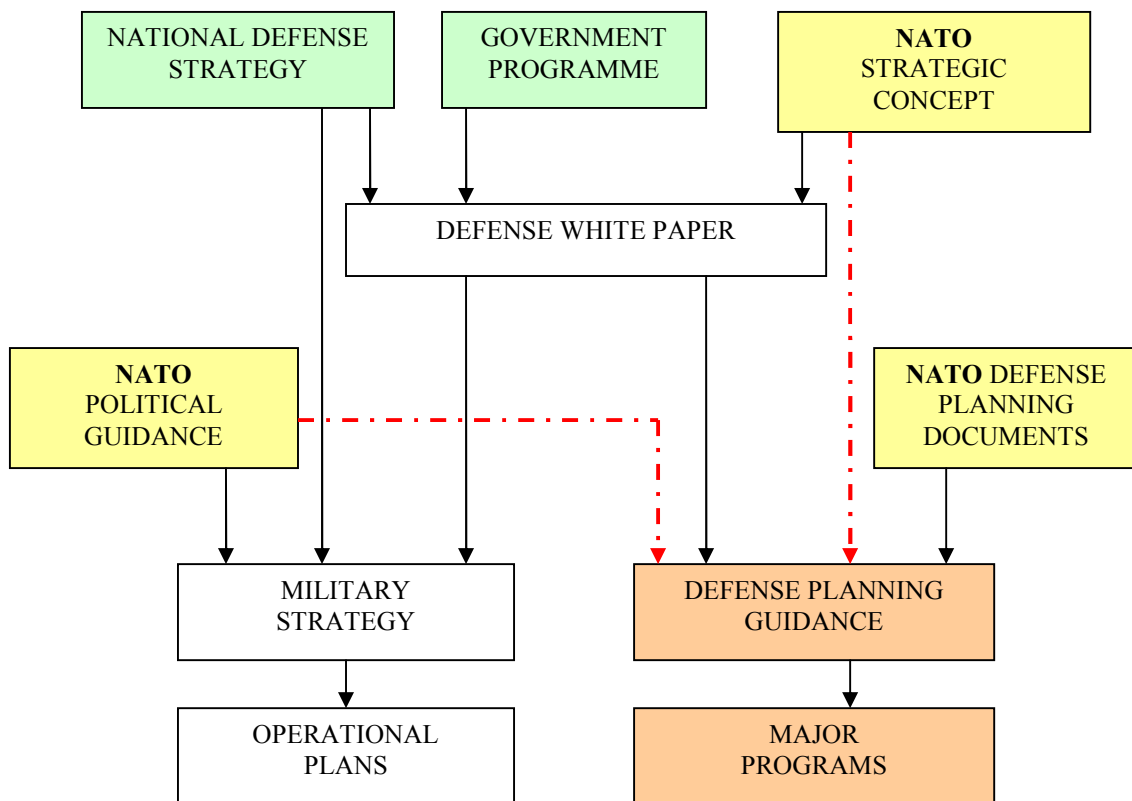


Fig.1 Elements of the National Defense Planning System

The figure shows that the main NATO documents, which direct the NDPP, are used to provide inputs into the main elements of the national defense planning process:

- NATO Strategic Concept has direct inputs into Defense White Paper¹⁶ and indirect inputs into Defense Planning Guidance;

¹⁶ Defense White Paper has 4 years validity.

NATO DEFENSE PLANNING PROCESS – CONNECTION TO THE ROMANIAN DEFENSE PLANNING

- NATO Political Guidance has direct inputs to Military Strategy and indirect inputs to Defense Planning Guidance;
- NATO Defense Planning Documents has direct inputs into the Defense Planning Guidance.

It is obvious that given the functional relations between the NATO documents and the Romanian Defense Planning structural elements, the implications are to be expected following changes/updates of the Alliance's Defense Planning System.

The Romanian Defense Planning System is harmonized with the Alliance's Defense Planning System at two tiers:

1. incorporation of the main provisions of NATO Planning related documents into the national defense planning system at all levels and stages;
2. temporal alignment of these two systems.

At this moment, the temporal alignment has become partial because the Defense Planning Guidance looks at a 6 years time frame, while NATO defense planning period is 10 years.

Why?

- At the time the Defense Planning Guidance was introduced as the main tool of the planning, the NATO defense planning period used to be six years.
 - But the difference is not a problem because, although the Major Programs are designed for a six years time frame, the implementation plans for the force goals are developed for ten years.
- Moreover, the national documents are issued in the relation with the election period – the president and the government are requested to produce new main defense planning documents – and the election years are not synchronized with the years when the Allied main documents are published.
 - This is not a problem because the new main defense planning documents will be in line with the provisions of NATO document that are in force at the time of their approval.

If we looking how the Romanian Defense Planning System was created – to closely interact at all levels and during all stages with the NDPP – updates in the Alliance's Defense Policy will be mirrored in the Romanian defense planning documents.

Changes or updates of the internal mechanism of the NDPP do not have a direct influence on the national defense planning. All the new elements (i.e. multinational approach) must be known and their implementation supported (if these are requested by the Alliance), but they do not have an impact on the regular functioning of the national defense planning mechanism as they are described by the current national laws and regulations.

4. Conclusion

The new NATO Defense Planning Process and the associated procedures developed by EWG(R) have the potential to improve the synergy between all activities related to the development and delivery of capabilities.

The updated mechanisms are though to be flexible enough in order to involve all planning domains, aiming and eliminating the duplication of efforts and thus increasing the overall efficiency.

NATO DEFENSE PLANNING PROCESS – CONNECTION TO THE ROMANIAN DEFENSE PLANNING

The new NATO Defense Planning Process will be able to better assist nations in their efforts to develop necessary capabilities, offering enhanced possibilities for multinational solutions.

The Romanian Defense Planning system will not be critically affected by the new NATO Defense Planning Process. It will continue to adapt to the new NATO political guidance and the evolving mechanism of the Alliance, always trying to deliver in time interoperable capabilities as sought by the agreed target package.

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MILITARY LEADERSHIP – a different angle

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Abstract:

Leadership and especially military leadership were the faithful companions of mankind with the power to influence evolution, developing a common behavioral language. Being a permanent need but at the same time a product of civilization, military leaders had their share in shaping society as society was polishing the art of leadership. Complex in itself with glorious past and promising future, military leadership is one of the mankind valuable diamonds, therefore an organic element in building the modern society.

Key words: military, leadership, evolution

1. Origins – when and how?

Is leadership born same time with mankind? I shall express doubts by stating that leadership is evolving at same pace with life (therefore, in a primitive shape, it existed before, just waiting for mankind to take it to a different dimension). What should we call the animal ruling a pack? Shall we admit the idea that there is more than just sheer instinct in a predator leading its pack to the kill in a certain attack pattern? Looking at an elephant pack shall we overlook the matriarchal type of society? How about chimpanzees political hierarchy – tough yet dynamic, continuously shifting in a tune given by the latest alliance?

I do not know the answer to all the above questions, but it is impossible not to observe raw leadership elements floating around the mankind cradle. Does this mean that carnivore mammals are the leadership first practitioners (in its most primitive shape)? Would this be the answer to “when”? Looking into their pack life, one can see a mix of instincts generating learning, this leading to something that biologists call hunting tactics.

If biological intelligence appeared rather early along the evolutionary process of life on Earth, shall one disconnect the survival-instinct-intelligence-tactics-leadership chain?

Imagine Homo habilis taking a stone and chipping it to craft the first tool – tool that secured the step towards the hunter. At an increasing speed, life led Neanderthals into becoming Homo sapiens. All these steps were paralleled by the evolution of many features and skills but one aspect is certain: either migrating or settled later, the genus Homo lived (and evolved) in groups of various sizes. Should this be the answer to “when”?

Any given group will have a form of a leader: probably in the beginning was the skilled hunter, maybe the physically fit one or the tallest one. Groups got bigger, stronger and smarter with increased needs of various kinds. Survival got new elements related to territory, wealth, society, and later power and regional influence, therefore generating the need of new types of leaders. Kingdoms needed to become empires, empires needed more resources and subjects to maintain their survivability, all this redefining the long winding

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way from instinct to politics, from small tribes to multi-national alliances, from a stone-tipped spear to nuclear missiles and sophisticated hi-tech drones.

As far as to have a look into “*how*” it is tempting to say that the preservation instinct in early life forms evolved to become a need to organize populations, then to structure societies. The most used pattern when trying to describe a pack, a tribe or a modern society is the pyramidal one. But this is implicit recognition of an early companion along humankind evolution: leadership. Of course required skills for a leader evolved and multiplied along with the victorious journey from the “down from the tree” step until today. Of course there are similarities and translations of the type “then strong in arms – today strong in character” but this follows human society and civilization, with organizational and political needs. Economic growth has a lot to do with probably each and every step in defining leaders. Religious and later political systems have their share in shaping expectations. Preservation instinct got from small groups to nations and groups of nations transforming itself into a more refined and polished concept, coated with diplomacy. Therefore the answer for “*how*” can become a long discussion by itself.

2.Evolution

Either head of a migrating tribe, a king expanding his small kingdom, a pharaoh in need for immortality, an emperor willing to rule entire known world, a continent willing to defeat religious beliefs, a chancellor wishing a 1000 years national socialism, world divided in two halves defending political beliefs, a group of countries in need of more natural resources, or fighting against terrorism to preserve democracy, every known form of structure needed a leader. As tribes became kingdoms, empires and nowadays countries, human society produced various types of leaders and many definitions for leadership. Probably the military leader is the one lasting throughout entire documented history – the other types either faded or even disappeared while new ones were shaped by religion, economics or politics.

As early migrating tribes settled and started to produce more, initiating primitive forms of commerce, the need to attack for gaining new hunting territory became the need for goods security. Later when increased populations were in need for more land, more resources, more slaves or just regional influence, as becoming richer, the need of permanent military organizations seemed the adequate solution. Who to lead? The immediate solution was the ruler himself (probably a tribal reminiscence). Thus we are looking at the first multi-functional leader: spiritual, political and military. For centuries kings led troops in battles. Probably this was the most complex type in number of assumed tasks. History reveals the military natural evolution driven, among other factors, by production, technology, science. But the most spectacular contribution was brought by leaders themselves: techniques, tactics, strategies, concepts and doctrines, many of them transcending to or influencing civil society. Greeks introduced logistics, Romans built supply roads and developed new recruitment policies by using local population, Chinese brought black powder, French introduced canned food, military espionage forced miniaturization, Americans created Internet – just to have a brief enumeration. All these had a powerful influence over progress of civilization.

Ancient China was most likely the first to develop specialized military leadership (around 4th - 5th century BC). Europe having a different territorial and political evolution chose same solution later when rulers started to predominantly carry the domestic and foreign policy out of their capital cities.

MILITARY LEADERSHIP – a different angle

Being acknowledged as heroes in legends and written documents, military leaders were role models for the general population. They became inspirational subjects of songs, poems, hymns, sculptures and paintings.

Skills set got shaped along military history, under the lights of weaponry, technology, science, religion and politics. As war is an omnipresent element throughout mankind evolution, either territorial, expansionist, colonial or religious, it produced many military leaders that were admired, trusted and obeyed by followers. In time, driven by the environment to act within, elements that define the art of leading troops got multiplied, refined and polished, opening roads, building a visionary heritage and pioneering along new trails. In two words: building history.

3.Elements

Someone once described leadership as being one of the most observed but less understood phenomena, thus elegantly defining the art. As with all arts one can see tools, raw materials or ingredients used, without necessarily understanding the mechanism of releasing the miracle within. We all enjoy the view of a masterpiece of a sculptor but are we capable of reproducing it? And is it about reproducing? Will ever a copy capture the spirit, the essence? Or is it about originality, vision, courage, personality, character?

Does ego have something to do with it? Has pursue of fame been an ingredient at a time? To what extent could ego or dominance be taken into consideration when discussing military leadership? Or is it strong personality able to influence and guide others? How about vision? What are the ingredients used in the art of military leadership? It is in an obvious manner related to people, connected to people and for people.

After a long historical journey, nowadays military leadership is still having some of the ancient core elements as: bravery, strong will, attitude and strategy. Yet bravery is not as physical as it was, strong will is not about wining at all costs anymore, attitude is not about the boldness to dare anyone for the challenge sake and strategy got more complex driven by background changes.

What happened? Society, civilization, new values and new philosophies polished the gem called leadership into today's diamond. Economics, politics, modern democracy added new dimensions by dramatically changing the environment. Therefore some elements faded away, other evolved and new ones came on stage. Over time, dominance was replaced by creativity and vision in defining success. Actually, early and medieval military leadership encompassing ingredients like: formal or sacral appointment, absent or subjective selection criteria, position guaranteed for life, etc., helped mankind, through a simple comparison process, to define over time the necessary ingredients of leadership and what will define success.

Printed information spread knowledge reshaping values and beliefs, bringing large scale education on stage, handing out to leaders a new tool and a new type of audience. Military leadership was not anymore of harnessing sheer force and raw brutality, but of directing combatant skills to precise effects using limited-to-necessary force. Later principles of war acknowledged all this under concepts caught both in military doctrines and within international laws.

Determination, honor, dignity, personal excellence, transmitting a vision are the colors used in this painting and troops (people) are the canvas. Personality, integrity, adaptability, sound judgment and trust are chisels to carve the marble when unveiling the monument of military leadership.

MILITARY LEADERSHIP – a different angle

If in the beginning simple headcount was a determining factor on the battlefield, very soon leaders had the vision of effectiveness in developing new tactics and strategies.

Supported by science and technology, military leadership transformed conflict at the same pace with civilization.

By adapting leadership to economical and political factors and still pursuing a vision, new features were added by military leaders to this art.

Inspiring people, mobilizing people, showing the way ahead, understanding social, economical and political trends, driving operations to success will most likely remain key threads to build the fabric of military leadership.

4. Today

The end of the 20th century added new elements to military leadership as well as environment changes, new restraints, a different exposure to public and the most important: new types of threats to deal with.

Counter terrorism, counter insurgency, peace enforcing, peace keeping and many other new threats defined the asymmetric dimension of today operations. More than this, new tasks like humanitarian intervention or reconstruction added non-traditional military elements into the context to be addressed by military leaders, thus multiplying the tools at hand and increasing the complexity of the decisional process. Actually the genetics of military leadership got richer and better defined.

Public exposure got greater more complex than ever. Legends, songs and hymns have become news in visual and written media and got a different structure, bringing criticism to a permanent position. Building and preserving image are now factors that influence military decisions, especially in modern democracies where public opinion affects politics almost in real time, since media increased their speed in transmitting information.

Winning hearts and minds is a new permanent and critical battle for modern leaders in need to secure operational military results. Therefore new components were added as instruments and missions for today's commanders.

Politics and the two major types of societies: liberal and communist, generated two kinds of military leadership – not too different but with different tool sets and one can best observe this by looking into World War II at the two sides of the same alliance. Democratic military organizations became more refined and better connected to reality in all its dimensions, thus more complex.

Because it was not about pillaging new territories as a financial compensation to wars and warriors anymore, economics lead to a different approach on wars: limitation in time, less but more efficient weapons and better protection for own troops.

By emphasizing people as being in the center of the entire subject of leading, multiple facets were added by sciences like psychology, philosophy and sociology. Communication, motivation, reward, sanction and counseling were redefined; modeling military culture becoming a permanent task for leadership.

5. What's next?

Society is constantly evolving along with democracy models, politics, science and technology. Arts are in a permanent evolution driven by a perpetual shifting environment. The art of military leadership will not remain unaffected. Its constant increasing heritage will always be engraved in history and will contribute in shaping the future.

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Proved to be a fast adapting art with newborn scientific features, leading military organizations will continue to set milestones and to produce characters, populating the collective memory with updated sets of traits to define personality, success, strength.

Public opinion will continue to influence politics and as current democratic society trend is to not support armed conflicts of any type this will transform for sure military operations under all aspects.

Tomorrow will surely bring new challenges and constraints, new kinds of threats or hostile elements, probably new types of operations, all these taking military leadership to the next level. Will we see again military leaders in attrition conflicts? Will modern military be prepared to handle again total wars as history showed its ability to run in cycles? One reassuring fact is that military leadership constantly adapted and evolved fast enough to cope with a constant evolving battle environment. Therefore mankind will always have its leaders made of the right fabric and connected in the same time to reality yet not without a modern vision.

6. Conclusion

Military leadership is one additional feature to consistently define mankind evolution throughout its history and will further influence society, politics and economics. With continuous development driven by civilization, culture, philosophy, science, technology, leadership will be a constant ingredient in the permanently shifting picture of *Homo sapiens sapiens* and even beyond, since conflict is still built in the human nature as long as survival defines evolutionary life of man on Earth.

Because it is not about ego or power or wealth, and it is about people and operational success, about building strong values and organizations, military leadership is one of the most valuable possessions of current and future society, one of the diamonds to proudly shine on mankind's crown.



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MENTORING
AS AN IN-HOUSE PROGRAM
IN ROMANIAN NON-PROFIT ESTABLISHMENTS
SOME CHALLENGES AND OPPORTUNITIES

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Abstract: Current economic challenges rise for most non-profit establishments worldwide issues related to maintaining product or services quality standards in the context of dwindling resources. This article argues that along with the need to tackle financial constraints, the need to retain and develop personnel with in-house resources is both a challenge and opportunity with a say in the future of any organization. Consequently, the focus of the paper is on briefly outlining the stages need to be undertaken in order to start running an in-house mentoring program. Thus, by listing the positions to be involved in such a program, the instruments needed for every stage of the process, the article identifies some of the most common challenges and opportunities ensuing from initiatives aimed at developing mentoring programs as an in-house service of non-profit establishments.

Key words: human resource development, mentoring, coaching, non-profit establishments

1. MENTORING - COACHING: DEFINITIONS, DIFFERENCES AND SIMILARITIES

According to Murray M. (2001), “*Mentoring is a deliberate pairing of a more skilled or more experienced person with a less skilled or less experienced one, with the mutually agreed goal of having the less skilled person grow and develop specific competencies*”. [1]

In Army’s view, mentoring is “*a process used to develop the thinking skills and frames of reference for sequential and progressive leader development*”. [2]

Thus, as the definitions above highlight, mentoring is about setting models as frames of reference in the ongoing process of organizational learning.

The role of mentoring is to address the needs of the newly hired people within an organization, or to identify and support the talented people in moving up the career ladder. In this respect, research [3] highlights that about 35% of the new employees who do not benefit from a mentoring program leave the company within the first year, compared to a ratio of 16% in companies where mentoring programs exist. Inherently, the higher the turnover, the higher is the cost per employee.

As for coaching, this is used as a support tool for appraisals, work planning and performance reviews. In this respect, a coach’s role is to “*work with clients to achieve speedy, increased and sustainable effectiveness in their lives and careers through focused learning*”. [4]

In terms of the differences between mentoring and coaching [5], these can be summarized as follows.

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First of all, mentoring programs are focused on providing individuals with role models in order to support their personal and professional development as part of organizations. On the other hand, coaching is efficiency and performance oriented. Hence, while with the former feedback is of an informal nature, with the latter feedback is formalized and documented as part of the performance assessment process.

Second, the rewards granted by mentoring and coaching programs are different in nature. The level of trust granted to the mentee by the mentor as learning progress is made is actually the reinforcement tool that contributes to the stability and continuity of the relationship between the two. Improved performance results are the tangible outcome of coaching and they are subject to the formal reward and sanction system of the organization.

Third, given the different focus of the two, the interactions in mentoring relations are more flexible and based on conversation and trust. By contrast, the coaching relationship unfolds in accordance with a pre-established agenda that includes measurable performance goals whose degree of accomplishment is assessed in every meeting of the coacher and the coached person. In this respect it is worth reminding that the mentor-mentee relationship is a matter of “chemistry” and is based on the freedom of choices concerning its continuation or termination. As for the coaching relation, this is established *a priori* and focuses on the professional integration of an employee.

The major similarity between mentoring and coaching is that they are both a “moral investment” into the human capital of an organization. Moreover, they both require people acting as coaches or as mentors to be well trained from a professional point of view, but to also have very good interpersonal skills. Last but not least, they are directed, either directly as in the case of coaching, or indirectly towards maintaining and improving organization performance.

2. MENTORING: AN *AS IS* ANALYSIS

In terms of the status of mentoring programs abroad, I conducted a research based on open sources available via the Internet and identified three major trends.

The first trend is aligned to Murray’s definition of mentoring provided in the first part of this paper and is represented by companies like IBM, Global Mentoring Solutions, Royal Bank of Scotland, Wise Mentor Capital Mentoring that offer mentoring programs based on the experience they have gained in fields of activity like IT, taxes, labor health and security, work legislation, or making a business case for financing company development and alignment to its strategy. It is obvious that such a trend is characteristic of organizations that have not only learnt from their own experience, but have also developed their capability to provide mentoring programs to companies working in similar fields of activity.

The second trend with mentoring programs can be identified in the education field (e.g. Manchester University, Greenwich University, Canterbury University, etc.), in the case of those companies that aim at integrating new employees (e.g. Sony) or at developing the skills and promoting their most talented personnel, or in companies like Automotive Youth Education System (AYES) that encourage the development of mentoring relationships between their employees and future university graduates that may someday become prospective workforce. In this respect, it is worth underlining the institutionalization of the mentoring relationship and, hence, its acknowledgement as an important one for employees’ career.

The newest and most challenging trend is that of companies offering mentoring services but from the position of a facilitator and not that of a mentor. Partially, this kind of service resembles the one sold by companies that have acknowledged expertise in a particular field. The major difference between this latest trend and the one already mentioned at the beginning of this chapter lies between the types of skills the mentoring relation aims at developing. In the case of companies

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with an impressive portfolio in their field of activity, the mentor is a person who transfers his/her knowledge in a particular field to an apprentice hired by another company that pays for such a service. Companies offering mentoring programs to people who are to act as mentors within their own organizations emphasize that their mentors actually act as facilitators. Such companies offering this type of service are quite few and an example in this respect is *Performance by Design* [6]. However, when looking at the sites of these companies, it becomes obvious that their customers willing to pay for in-house mentoring services are scarce if non-existent. Such a conclusion only underlines that, so far, mentoring seems to be more of an internal and specialization related matter, rather than a discipline of its own that can be mastered just like any other field of activity.

This conclusion is even more prevalent when analyzing the status of mentoring in Romanian private and non-profit establishments.

In terms of the for-profit companies from Romania, the private companies, especially multinational ones emphasize mentoring as described by the second trend identified by this paper. The situation with non-profit organization is more challenging, though. The most prevalent field in Romanian non-profit establishments where mentoring programs seem to exist is the educational field, especially the academic one. From this point of view, the mentoring programs and the mentors are mostly viewed as a liaison between undergraduates/graduates and companies where they have to do their internships. Even though university organization charts available via Internet point out the existence of offices dedicated to this role, the results are hard to assess and would require a nation-wide investigation, which is not the goal of this paper. However, the latest legislative initiatives in the field and the current status of education in Romania indicate that mentoring programs do not actually work as intended and a lot of work must be done.

As for other non-profit organizations the information is quite scarce and, based on word-of-mouth information I believe its scarcity is not the result of information that is not releasable to the public, but the consequence of the inexistence of institutionalized, formalized mentoring programs. As a result, the focus of this paper is on briefly discussing the challenges and opportunities arising from an acknowledged mentoring program that should be in place in every non-profit organization.

3. CHALLENGES AND OPPORTUNITIES UNDERLYING AN INSTITUTIONALIZED MENTORING PROGRAM

The challenges and opportunities underlying an institutionalized mentoring program can be better identified through the description of the stages and information flow characteristic of any such initiative. Their identification is made indirectly through the description of the prerequisites that have to be met for every stage of the process displayed in the figure below.

STAGE 1: ORGANIZATION NEEDS ASSESSMENT

Any organizational intervention is based on a thorough and adequate analysis of its mission, strategic goals, needs and opportunities. Consequently, a clear vision of what the future must be like for a non-profit establishment is mandatory and can only be shaped starting from its "AS IS" status. It is only if these prerequisites are met that a mentoring program can be initiated, developed and implemented.

Positions involved:

- Non-profit organization top manager
- Human Resources Management representative or Human Resource Management Development Officer
- Specialists with expertise in mentoring programs

Instrument suggested: PESTEL analysis (**Political Future; Socio Cultural Future; Economic Future; Technological Future; Environmental Future; Legal Future**)

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Results:

- The identification of organizational needs in terms of its personnel personal and professional development based on the conclusions of the PESTEL analysis.
- The establishment of the mentoring program based on the stages described in Figure 1
- The establishment of the schedule for the mentoring program

The initiation of this stage is one of the major challenges for any mentoring program especially in times of economic insecurity when for most people future may seem gloom and without too many opportunities. Therefore, while a difficult stage to initiate; this could also be an important signal at the level of an organization's employees that the establishment takes real interest in their welfare and future.

Another challenge at this stage is raised by the necessity to find the consultants that must set the course for the program. Even though this may come quite costly for the establishment, the long-term benefits will pay off. The alternatives to hiring consultants is to hire a person with a background in human resource management, and more specifically in professional development, or to assign this responsibility to someone in the HR department.

STAGE 2: MENTORS' IDENTIFICATION

This stage requires to run recruitment and selection processes in order to identify the persons willing to be part of the mentoring program. Mentioned should be made that volunteering should be the principle based on which the pool of mentors is created. Therefore, for this stage to be actually implemented and to allow for the process to continue, the package of non-financial rewards must be very well known by all employees. An alternative to this would be resorting to former employees of the establishment who still take an interest in its activities and who may be interested in volunteering to pass on their knowledge to their younger colleagues. Regardless of the solution chosen, the skills and competences that mentors must have should be well formulated so that confusions, misunderstandings or poor results are avoided.

Positions involved:

- HR Department representative
- Consultants (if the decision is made from the very beginning to hire specialized personnel to help build the program)/HRD specialist

Instruments:

- Mentor's profile

STAGE 3: MENTORS' ORIENTATION COURSE

Once the mentors are shortlisted, an orientation course for them is absolutely necessary. This should focus on the following:

- Developing a preliminary work agenda with the prospective mentee.
- Establishing the times when the mentoring activity will be analysed with the HR Officer.
- Improving communication techniques like active listening and giving and receiving feedback.
- Improving time management skills.
- Understanding the role and responsibilities of a mentor.

Positions involved:

- Mentors shortlisted
- Consultants/ HRD specialist

Instruments:

- Mentor's orientation course

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STAGE 4: MENTEES' IDENTIFICATION

The identification of mentees depends on their status within the organization.

For the newly employed personnel, the mentoring program is not an alternative, but a mandatory step for their integration. Therefore, in their case, a careful analysis of their skills and personality is required so that the building of the mentor-mentee relationship should not be hampered by possible misalignments.

For the employees who have been with the organization for more than three years, joining the mentoring program must be a volunteer act. Moreover, it is only those who are viewed as the most promising members of the organization that should be part of such a program, especially if they are to be promoted in managing positions.

Positions involved:

- Consultants/ HRD specialist
- HR Department representative
- Mentee's manager

Instruments:

- Mentee's profile
- Mentee's professional development needs evaluation

STAGE 5: ANALYSIS OF MENTEES' PERSONAL AND PROFESSIONAL DEVELOPMENT PLAN

This stage involves the establishment of the competences a mentee needs for his personal and professional development in the organization in accordance with the latter's needs, the mentee's personal and professional development plan, as well as the activities required to undertake the plan and their deadlines for completing.

Positions involved:

- Consultants/ HRD specialist
- HR Department representative
- Mentor

Instruments:

- Mentee's profile
- Mentee's professional development needs evaluation

STAGE 6: MENTEES' ORIENTATION COURSE

The mentees' orientation course must be focus on issues like: career planning techniques, active listening, giving and receiving feedback, etc.

Positions involved:

- Consultants/ HRD specialist
- Mentees

Instruments:

Mentees' orientation course

STAGE 7: MENTOR-MENTEE COMPATIBILITY ASSESSMENT

The mentor-mentee compatibility assessment is made by taking into account the choices and plans of the mentee, the assessment done by his/her manager, as well the results of the personality test taken upon employment.

Positions involved:

- Consultants/ HRD specialist

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- Company's/Contracting psychologist

Instruments:

- Myers-Briggs personality test
- Mentee's profile
- Mentees' personal and professional development plan

STAGE 8: MENTOR-MENTEE RELATIONSHIP NEGOTIATION

A long-term fruitful relationship between a mentor and mentee must start from its clear negotiation. Therefore, the aim of this stage is to allow the two establish jointly the professional development plan and the steps to be taken for the next twelve months in order to put it into practice.

Positions involved:

- Consultants/ HRD specialist
- HR Department representative
- Mentee's manager
- Mentor
- Mentee

Instruments:

- Mentor-mentee written agreement

STAGE 9: MENTEES' PERSONAL AND PROFESSIONAL DEVELOPMENT PLAN IMPLEMENTATION

Mentees' personal and professional development plan implementation will be done as agreed in stage 8.

Positions involved:

- Mentor
- Mentee

STAGE 10: MENTOR-MENTEE REGULAR MEETINGS

The regular meetings between mentor and mentee will take place in accordance with the agreement signed in stage 8. The conclusions of the meetings will be drawn by the mentor and forwarded in a report to the mentee's manager, as well as to the consultants/ HRD specialist.

Positions involved:

- Consultants/ HRD specialist
- Mentee's manager
- Mentor
- Mentee

Instrument:

- Report on meeting's conclusions

STAGE 11: MENTOR-MENTEE JOB ROTATION

One month before the mentoring program is over, the mentee will take over the job responsibilities of the mentor.

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STAGE 12: MENTEE'S PERFORMANCE ASSESSMENT

At the end of the job rotation period, the mentee's performance will be assessed based on the performance criteria established by the mentor, the HR department representative and by the mentoring program's manager.

Positions involved:

- HR department representative
- Mentor
- mentoring program's manager

Instrument

Performance evaluation criteria

4. CONCLUSIONS

When comparing the definitions of mentoring and its benefits with the stages that need to be followed in a formal mentoring program it becomes obvious that there are inherent difficulties. One of the most important is that of answering in unequivocal terms to the question: "Why do we need after all a mentoring program?". When an organization has a clear vision of its future and makes sure that its human capital is at the core of fulfilling it, then the answer to the above question goes beyond the mere adoption of fashionable arguments.

Mentoring should be a state of mind. But for it to become so, it first needs to be formalized if not at the level of organizational documents, then at the level of the collective behavior of people. For this to actually happen, it is obvious that the culture of the organization should be one focused on learning and continuous feedback.

Last but not the least, mentoring is commitment and for it to work commitment of top management is mandatory. Thus, it is only when the role models can be found at this level that formal initiatives can actually become a state of mind and a collective way of behaving.

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MENTORING AS AN IN-HOUSE PROGRAM OF NON-PROFIT ESTABLISHMENTS. SOME CHALLENGES AND OPPORTUNITIES

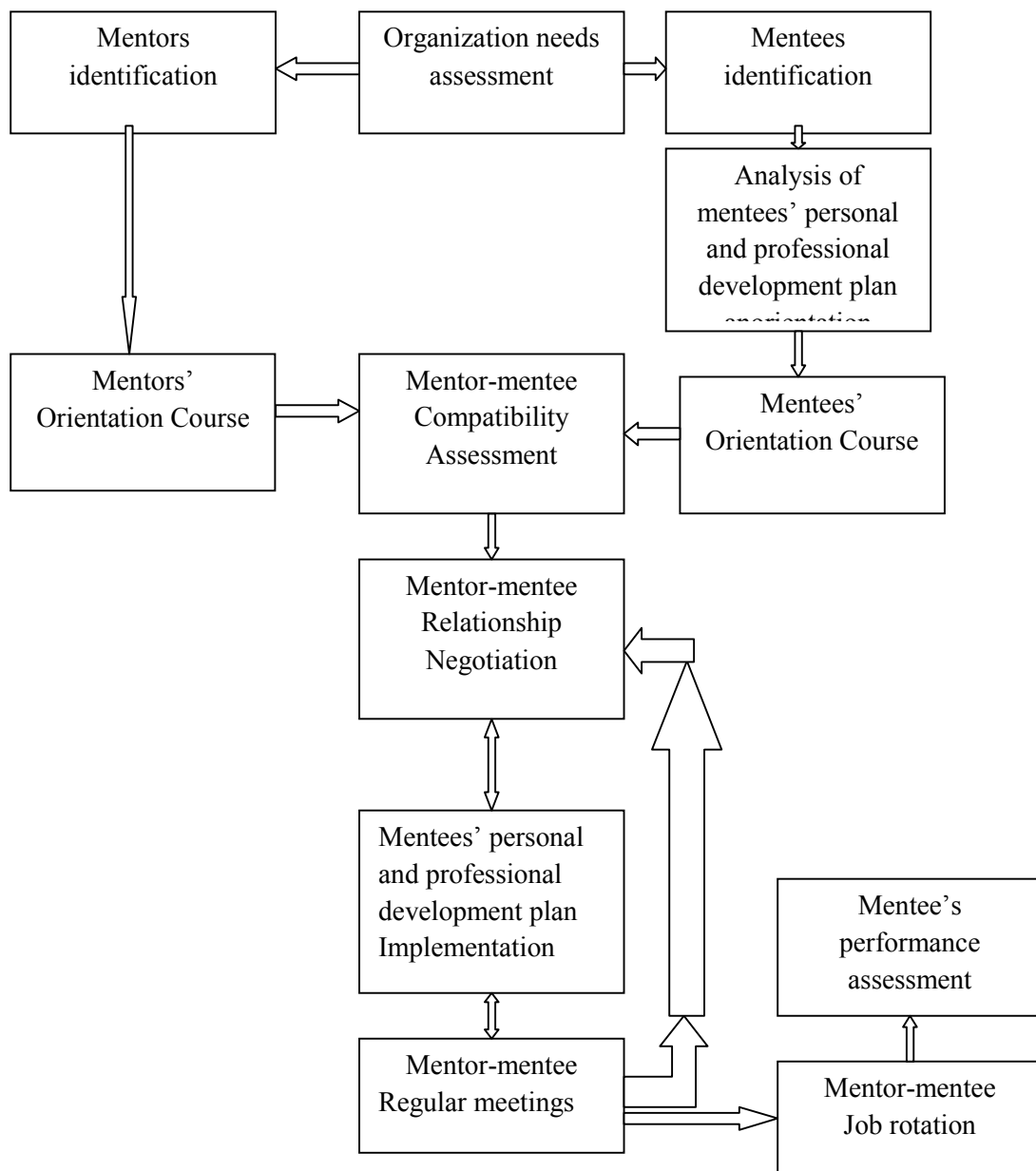


Figure 1: Mentoring program stages

Adapted based on the process described by
Tammy D. Allen, Lisa M. Finkelstein, Mark L. Poteet (2009) *Designing Workplace
Mentoring Programs: An Evidence-Based Approach*, Wiley-Blackwell



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THE NECESSITY OF BUILDING AN EFFICIENT TEAM

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Abstract

Teamwork is the ability of the team to work together effectively, to achieve common goals and it is essential for organizational success. For this reason, organizations are constantly striving to improve team performance. Organizations aim to design, create and support high performance teams, which are able to understand organization's objectives and to contribute to the organizational success.

Key words: team, effectiveness, synergy,

1. Introduction

A team is a community of individuals organized to achieve a common goal who are independent and are identified by themselves and by other observers (people) as a team. Teams are usually created to achieve complex tasks. A team is not isolated, it is part of a system (the organization) and it interacts both with other teams within the organization and with the organization itself. Teams represent for the organization a good way to collect inputs from its members, they enable organizations to be flexible when allocating members to various tasks and projects and also, they allow cross-functional groups to appear.

2. Building a team

Forming a successful team is not an easy task, there are many prerequisites that have to be taken into consideration, like:

- revision of the objectives;
- careful consideration of the environment;
- awareness of the functioning of the team;
- creativity, flexibility and readiness in the face of change;
- tolerance of ambiguity and difference in a team;
- readiness to accept uncertainty with the change;
- synergy.

Synergy, as defined by Catella in 1948 designates characteristics of homogeneous and cohesive human groups. In these groups the members have statutes and specific roles, they

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develop interpersonal relationships and respect norms of behavior. These characteristics underlie the team spirit and make it powerful. Synergy is necessary to achieve the objectives established for routine or special activities in the best conditions. For this purpose, it is necessary for the organization to have an atmosphere of cooperation and understanding, and obtaining and maintaining this environment is the responsibility of the manager (or of the team leader/s).

Competition, one of the basic features of our daily activities, can have positive effects (new ideas, faster accomplished tasks, increased interest in work performance etc.), but also may lead to the division of teams, to actions which undermine the competitors' activity even if they are part of the same team. The leader is the one who must obtain and maintain a balance between cooperation and competition so that the efforts of each individual should aim at achieving the organizational objectives and not personal ones.

A cohesive group is more than the sum of its parts, synergy is what gives value to a group is its ability to overcome even the best individual results of each of its members. Effective groups thrive on dialogue, they solve contradictions through communication in order to reach a common conclusion which will be understood and accepted by all group members. In order to create synergy within a group a leader needs to obtain consensus and should avoid dividing their members into a majority and one or more minorities when analyzing problems and making decisions.

It is well known that putting people together does not mean that they are a team. The process of team building is quite laborious and it should include:

- clarifying the goals and building ownership within the team;
- identifying teamwork inhibitors and removing or overcoming them, or if they cannot be eliminated, mitigating their negative effects on the team.

In order to self-evaluate, a team must use feedback to determine its strengths as a team and its weaknesses. In order to improve its current performance, a team uses the feedback obtained after the evaluation to:

- identifying any differences between the desired or expected state and actual one;
- developing a strategy to eliminate, cancel these differences.

3. Team functioning

There are two fundamental dimensions of functioning of team: task which must be completed and the social factors that influence the relationship between the members and the team seen as a social unit. The main reason for creating teams within organizations is the fact that they can meet organizational goals and objectives better than through individual labour.

If we want to understand what teamwork is, it is necessary to consider the task content, the strategies and the processes used by the team members in order to accomplish it. At the same time, we must bear in mind that teams can either help or prevent their members in addressing various emotional, social problems or other human needs they have.

In order to be efficient, individuals should focus on objectives, should analyze regularly the possibilities to achieve them, the working methods, activity which is called task reflexivity.

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To promote the welfare of its members, the team must consider how they it can provide support for them or how it can mitigate conflicts and determine the general social climate of the group, in other words, social reflection.

The purpose of these analyzes is to provide concrete ways to change the team objectives, the working methods or the social functioning in order to maximize the team effectiveness.

Team effectiveness has three main components:

1. Task efficiency which means the extent to which a team manages to achieve the objectives, the task it has to accomplish.
2. Members' satisfaction which indicates the mental health (e.g. the stress level), the progress and the improving status of the team
3. Team viability which designates the likelihood that team members will continue to work together effectively.

The two aspects of team functioning – the social reflexivity and the task reflexivity affect directly the three main results of a team's work: task efficiency, the mental health of its members and the viability of the group.

Building an effective team is not easy, but it can be done if we respect certain requirements:

- setting clear directions and responsibilities;
- the members should be well informed and trained;
- the operating procedures must be reasonable;
- good interpersonal relations;
- success and failure should shared within the team;
- good external relations.

Clear direction means that the team was given a clear and distinct purpose/objective. The team may be empowered to determine how to achieve the objective, but the team leader or the management board establishes the purpose of the team. Clear direction means that the team's results can be measurable because we know what we want to achieve.

Clear responsibilities mean that each team member understands what is expected from them. Roles must be clear and interesting for all team members. Each individual must be able to rely on other members in accomplishing their roles so that the team can work effectively. Otherwise, one or two team members may feel that they are in fact those who all the work. This is one of reasons why certain people, at first, are reluctant to join a team.

Well informed and well trained members. An effective team will be composed of individuals who have the skills and knowledge needed to carry out the tasks assigned to the team. Each member brings to the team their skills but the sum of all the knowledge and skills will be the force of the team

Reasonable operating procedures. All teams need a set of rules by which to operate. Work teams need a set of procedures for meetings, decision making activities, planning, division of tasks and the progress evaluation process. Fixing and obeying these procedures helps team members to be confident in each other and provides a feeling of comfort when working together.

Interpersonal relationships. Teams are composed of different individuals, each of them coming to the team with a set of personal values. They generate and influence

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relationships among team members and between team members and those outside it (including the organization).

4. Team work benefits or Conclusion

Even if building and managing a team is not a simple process it is worth while since the group effort and results are bigger and better than those of an individual. Teams implement best organizational strategies. Team-based organizations act with more promptitude and efficiency in a volatile environment. Teams work faster and more efficiently when members work in parallel and interdependently, as opposed to the slower pace of individuals.

Thanks to teams, organizations learn (and retain) more efficiently. Even if one member leaves the team the knowledge gained by that individual are stored by the team. The members teach one other during teamwork. Multifunctional teams promote high quality management. Combining the different perspectives of its members the decisions are taken in a more comprehensive framework because the members discuss ideas and decisions about how best to perform an activity. Used properly, diversity leads to high quality decision-making and innovation. Multifunctional teams can suffer changes. The broad perspective offered by these groups enables the integration of various proposals, which gives the opportunity debate s the main assumptions and apply radical changes to work. Team-based organizations promote innovation through the exchange of views.

Organizations can be coordinated and managed more effectively if the functional unit is the team and not the individual. As organizations become more complex and the demands for information processing are becoming more sophisticated, unlike individuals, teams provide integration and association for efficient processing of information within the structures of modern organizations.

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GENERAL ENTERPRISE ARCHITECTURE CONCEPTS AND THE BENEFITS FOR AN ORGANIZATION

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Abstract: Managers need to understand the relationships among information architectures and infrastructures and strategic planning within their organizations. This will enable them to make the best use of technology to support the organization's efforts to accomplish its mission in the most efficient and effective manner.

This paper examines the intent and significance of policies in regard with Information Technology Architectures. The concept of an Enterprise Architecture (EA) is introduced with a focus on using such architecture as an enabler to accomplishing the mission of the organization.

The benefits and costs of an EA are also discussed. Among the topics covered are gaining executive support for an EA, overcoming impediments to developing and implementing an EA and understanding the role of the Chief Information Officer (CIO) in the development and implementation of the architecture. The paper emphasizes the importance of an EA in aligning the infrastructure with the strategic direction of the organization.

Key words: Enterprise Architecture, Chief Information Officer, Technical Reference Model, Standard Profile.

1. Introduction

Managers need to understand the relationships among information architectures and infrastructures and strategic planning within their organizations. This will enable them to make the best use of technology to support the organization's efforts to accomplish its mission in the most efficient and effective manner.

This article discusses the history of Information Technology (IT) and how systems have evolved over time to the current condition in which most enterprises need Enterprise Architecture (EA) to understand the relationships of all of the pieces. Because of the complexities of both the business operations and the technology supporting them, it is difficult to clearly understand how everything fits together without an EA. It would be like trying to build or maintain any complex structure without the benefit of a blueprint that shows the interdependencies.

Let us imagine building a large construction without having an architecture. One such effort actually did take place - it is called “The Winchester House”[1]. Does this sound familiar? Does this sound a little like the way we acquire and build information systems? Many systems have evolved over the years with very little direction and control by the owners, managers, and users of the systems. An EA provides the structure and the discipline to correct this unacceptable situation.

The aim of this paper is to allow the potential readers to 1) derive the management responsibilities associated with administering the laws relative to the development and implementation of agency architectures and infrastructures, 2) explain the significance of

an EA in aligning the infrastructure with the strategic direction of the organization and 3) recognize the barriers to successful implementation of an EA and determine ways to overcome them.

We will discuss the ambiguity in terminology and provide some basic definitions of a few key terms as they are used in this article. You will become familiar with pertinent laws, policies, and directives that specifically address EAs. We will take a look at the role of the CIO and the challenges that a CIO must face in order to meet her/his responsibilities with regard to an EA. Finally we will begin to identify the benefits that an EA brings to an enterprise as well as reflect on the difficulties that exist in managing an EA.

2. Definition of Terms

One of the difficulties in discussing an EA is the lack of consistency in terminology. This is symptomatic of the fact that this is a very immature discipline. Often the same words are used with different meanings or different words are used to have the same meaning. In this respect, here are some confused terms: **Framework**, **Model**, **Infrastructure** and **Architecture** which are often used interchangeably. However they have very specific meanings.

- **Framework:** As its name implies, the framework is actually a way to frame the construct. It provides structure in the way that a template or form provides a format for providing information or data. There are no standard frameworks for EA's in existence today. However there are several initiatives to begin the tedious and difficult task of developing the frameworks.
- **Model:** A representation of the information. For example a model airplane represents an airplane. It is not the actual airplane but a representation of one. With EA's these models are not currently as well defined or widely accepted as this example because, in terms of maturity, this discipline is still in its infancy. However, there are some models that are gaining wider acceptance.
- **Infrastructure:** Everything that is required to support the "business". In this article, "business" is used to mean the reason that an enterprise exists. The infrastructure includes the hardware, software, telecommunications, security, standards, training, people, facilities or whatever is necessary to "get the job done".

So then what exactly is an architecture? An architecture is a slightly more abstract concept. According to [2] architecture is defined as "*A structure of components and their relationships, which evolve over time and include: principles and guidelines*". The definition is slightly refined as "*the fundamental organization of a system embodied in its components, their relationships to each other, and to the environment, and the principles guiding its design and evolution*" [3].

An architecture is the basic construct for describing a concept or an idea. This can be better explained through the use of an analogy. Let's analyze the architecture of telling time. If one understands the basic architecture of 24 hours in a day, and 60 minutes in an hour, 60 seconds in a minute, then time can be expressed and understood using many different technologies (analog, digital, etc.).

However to a small child who does not yet understand this architecture, noting that the big hand is on the 10 and the small hand on the 2 would not have meaning. An architecture identifies and describes the relationships. The components of the architecture of time are the hours, minutes, seconds, days, weeks, months, or whatever we define them to be. If we changed those relationships and based time on something other than the solar

calendar, we could still tell the time but the context would change accordingly. For example if we used the lunar calendar all references to a day would double and we would redefine a year and so forth.

3. Laws, Policies and Directives

The Clinger-Cohen Act requires “*A complete Information Technology Architecture (ITA) that provides an integrated framework for: evolving or maintaining existing IT, acquiring new IT and achieving the agency's strategic and IRM goals*” [4]. With the passing of the Clinger-Cohen Act of 1996, US Federal Departments were required to use an Information Technology Architecture (ITA) in order to ensure alignment of the technology with the needs of the business.

Note that the Clinger-Cohen Act required the use of an Information Technology Architecture (ITA) and it specified what the ITA must insure. However, the Act did not define an ITA and there was certainly a wide range of speculation on what exactly would be required in order to be compliant with this law.

In 1997, the US Office of Management and Budget (OMB) put out a memo that provided some very loose guidance about what must be included in the ITA in order to meet the intent of the Clinger-Cohen Act. OMB Guidance on Enterprise Architectures stated that “*Agencies must document and submit their initial enterprise architecture (EA) to OMB and submit updates when significant changes to the EA occur*” [5]. This guidance was later revised and incorporated into OMB Circular A-130 [6].

Again, note that the Clinger-Cohen Act referred to the Information Technology Architecture rather than the enterprise architecture so naturally the focus was placed on technology by most of the organization. However the intent of the law was to improve enterprise wide performance by integrating technology most effectively with the optimized processes. This really requires an enterprise architecture that includes the explicit descriptions of the processes and information flows as well as the supporting applications, data and technology. For this reason, the more appropriate term used today is enterprise architecture rather than information technology architecture.

The OMB memo requires documenting the relationships but it does not specify the manner in which this is done. It does not constrain the media to paper or text only. Therefore any media may be used and graphics may be more descriptive and precise than text only. Other media than paper may lend itself better to keeping the information current and readily available to those who need it in a timely way.

4. Enterprise Architecture: Definition and Components

4.1. Enterprise Architecture: A Definition

The term Enterprise Architecture is defined as “*The explicit description and documentation of the current and desired relationships among business and management process and information technology*” [6].

Why would you care about the current or desired relationships? Is the desired relationship the same as an end state? Imagine yourself in a large shopping mall trying to find the movie theatre. You look at the directory and find the theater. Good, so let's proceed to the theatre. But don't you need one more important piece of information? How can you get there from here unless you know where you are? You always find the red dot that says “you are here” on the mall directory to give you a point of reference. Only then

can you plan your trip to get to where you want to go. It is the same with the enterprise architecture. You must know and understand the current as well as the target relationships so that you may formulate a plan for getting there.

One question that you might be asking about now is what is meant by the enterprise. The enterprise is whatever you define it to be. It provides a specific purpose or mission. For instance it could be the Ministry of Defense with the mission of providing national defense or it could be one of the services within defense such as the Army, Air Force or Navy.

It need not be tied directly to an organization. Ideally each enterprise architecture at the localized level would be consistent with the architecture for the larger enterprise in which it must fit or interact. This requires that the architects understand the larger architectures and ensure the proper level of congruence. For example, if you were the architect for a suite of rooms in a large building, you would need to ensure that your architecture was consistent with the rest of the building and the building architect would need to ensure consistency with the neighborhood buildings, city and county.

4.2. Enterprise Architecture Components

There are five basic components that make up the enterprise architecture [6]:

1. Business Processes;
2. Information Flows and Relationships;
3. Applications;
4. Data Descriptions;
5. Technology Infrastructure.

The manner in which these are presented is not specified. The memo simply states that these components must be included. The hierarchy of the components is not prescribed except for the business process component which determines what information is needed. Think of these as the basic categories of ingredients of the EA.

The *business processes* describe what it is that the enterprise does. The *information flows and relationships* describe what information is needed to perform the business processes. The *applications, data* and *technology* describe the applications, data, and technology needed to provide the appropriate flow of information to support the business processes. The enterprise architecture must also include a Technical Reference Model and a Standards Profile.

4.3. Technical Reference Model (TRM)

So what is this technical reference model? According to OMB A-130, TRM “*Identifies and describes the information services used throughout the agency*” [6].

A better way to understand this notion is to make an analogy and view the TRM as a restaurant menu. The menu categorizes food groups and the TRM categorizes information services. For example if I hired a restaurant to cater a banquet, I would likely meet with the caterer and decide what types of food that I wanted at the banquet. I might include a five course meal, with appetizers, soup or salad, main entrée, dessert, and beverage. I might instead include only appetizers and beverages. I might have only finger food. I could have cold cuts. Whatever I decide becomes my reference model.

The TRM for information systems identifies information services such as data interchange or human computer interfaces. You may wish to browse through a couple of examples of TRM’s, such as the Federal Enterprise Architecture Technical Reference

Model [7] and the TRM for the Department of Defense [8] to get a feel for what type of information is included.

4.4. Standards Profile (SP)

The final component identified in the OMB memo as being part of the EA is the standards profile. Reverting back to the restaurant menu analogy, if the TRM is the categories of food groups, the standards profile (SP) is the list of food options within each group. For example if for my banquet I decided that I would include finger food, the standards profile might include a vegetable tray, chips and dip etc. The EA standards profile defines a set of standards that supports the services articulated in the TRM. It establishes the minimum criteria needed to specify the technology that supports the business function.

An example of the standards profile is the Department of Defense's enterprise wide standards profile, called the Joint Technical Architecture [9]. Does the use of a standards profile encourage/discourage open systems? Let's think about this. At one end of the spectrum, a completely open system could accommodate any technological solution to a problem. On the opposite end of the spectrum a propriety system would identify a specific technological solution to the problem. By identifying standards we are constraining the total possible solutions to a subset that conform to the specified standard.

The question then is does this encourage or discourage open systems? In theory one might say it discourages open systems because it eliminates any solution that is not covered by the standard. However, in reality it should encourage open systems because it is not feasible from an economic or efficiency standpoint to accommodate all possible solutions or designs that might satisfy a given requirement. However by providing a standard, there may be many specific designs that comply with the standard. Such standardization is part of our daily lives and the standard must change as the need arises. Thus the standards profile is not static and it is constantly changing as the needs change and the industry and market demands.

5. Role of the Chief Information Officer (CIO)

Now that we have discussed the enterprise architecture, let's take a look at the role of the CIO regarding the EA. The Clinger-Cohen Act, in sections Sec. 5125 b2 and 3, is very specific in assigning the responsibility of developing, implementing and maintaining the enterprise architecture to the CIO. Regarding EA, the CIO should [4]:

- Develop, maintain, and facilitate the implementation of a sound and integrated IT architecture for the executive agency;
- Promote effective and efficient design and operation of all major information resources management processes;
- Promote improvements to work processes.

This is indeed a tall order. What skills the CIOs would require? Should the CIO be business savvy (should the CIO understand the business of the organization)? Should the CIO be technically savvy (should the CIO understand technology and be versed in the state of the art capabilities)? Ideally the CIO would be business and technically knowledgeable.

In fact to be most effective some would say that the CIO should be business savvy first. In reality the CIO will probably be stronger in either the business or technical area but not both. How might this deficiency be supplemented? You could staff the CIO office with people who are competent in each area. If the CIO is very technically capable but lacks a

good breadth of understanding of the business of the organization, he could hire a deputy who fills this void, someone who is very connected with the business side of the organization.

6. Problems Addressed by Architecture

Now that we have discussed what an EA consists of and who is responsible for managing it, let's look at why you would want to bother with it at all. What value does it add and what problems is it addressing?

Each of us could probably identify many uses for an EA. Based on my research I have focused on three problems that I believe an EA can help to solve. Each is addressed in further detail next. Enterprise Architecture can help solving the following problems into an organization [10]:

- Lack of guidance for decision-making;
- Inability to manage change;
- Inability to communicate the organization's goals.

As technology increases in complexity and as managers struggle to be more and more responsive conflicting requirements to meet the demands of the business, better and timelier information is needed to make the best decisions in a responsive time frame. Change today is the norm rather than the exception. Flexibility to respond effectively to the changes is critical for survival. Finally and in my opinion most importantly, the EA provides a mechanism to improve communications. It becomes quite a challenge to communicate across domains and from various levels and perspectives. The EA can help to focus the point of a discussion by ensuring that everyone is "on the same page".

6.1. Lack of Guidance for Decision-making

Without an architecture the organization will not have:

1. An enterprise-wide conceptual framework for planning I/S development;
2. A way to measure existing applications against upgrades or changes;
3. A framework for I/S to be developed and implemented cost effectively;
4. Standards to measure conformance of COTS in make or buy decisions;
5. A way to prioritize projects within a specified time-frame.

How can an EA help with decision making? Architecture provides the framework for ensuring that enterprise-wide goals, objectives, and policies are accurately reflected in decision-making related to building, acquiring or changing information systems. In your organization is there always enough funding to resource every requirement? If not how are priorities set? How does the senior management ensure that they have current and relevant information upon which to base strategic and tactical decisions? Could a well-documented EA provide the information? You may say that it is too difficult to develop the EA. Why not just research and acquire the information as it is needed? This would certainly appear to be a viable alternative to having an EA or is it?

In a small enterprise with a relatively simple operation in terms of interdependencies I would agree. However in a large, complex operation, acquiring the needed decision making information can be very labor intensive. Many individuals may have a need for this information on a regular basis, necessitating each individually seeking the information repeatedly as required. A single individual or group of individuals would only have knowledge about some subset of information systems at any point in time. However it was much too large and complex for anyone to fully understand the entire

enterprise information system and be able to explain the relationships of each application and data description to the business process that it supported.

Therefore decisions are made based on limited knowledge or decisions are delayed until the information could be gathered. Neither approach is without considerable risk. Basing the decision on the wrong or incomplete information could have disastrous results but a delay when action is needed can also have many adverse affects. Decisions are often made by a consensus of several key managers each bringing different perspectives and concerns for consideration in the process. Without an EA each view is usually understood only by the person making that point. However with the EA, each view is presented and modeled so that it is possible to better appreciate the various issues for consideration that should be factored into the decision.

6.2. Inability to Manage Change

In the absence of an architecture an enterprise:

1. Cannot effectively deal with change;
2. May not be able to understand the impact of change;
3. May not accurately reflect the status of information systems before and after change.

A key issue in dealing with the high rate of change in today's complex information environment is understanding the effect of any given change in the context of the enterprise as a whole, rather than in terms of its components. Each person (organization) could understand the impact of the change from a very narrow view only. This made it very difficult for the decision makers to get a complete and accurate assessment of the impact of the change as a whole.

What they have at best is a sense of the various concerns expressed from a specific view of the change being proposed. The sum of those views does not necessarily equate to the impact on the entire organization. A documented EA that could enable improved communications of the impacts of these changes from the organization's perspective.

6.3. Inability to Communicate the Organization's Goals

In the absence of an architecture an organization:

1. Will develop systems independently and possibly duplicate systems;
2. Will not adequately communicate about the linkages between their information systems;
3. Will miss opportunities to share data;
4. Will have different definition and different naming of same data or will have the same naming of different data;
5. Will not have systems that satisfy organizational requirements.

Lack of an architecture leads to information systems with no clear picture of the interrelationships among the systems. In systems engineering, one learns early that optimizing the performance of each individual system component, will not ultimately result in optimum overall system performance. The optimal system performance is the result of a prudent mix of optimization of each component. In order to achieve the right mix, the experts of each subsystem must be able to communicate internally with the other experts.

However the benefit of communications extends even beyond the internal gains recognized. Often the EA is useful in communicating externally to those who need to interact with the enterprise. For example, you could communicate a funding shortfall

through the use of the EA and thus be able to attain the necessary funds because you will clearly show the direct linkage of expended funds for technology and enhancements to mission capabilities.

7. Impediments to Achieving a Solid Enterprise Architecture

Now that we have discussed briefly what an EA is and what problems it is intended to solve, let's take a look at some of the reasons why it is difficult to accomplish. Here are some of the obstacles that must be overcome [11]:

- Awareness/Recognition/Acceptance by top management;
- Commitment of resources to EA planning;
- Unfavorable corporate culture;
- Political differences regarding responsibilities for EA planning;
- Lack of credibility of planning leaders;
- Inexperience with EA planning;
- Resource shortages and large applications backlog.

The most important condition for success is the support of top management. This is basically an educational process. If top management is not supporting the EA, in all likelihood they do not recognize its benefits. You must convince them through briefings, examples, external consultants, conferences, journal articles or whatever works best with your particular situation. Along with support comes the commitment of resources.

When managers are referring to the EA in terms of "you" and "yours" versus "us" and "our" they are not committing. Organizational culture can also be an impediment. The culture may alienate the people who must be participants in the development of the EA.

The effort to develop an EA may be perceived as "solving world hunger" and the EA planners may lack credibility. This is evidenced through statements like "that's not how it's done here" or "you are living in an ideal world and this is reality". There are some additional obstacles in order to develop a viable Enterprise Architecture:

- Finding the "best" methodology;
- Educating information systems personnel in new technologies;
- Uncertain rate of return;
- Expecting immediate results;
- Fear of loss data control/ownership;
- Benefits difficult to measure
- Inaccessible or uncooperative users and delegation.

There are always long debates over the best methodology. The solution is just pick one and get on with it, because all methodologies can work in a given situation. Some may be better than others but spending too much time trying to decide on the best one is usually non-productive. The EA may be viewed by some as a threat. This may be evidenced by statements like, "if it isn't broke, don't fix it".

Many of the obstacles discussed here are managerial in nature versus technical. These are very difficult to overcome but there are successes to learn from. It is important to note is that the EA probably will not be perfect the first time, because speed should take precedence over the depth of the analysis. That is not to say that we should sacrifice completeness and quality of the EA.

We should try to put out the best we can in the shortest time possible. It will not have all of the detailed information needed nor will it be inclusive of every scenario within

the enterprise. However it will get things started. The details that may have been overlooked or not ready for inclusion at first can be added to the subsequent versions.

In conclusion, when trying to advocate and eventually develop and implement an Enterprise Architecture, we have to take into consideration the following three most important issues. How would EA help to improve government service to citizens and businesses and how could EA help you do your work better or easier. Why is it difficult to gain support from the organization in developing and implementing Enterprise Architecture and how can resistance be overcome. And last but not least, think about your personal answers to those questions: should the CIO be business savvy first and technically knowledgeable second or the reverse (and why); can a technical expert be an effective architect without having any knowledge of the business; can a business expert be an effective architect without any knowledge of the technical considerations.

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FACTORS INFLUENCING AN ENTERPRISE DYNAMICS
IN THE CONDITIONS OF ITS PARTICIPATING TO THE
DEVELOPMENT OF MILITARY CAPABILITIES

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Abstract:

The company, as a participative part active in the market economy, has as main goal making profit. In the case of company connection to the military area, many of the competition rules acquire new accents that are not in its main activity in the market. It is possible that some of the company's objectives, even its strategy on different time horizons, may acquire new meanings that were not originally anticipated. For this reason it is good to know in-depth the relevant variables that determine a stable and sustainable dynamic of the company in terms of contact and integration in the process of implementation, operation and demobilization of military capabilities.

Key words: capabilities, dynamic models, outputs, inputs

1.Introduction

Developing military capabilities involves a highly complex process, given the nature of the process itself and the dynamics of development. Research, planning, the development itself, the use, recovery and ultimately the demobilization of the military capability involves bringing together the elements of competent military authority and of the market economy players, whether state owned or private.

Even if the picture is extremely complicated, sometimes with gray or dark areas due to socio-economic and political realities specific to the contemporary world, we can try to model the dynamics of companies that contribute, in varying degrees and in different phases, to achievement of military capabilities.

The company, as a participative part active in the market economy, has as main goal making profit. In the case of company connection to the military area, many of the competition rules acquire new accents that are not in its main activity in the market. It is possible that some of the company's objectives, even its strategy on different time horizons, may acquire new meanings that were not originally anticipated. For this reason it is good to know in-depth the relevant variables that determine a stable and sustainable dynamic of the company in terms of contact and integration in the process of implementation, operation and demobilization of military capabilities.

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2. Variables determining company dynamics

If we appeal to the theory of economic cybernetics, the company can be seen as a complex dynamical system in Kalman sense. This approach allows the identification of all elements of the triad input - status - output. They correspond to the inflows (decision or control variables), the system dynamics (state variables) and output flows (outcome variables). In this way, for each firm involved in the development, operation and demobilization of military capabilities, different models known in economic cybernetics and economic dynamics may be applied, to determine their evolution over different time horizons. Also, we may follow the more accurately the characteristics of the evolution, such as the optimal trajectories and the conditions where that development is possible, taking into account the influence of environmental factors, their dynamics over time and the related expectations.

This approach requires the use of a dedicated mathematical apparatus (introducing the functional goal) by which we may determine the company or group of companies the performance as a dynamic system along trajectories of evolution generated by dynamic equations and restrictions of the following nature:

- political, through national and international legislation or lobbying related to taxes and subsidies on goods and services that the company provides for the generation of military capabilities;
- economic (regarding the resource allocation), the predictions made on input variables which can not be controlled by the company: input and output prices – resulting from the banking (lending rate), capital markets (equity prices), exchange market (exchange rates), changes in domestic and export demand for the business' products and which can have a major influence on the processes in the domain of military capabilities.

In Figure 1 is outlined the business interactions with key interest groups within it and beyond. Company dynamics and therefore the optimal development of the company is subject to all interactions between the various interest groups, reflected in the dynamic models through the objective function, in the restrictions or in the structure of the dynamic equations when we conceptually divide the economic and sociological models when we make reference to items related to other aspects (policy, diplomacy, etc.).

In the beginning we shall address the internal elements of the company: management, employees and technological structure. These elements are themselves complex systems that can be discussed separately, but in this paper I will treat them as well-defined entities.

1. **Company management** is done by the management board, which may include the Chief Executive Officer, Chief Financial Officer, Chief Operational Officer, Chief Technological Officer. They are not the owners of the company, but they participate operationally in decision making with the aim of the company development, improving the company reputation, maintaining the company's market value, reducing the likelihood of acquisition by competitors or the business bankruptcy. As objective function we may use the maximization of the development rate (infinite horizon) expressed as the discounted value of the turnover, with the restriction of providing a minimum level of dividends to the shareholders or maintaining a minimum level of earnings per share. This objective highlights the consistency of action between the operational management (managers) and

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shareholders strategy. Delegating the management competencies towards managers is done by limiting their range of action through:

- limited ability to perform company expansion-related investments by setting the restriction of an upper limit to the capital growth rate of;
- planning the production capacity based on the available personnel and the personnel training rate, as well as depending on the assets adjustment costs.

A special discussion may be developed depending on the type of ownership - company is private or state-owned, generating a specific set of management skills.

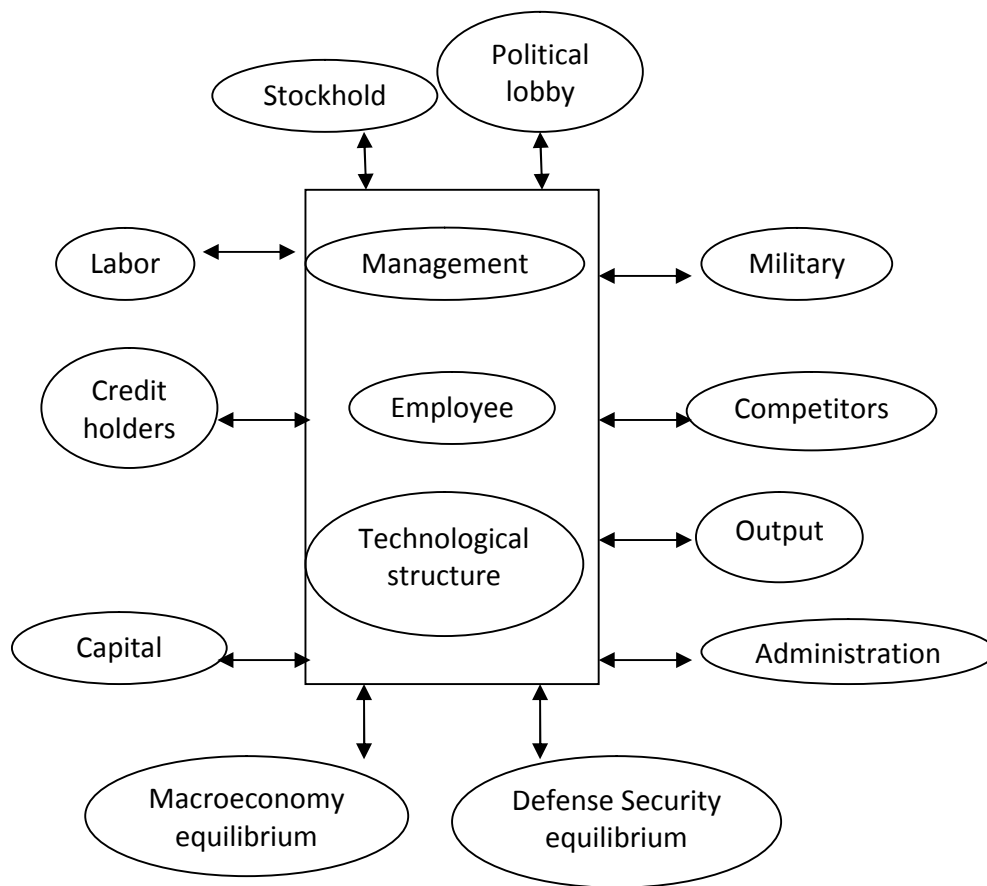


Figure 1

2. **Employees** have a dual role in any variant for the company's organization. First of all, they are one of the most important factors of production, known by specifying the production function. Secondly, the employees are directly or indirectly a decision making factor, though the trade union power.

The implications of this approach are specified in dynamic models either by restricting the rate of dismissal or by the functional objective of maximizing the discounted income flow for each employee. There are also different approaches regarding the organizational form of property, public or private.

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3. **The technological structure** is relevant for the dynamic model of the firm in terms of the degree of replacement of old equipment with new one, being the drive belt of technical progress. The effect of the technical progress is highlighted in the model by the operating unit costs which show that newer generations machines operate at a lower cost than the older ones.

The internal structure of the firm can be enhanced with other relevant elements, but those which were mentioned are the most relevant, by themselves and their role, through the variables describing their quantitative and qualitative influence on the firm dynamics. The company's external elements are described as follows.

4. **The labor market** is a complex of elements with a highly dynamic evolution, characterized by a multitude of features. The company is heavily influenced by its geographical position both by what is happening on the labor market and by its own employees. However, it is important to detect the relevant variables that affect the firm's dynamics in relation to the labor market. Thus, under conditions of perfect competition in the labor market, the company's marginal labor productivity must be equal to the real wage rate imposed on the labor market. In monopsony conditions relative to the labor factor of production, the firm decides on the nominal wage rate and the employment or dismissal rate. Of course, each of the variables stated above are based on another set of relevant measurable variables. Also, as I have mentioned relative to the company's employees, particular cases of ownership of the company, public or private, may be discussed.

5. **Creditors** are a group which supports the company's external interests, but do not participate directly to its management. They impose their interests through lending conditions in order to minimize the risk related to loans recovery and interests, as services related to the debt owed to them by the beneficiary company.

In dynamic models of the firm, these conditions are introduced through:

- the interest rate;
- the maximum limit imposed on credits, limits depending on: investment expenditures, the social capital, the cash flow.

The interest rate can be considered constant, based on naive expectations or introduces through anticipatory mechanisms: adaptive forecasts, rational forecasts, etc.. The maximum credit limit imposed can not be exceeded, otherwise the company would move to another risk category, but there are approaches in which the company's risk profile changes over time.

6. **Capital goods market** (providers of assets) is introduced into the dynamic models of firm through the characteristics of this market and takes into account the perfect or imperfect competition. The analysis of this element is performed in competitive market conditions. For the firm's dynamics, the implications of this approach are reflected in the cost of capital, which shows that its structure depends on:

- the technical depreciation rate, considered in its simplest form, as the rate of recovery;
- the interest rate for investments loans, which reflects the connection with the financial market;
- the inflation rate.

In addition we may consider also the impact of the technical progress, with effects on the average life cycle of the capital goods. Both in perfect and imperfect capital goods

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market conditions, achieving the optimal scale of production capacities generates inherent cost related to the adjustment mechanisms, grouped into two categories:

- Exogenous adjustment costs, through the firm's demand for investments (which is endogenous);
- Internal adjustment costs, imposed by correlations with the size of short-term inputs such as labor, energy, raw materials, etc..

The effect of the characteristics of this market can be characterized by showing the marginal growth rate of these costs.

Another relevant feature that can influence the company's dynamics and which has to be taken into consideration is the technical progress, incorporated or not into the capital goods, with effect on the equipment replacement policy. These interactions reflect the close connections with the company's technological structure.

7. **Shareholders** are considered as dominant makers, by their organization in the Annual General Meeting. Their objective is to maximize the firm's value, defined as the discounted value of the flow of dividends or the current value of cash flow for an infinite time horizon. In case of a finite horizon, the functional objective will include the final component which, in the long term, evaluates whether the shareholders objectives for the predetermined time horizon has been reached. In order to achieve consistent and realistic dynamic models it is very important to specify the form of the functional objective. Recent studies have shown that there is a strong focus on the impact of the shareholders group structure change, as well as of the situations in which new shares are issued on firm dynamics.

8. **Political lobbying** is not usually discussed in the economic studies and works. One reason is that it is a variable very difficult to define, it is quite elusive, but at the same time it represents the interests of a privileged group of people who have access to very high level decision areas. Especially in case of military capabilities development, this political lobbying can strongly influence the firm's dynamics, as it modifies the functioning of the market economy laws. The company may introduce higher risk factors when engaging in providing military capabilities due to the higher volatility of placing the goods and services it produces.

9. **Military agencies**, regardless of their areas of competence, are formidable players in what concerns the production of goods and services in the field of security and defense. They decide legally, under the strong influence of political lobbying and government administration, what is necessary, the quantity and quality of defense resources. These entities often use special laws which often bypass or subjugate the laws of market economy, which increases the risks that can be dynamically shaped company.

10. **Competition** is one of the defining elements of a market economy. It is very important to achieve an accurate substantiation of the dynamic microeconomic models of the firm by identifying the response functions of the company and its competitors. Many specialized studies discuss optimal control models which are developed by expanding marketing models regarding the behavior of competitors. These marketing models influence at their turn the market through pricing and advertising policies. An interesting approach is given by the Kimball model applied to two companies, a situation known as a duopoly. The company's reactions to the competition's policy depend in a crucial way on the completeness of the information held each other:

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- If the information is complete, the reaction will be "open loop control" type, generating its own optimal policy as action program for the time horizon considered;
- If the information is incomplete, the reaction will be of "feedback" type, ie a closed loop reaction.

In relation to the completeness of information, we may continue the analysis using the model Inada, representing the dynamic model under uncertainty.

All the above are also strongly influenced by specific actions of the company in the production of defense goods and services.

11. **The output market** is addressed by the microeconomic theory, consistent with the mechanism of demand - price, considering the company's market position, the existence of perfect or imperfect competition, the monopoly or oligopoly situation. Another approach related to the output market focuses on the company's ability to actively influence its output demand, opportunities related to the company's promotion models, the price policy, the product policy and the distribution policy. Optimal control models shows the optimal strategies aimed at changing the firm's product demand curve, summarized in the advertising expenses. We may use the "diffusion" models, feed-back type models "response sales" reflecting the decreasing effectiveness of advertising expenditures overtime. In the Nerlove and Arrow model, the indirect effect of advertising on sales costs by increasing the "goodwill value" is outlined. However, we must introduce here some restrictions related to the advertizing specific to the security and defense areas. If the political lobby, the military and government agencies require it, the firm must revise the above mentioned policies due to secrecy restrictions related to the multitude of operations, both of economic and military nature.

Another approach may be based on the demand forecasting models, taking into account the fluctuations in the business cycles and in the cycles deriving from the military and government agency documents that are made public or that which the company may have access through security certificates. This approach highlights the impact of these cycles on the investment policy and the personnel policy of the company.

12. **The government administration** influences the business strategy through government tools of fiscal policy nature. The variables that appear in the company's dynamic models are outlined by the taxes the firm must pay, as well as through subsidies and grants to which the firm may have access.

The main factors that characterize the fiscal policy are:

- the tax rate for different categories of taxes: profit tax, tax on capital goods (property), tax on dividends;
- the tax treatment of depreciation and interests on loans;
- the tax facilities for the reinvested profits or laws regarding a special case of accelerated depreciation of capital investment goods from new generation of technical progress.

In regard to the company's subsidies and grants, we can say that they can be included in the dynamic model with a different weight when involved in making military capabilities than when in the normal participation in the market economy with the purpose of producing civilian purpose goods and services.

13. **Macroeconomic conditions** influence the business strategy through the tax system, through interest rates, exchange rates, the average (or the minimum) wage rate, the discount rate, rates generated through dynamic balance, etc.. In a market economy, we

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have to take into consideration also the role of inflation, expressed as the expected inflation dynamics. All this information is derived from dynamic macroeconomic models and the experience of dealing with the military. They are inputs outside the firm's control, having a decisive influence on its optimal development policy through their trends and also through the quality of the anticipation of these trends, considering the long-term goal. Another issue concerns the firm's confidence in the predictions made by the government administration. Introducing inflation in the company's dynamic models is a complex issue and there are models that incorporate the inflation through the price dynamics, the changes in the stock value of the capital goods, making the differentiation between the accounting amount and the actual value induced by inflation, etc. Another dynamic macroeconomic equilibrium factor affecting the firm's growth is the aforementioned cyclical nature, induced by the short, medium or long term trends of the main macroeconomic indicators. Their effects occur with certainty in the company's evolution. Thus, in a period of economic recession, the reduced consumer demand will likely affect the sales volume, leading to stock increases and property losses through asset immobilization. In the opposite direction, economic growth induces at the microeconomic level investment opportunities for the company growth. These influences are illustrated through a dynamic model where investments are measured relative to the macroeconomic growth rate of investments.

14. **The security environment balance** also influences the dynamic model of the firm in a paradoxically opposite way than the macroeconomic factors. If the company will be involved in the development of a military capability, existing conflicts may accelerate its economic success by increasing its output. There are many examples of companies that have thrived and continue to thrive through the interaction with the military sector. Also, the company may also benefit from state of peace achieved at a level of security environment equilibrium caused by a large number of existing military capabilities.

3. Conclusion

The proposed subject of this paper is particularly sensitive. It addresses an area in which the company's evolution doesn't always take place in the spotlight, in many occasions being even classified. Yet by highlighting the company's interactions with the environment in which it evolves leads to a picture of great complexity on the problem of the dynamic models in the company. For researchers and analysts concerned with increasing the performance of companies that contribute to military capabilities development it would be interesting to improve dynamic models in use today, such as: the Hall - Jorgenson model, the Lesourne-Lebane model, the Ludwig model, the Van Hilten model. They may be the starting point for a better understanding of the behavior of the economy in general and in order to foresee events that can lead to crisis.

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**SECURING IT NETWORKS WITH ISMS FAMILY OF
STANDARDS (ISO 27001 SERIES)**

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Abstract:

An organization's information is dependent upon information and communications technology. This technology is an essential element in any organization and assists in facilitating the creation, processing, storing, transmitting, protection and destruction of information. Where the extent of the interconnected global business environment expands so does the requirement to protect information as this information is now exposed to a wider variety of threats and vulnerabilities.

International Standards for Management Systems incorporates the features on which experts in the field have reached a consensus as being the international state of the art. Through the use of the Information Security Management System (ISMS) family of standards, organizations can develop and implement a framework for managing the security of their information assets and prepare for an independent assessment of their ISMS applied to the protection of information, such as financial information, intellectual property, and employee details, or information entrusted to them by customers or third parties.

Key words: information, networks, protection, risks

1.Introduction

All information held and processed by an organization is subject to threats of attack, error, nature (for example, flood or fire), etc, and is subject to vulnerabilities inherent in its use. The term information security is generally based on information being considered as an asset which has a value requiring appropriate protection, for example, against the loss of availability, confidentiality and integrity. Enabling accurate and complete information to be available in a timely manner to those with an authorized need is a catalyst for business efficiency.

Protecting information assets through defining, achieving, maintaining, and improving information security effectively is essential to enable an organization to achieve its objectives, and maintain and enhance its legal compliance and image. These coordinated activities directing the implementation of suitable controls and treating unacceptable information security risks are generally known as elements of information security management.

As information security risks and the effectiveness of controls change depending on shifting circumstances, organizations need to:

- a) monitor and evaluate the effectiveness of implemented controls and procedures;
- b) identify emerging risks to be treated; and
- c) select, implement and improve appropriate controls as needed.

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To interrelate and coordinate such information security activities, each organization needs to establish its policy and objectives for information security and achieve those objectives effectively by using a management system.

An ISMS (Information Security Management System) provides a model for establishing, implementing, operating, monitoring, reviewing, maintaining and improving the protection of information assets to achieve business objectives based upon a risk assessment and the organization's risk acceptance levels designed to effectively treat and manage risks. Analysing requirements for the protection of information assets and applying appropriate controls to ensure the protection of these information assets, as required, contributes to the successful implementation of an ISMS. The following fundamental principles also contribute to the successful implementation of an ISMS:

- a) awareness of the need for information security;
- b) assignment of responsibility for information security;
- c) incorporating management commitment and the interests of stakeholders;
- d) enhancing societal values;
- e) risk assessments determining appropriate controls to reach acceptable levels of risk;
- f) security incorporated as an essential element of information networks and systems;
- g) active prevention and detection of information security incidents;
- h) ensuring a comprehensive approach to information security management; and
- i) continual reassessment of information security and making of modifications as appropriate.

The ISMS family of standards is intended to assist organizations of all types and sizes to implement and operate an ISMS. The ISMS family of standards consists of the following International Standards, under the general title *Information technology — Security techniques*:

- ISO/IEC 27000:2009, *Information security management systems — Overview and vocabulary*
- ISO/IEC 27001:2005, *Information security management systems — Requirements*
- ISO/IEC 27002:2005, *Code of practice for information security management*
- ISO/IEC 27003:2010, *Information security management system implementation guidance*
- ISO/IEC 27004:2009, *Information security management — Measurement*
- ISO/IEC 27005:2008, *Information security risk management (Second edition)*
- ISO/IEC 27006:2011, *Requirements for bodies providing audit and certification of information security management systems*
- ISO/IEC 27007:2011, *Guidelines for information security management systems auditing*
- ISO/IEC 27008:2011, *Guidelines for auditors on information security management systems controls*
- ISO/IEC 27010:2012, *Information security management for inter-sector and inter-organisational communications*

An organization needs to maintain and improve the ISMS through monitoring and assessing performance against organization policy and objectives, and reporting the results to management for review. This ISMS review will allow evidence of validation, verification, and traceability of corrective, preventive and improvement actions based on the records of these monitored areas, including the monitoring of information security controls.

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2. The ISMS family of standards description

The ISMS family of standards consists of inter-related standards, either already published or under development, and contains a number of significant structural components. These components are focused upon normative standards describing ISMS requirements (ISO/IEC 27001) and certification body requirements (ISO/IEC 27006) for those certifying compliance with ISO/IEC 27001. Other standards provide guidance for various aspects of an ISMS implementation, addressing a generic process, control-related guidelines as well as sector-specific guidance. Relationships between the ISMS family of standards are illustrated in Figure 1.

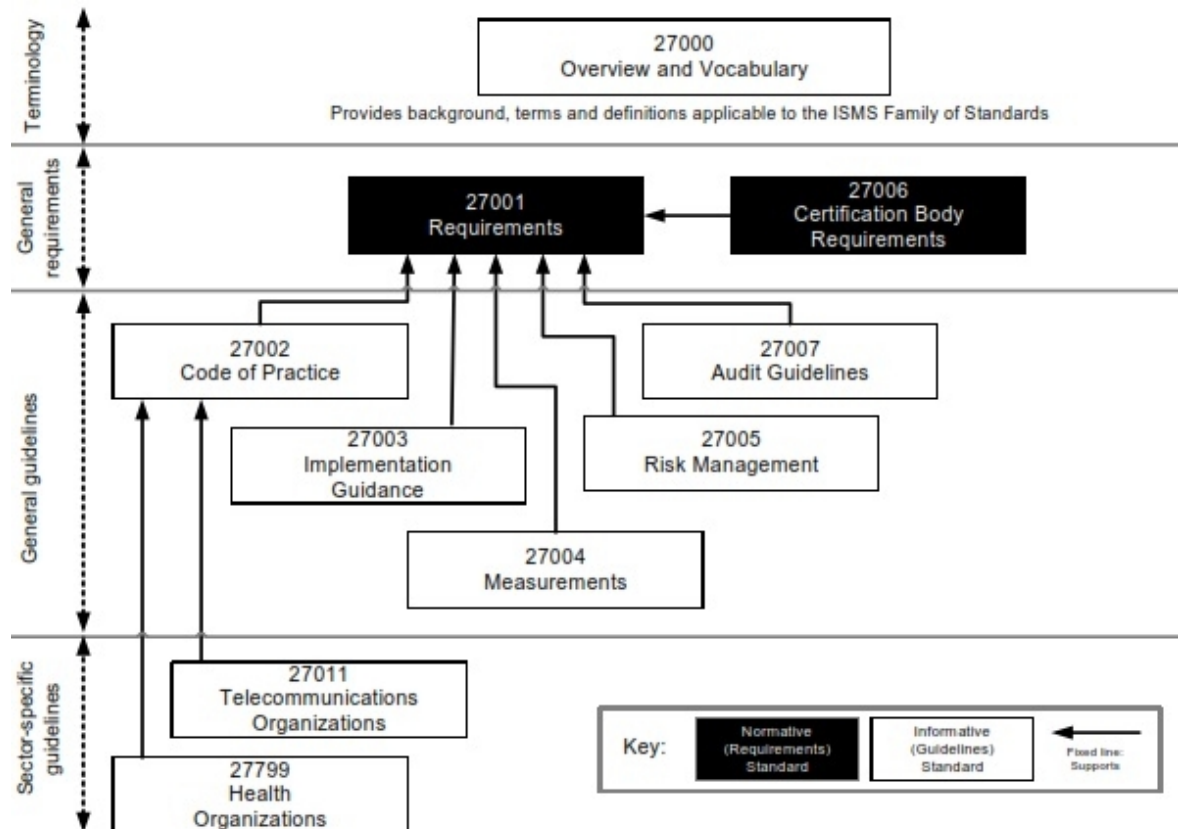


Fig.1 ISMS Family of Standards Relationships

ISO/IEC 27000 *Information security management systems — Overview and vocabulary* describes the fundamentals of information security management systems, which form the subject of the ISMS family of standards, and defines related terms.

2.1 Standards specifying requirements

ISO/IEC 27001 *Information security management systems — Requirements* specifies the requirements for establishing, implementing, operating, monitoring, reviewing, maintaining and improving formalized information security management systems (ISMS) within the context of the organization's overall business risks. It specifies requirements for the implementation of security controls customized to the needs of individual organizations or parts thereof. This International Standard is universal for all types of organizations (e.g. commercial enterprises, government agencies, non-profit organizations).

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ISO/IEC 27001 provides normative requirements for the development and operation of an ISMS, including a ***set of controls*** for the control and mitigation of the risks associated with the information assets which the organization seeks to protect by operating its ISMS. Organizations operating an ISMS may have its conformity audited and certified. The control objectives and controls from Annex A (ISO/IEC 27001) shall be selected as part of this ISMS process as appropriate to cover the identified requirements.

Annex A of ISO 27001 is probably the most mentioned annex of any management standard, containing the following clauses (sometimes called ISO 27001 Annex A domains):

- A.5 Security policy
- A.6 Organization of information security
- A.7 Asset management
- A.8 Human resources security
- A.9 Physical and environmental security
- A.10 Communications and operations management
- A.11 Access control
- A.12 Information systems acquisition, development and maintenance
- A.13 Information security incident management
- A.14 Business continuity management
- A.15 Compliance

Annex A contains 133 controls which, as can be seen from the names of the clauses, are not focused solely on IT - they also cover physical security, legal protection, human resources management, organizational issues, etc.

Therefore, you could consider Annex A as a form of a catalog of security measures to be used during your treatment process - once you identify unacceptable risks in risk assessment, Annex A will help you choose the right control(s) to decrease those risks. And ensure you don't forget any important control.

Annex A is where ISO 27001 and ISO 27002 come together - the controls in ISO 27002 are named the same as in Annex A of ISO 27001, but the difference is in the level of detail - ISO 27001 gives only a short definition of a control, while ISO 27002 gives detailed guidelines on how to implement the control. ISO27001 are ***the requirements*** needed to eventually have your ISMS (Information Security Management System) certified by an accredited company. ISO-27002 is considered best practices document, meaning that if you don't know how to comply with 27001 Annex A controls - you can use 27002 to get ideas how to implement the control.

ISO/IEC 27006 *Requirements for bodies providing audit and certification of information security management systems* specifies requirements and provides guidance for bodies providing audit and ISMS certification in accordance with ISO/IEC 27001, in addition to the requirements contained within ISO/IEC 17021. It is primarily intended to support the accreditation of certification bodies providing ISMS certification according to ISO/IEC 27001. The document supplements ISO/IEC 17021 in providing the requirements by which certification organizations are accredited, thus permitting these organizations to provide compliance certifications consistently against the requirements set forth in ISO/IEC 27001.

2.2 Standards describing general guidelines

ISO/IEC 27002 *Code of practice for information security management* provides a list of commonly accepted control objectives and best practice controls to be used as

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implementation guidance when selecting and implementing controls for achieving information security.

ISO/IEC 27003 *Information security management system implementation guidance* provides practical implementation guidance and provide a process oriented approach for establishing, implementing, operating, monitoring, reviewing, maintaining and improving an ISMS in accordance with ISO/IEC 27001.

ISO/IEC 27004 *Information security management — Measurement* provides guidance and advice on the development and use of measurements in order to assess the effectiveness of ISMS, control objectives, and controls used to implement and manage information security, as specified in ISO/IEC 27001.

ISO/IEC 27005 *Information security risk management* provides guidelines on implementing a process oriented information security risk management. The approach described within this International Standard supports the general concepts specified in ISO/IEC 27001.

ISO/IEC 27007 *Guidelines for information security management systems auditing* provides guidance on conducting internal or external ISMS audits, as well as guidance on the competence of information security management system auditors, in addition to the guidance contained in ISO 19011, which is applicable to managements systems in general.

ISO/IEC 27008 *Guidelines for auditors on information security management systems controls* complements ISO/IEC 27007. It concentrates on auditing the information security controls, whereas '27007 concentrates on auditing the management system. This standard provides guidance for all auditors regarding “information security management systems controls” selected through a risk-based approach for information security management. It supports the information security risk management process and internal, external and third-party audits of an ISMS by explaining the relationship between the ISMS and its supporting controls. It provides guidance on how to verify the extent to which required “ISMS controls” are implemented. Furthermore, it supports any organization using ISO/IEC 27001 and ISO/IEC 27002 to satisfy assurance requirements, and as a strategic platform for Information Security Governance.

3.Conclusion

As part of an organization's ISMS, risks associated with an organization's information assets need to be addressed. Achieving information security requires the management of risk, and encompasses risks from physical, human and technology related threats associated with all forms of information within or used by the organization.

The adoption of an ISMS is expected to be a strategic decision for an organization and it is necessary that this decision is seamlessly integrated, scaled and updated in accordance with the needs of the organization.

The design and implementation of an organization's ISMS is influenced by the needs and objectives of the organization, security requirements, the business processes employed and the size and structure of the organization. The design and operation of an ISMS needs to reflect the interests and information security requirements of all of the organization's stakeholders including customers, suppliers, business partners, shareholders and other relevant third parties.

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In an interconnected world, information and related processes, systems, and networks constitute critical business assets. Organizations and their information systems and networks face security threats from a wide range of sources, including computer-assisted fraud, espionage, sabotage, vandalism, fire and flood. Damage to information systems and networks caused by malicious code, computer hacking, and denial of service attacks have become more common, more ambitious, and increasingly sophisticated.

An ISMS is important to both public and private sector businesses. In any industry, an ISMS is an enabler that supports e-business and is essential for risk management activities. The interconnection of public and private networks and the sharing of information assets increases the difficulty of controlling access to and handling of information. In addition, the distribution of mobile storage devices containing information assets can weaken the effectiveness of traditional controls. When organizations adopt the ISMS family of standards the ability to apply consistent and mutually-recognisable information security principles can be demonstrated to business partners and other interested parties.

Information security is not always taken into account in the design and development of information systems. Further, information security is often thought of as being a technical solution. However, the security that can be achieved through technical means is limited, and may be ineffective without being supported by appropriate management and procedures within the context of an ISMS. Integrating security into an information system after the fact could be cumbersome and costly. An ISMS involves identifying which controls are in place and requires careful planning and attention to detail. As an example, access controls, which may be technical (logical), physical, administrative (managerial) or a combination, provide a means to ensure that access to information assets is authorized and restricted based on the business and security requirements.

The successful adoption of an ISMS is important to protect information assets allowing an organization to:

- a) achieve greater assurance that its information assets are adequately protected against information security risks on a continual basis;
- b) maintain a structured and comprehensive framework for identifying and assessing information security risks, selecting and applying applicable controls, and measuring and improving their effectiveness;
- c) continually improve its control environment; and
- d) effectively achieve legal and regulatory compliance.

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