JOURNAL OF DEFENSE RESOURCES MANAGEMENT

Vol. 7, Issue 1 (12) / 2016

BRASOV - ROMANIA

CONTENTS

DEFENSE INDUSTRY CLUSTERS IN TURKEY

Kadir Alpaslan DEMIR*
Ebru CAYMAZ**
Fahri ERENEL***

*Ph.D., Assistant Program Manager, Turkish Naval Research Center Command, Istanbul, Turkey

**Marmara University, Department of Organization and Management, Istanbul, Turkey

***Assist. Prof., (R) Brig. Gen., Istanbul Kemerburgaz University,
Department of International Logistics, Istanbul, Turkey

All countries strive for a capable national defense supported by a strong national defense industry. Supporting national defense with imported defense systems has many limitations and risks because the terms of arms trade agreements between countries may easily be influenced by the political climate of the signatories. As a result, establishing an independent national defense requires a strong national defense industry. Furthermore, exporting defense systems may be an important source of national income. National defense industries mostly consist of large-scale defense firms that have the resources required for big defense contracts. However, small to medium enterprises (SMEs) do not have the necessary resources, therefore they are at a disadvantage. To overcome this handicap and be part of the business, defense industry clusters mostly consisting of SMEs are being established. Provided that there is good national planning and support in this area, defense clusters consisting of SMEs may play a significant role in industry. SMEs have a chance to offer specialized services, special or customized products when needed. As a result, large defense firms subcontract certain portions of defense projects to SMEs. Since 2010, Turkey has shown signs of continuous improvement in defense industry clustering. In parallel with these developments, this study discusses the importance of clustering in the defense industry, briefly presents the state of the Turkish defense industry as highlighted by national statistics, and presents the current status of defense clusters in Turkey. The novelty of this article consists in its assessment of Turkish defense clusters.

Key words: *defense, defense industry, clusters, clustering, defense clusters, industry clusters, defense industry clusters, Turkey, Turkish defense industry, Turkish defense industry clusters.*

1. INTRODUCTION

In addition to large-scale defense companies, small to medium enterprises (SMEs) may also contribute significantly to the national defense industry. To benefit from SMEs to the maximum extend in defense industry, defense industry clusters are being established. On the other hand, being a part of a defense cluster has many advantages for SMEs. First of all, defense clusters are generally supported by the government with certain incentives such as tax reductions, cheaper rents, ease of access to funds and credits, etc. Defense clusters also promote

themselves through many advertising campaigns and various national or international events such as defense industry exhibitions. Members of defense clusters have increased communication and synergy. These clusters also attract skillful and educated human resources. Usually, large defense companies have offices in defense clusters. As a result, SMEs and big defense companies become geographically close and this provides opportunities for both parties. For instance, the main defense contractor, a big defense company, may and in most cases should subcontract certain portions of the project work packages to SMEs. To stay competitive, defense SMEs are specialized in various products and services. Through specialization, they can produce certain products or equipment with high quality. SMEs may also provide expert services in specific defense industry areas. Overall, defense clusters increase the size and capability of the defense industry by including SMEs.

In Turkey, the importance of defense clustering is also recognized and acknowledged by high level government officials. Recently there have been many initiatives from government organizations and private sector. Clusters related to defense, security, aviation, and space have been established since 2008. This study investigates the current status of defense industry clusters inTurkey and is structured in the following way In the second section, an overview of the Turkish defense industry is provided based on recent national statistics in the field. Furthermore, key organizations in the industry are identified. The third section briefly reviews the literature discussing the importance of clustering and life cycle of clusters. Defense industry clusters are separately discussed in the following section. In the fifth section, a brief discussion on the Turkish defense industry clusters is provided. The conclusion section summarizes the authors' assessment of Turkish defense clusters.

2. AN OVERVIEW OF TURKISH DEFENSE INDUSTRY

The Turkish Defense Industry was established with the birth of Republic of Turkey. The country inherited very little defense industry from the Ottoman Empire. At the time, defense industry growth was slow since there were many other areas requiring investment for improvement such as education and health. Up until the 1960s, the industry grew at a slow pace. In the 1960s, limitations on the use of exported defense systems led to a set of initiatives to strengthen the national defense industry. Foundations supporting different branches of armed forces were started in the 1970s. A foundation is a nonprofit corporation that supports other organizations with funds collected mostly from charities. The most recognized one is Turkish Armed Forces Foundation. Firms supported by these foundations were founded. Aselsan (1975), Aspilsan (1981), Havelsan (1982) are only a few examples of these firms. In the 1980s and 1990s, Turkish firms started joint development of various defense systems with foreign partners. They also became subcontractors to foreign defense firms in many defense projects. For example,

certain systems and parts of F-16 Fighting Falcon Fighter Aircraft, one of the most successful and widely-used multirole fighter aircraft in the world, were subcontracted to Turkish firms. During the 1980s, there were many structural reforms in the Turkish government. Naturally, the government organizations tasked with defense system acquisitions and defense industry support were also reformed. New government organizations based on novel and improved regulations to better support the defense industry were established. For example, in 1985, law number 3238 established the Undersecretariat for Defense Industries (SSM) that works based on a special regulation. During the 1990s, new defense firms, completely funded by the private sector, were started. Up to that time, almost all defense firms were either supported by government or foundations.

In 1990, one of the most important Turkish defense industry associations was established. First, it was named as Defense Industry Manufacturers Association. Later, in 2012, its name was changed to Defense and Aerospace Industry Manufacturers Association to reflect the inclusion of many aerospace firms into the association. During the 2000s, the long term investments started to pay off and many defense systems were delivered to Turkish Armed Forces. In addition, some of these systems and equipment were exported to other countries.

2011 was an important year for the Turkish defense industry. The first warship completely designed in Turkey started its service in the Turkish Navy. The ship, named TCG Heybeliada, is the first corvette in the MILGEM corvette class. Around 80% of the MILGEM corvette was produced in Turkey including the combat management system. The development of MILGEM corvette, ATAK helicopter, ALTAY tank, ANKA unmanned aerial vehicle, HURKÜŞ training aircraft are among the main achievements of the Turkish defense industry over the years. To sum up, the Turkish Defense Industry has been on the rise for the past fifty years. Currently, Turkey is able to support Turkish armed forces with many national defense systems.

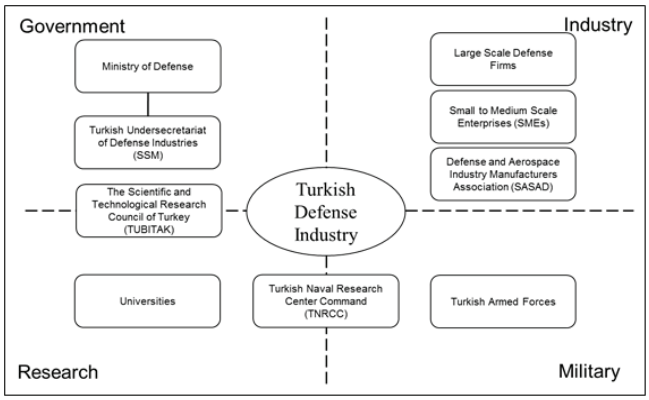


Fig. no. 1. Turkish Defense Industry Main Stakeholders Overview

A holistic view of defense industry includes government, military, industry, and research components. **Figure 1** shows the main stakeholders in the Turkish defense industry, as well as some of the key actors notably contributing to the national defense industry.

In Turkey, the **Undersecretariat for Defense Industries (SSM)** is tasked with the acquisition of strategic and major defense systems. SSM was established as a branch of the Ministry of Defense in 1985. It currently employs hundreds of defense acquisition specialists. SSM also acts as a key player in shaping long term defense policies. The organization is considered a success factor in achieving the current state of national defense industrial capability.

Another key player in the Turkish defense industry is the **Scientific and Technological Research Council of Turkey (TUBITAK).** This organization was established in 1963 primarily to act as a consultant to the government on science and technology policies. Over the years, TUBITAK has grown significantly and now employs thousands of researchers. TUBITAK conducts research in many areas and naturally, a portion of the resources are reserved for defense related research. The organization also funds research conducted by universities, organizations, and firms. In some cases, TUBITAK takes on defense projects requiring a significant amount of research and development (R&D). Such defense projects are not attractive to private industry because of the high risk in R&D defense projects.

The Turkish Naval Research Center Command (TNRCC) is a unique organization in Turkey. It was founded in 1998 as a military research organization within the Turkish Navy. It primarily conducts applied research, develops prototype defense systems and full-scale defense systems with industry partnership. The experiences acquired with TNRCC will be used as a starting point for establishing other military research organizations. Therefore, it could be considered as a role model. TNRCC was the key organization in the development of the GENESIS combat management system used by the MILGEM corvette. In time, GENESIS became a long-term program and currently is the primary combat management system for many Turkish Navy ships.

The **Defense and Aerospace Industry Manufacturers Association (SaSaD)** is the foremost private sector association for defense and aerospace companies and was supported by the ministry of defense during its establishment in 1990. It started with 12 companies and now, represents 137 companies including 4 defense industry clusters. SaSaD became the primary association representing the defense, aerospace, space, and security companies in Turkey. The mission of the association is "to contribute to a powerful defense sector by gathering Turkish defense industry establishments under SaSaD umbrella". As stated in the SaSaD 2015/2016 defense directory [27], the association contributes to the Turkish defense industry in many ways.

Hence, SaSaD

- ensures that the strategic interest of Turkish Defense, Aerospace, Space and Security industry are properly represented;
- creates the best climate in which its members can do their business;
- represents a single point of contact for its members and new comers to the sector;
- deals and lobbies with government officials for the sake of the defense sector;
- helps to identify domestic and international market opportunities and organizes events to build synergy and cooperation among its members, and national and international sector representatives, as well as neighboring sector players
- gathers data and statistics on defense industry;
- prepares reports on defense sector performance.

To understand the current status of Turkish defense industry , let's examine the latest statistics. As indicated earlier, the Defense and Aerospace Industry Manufacturers Association (SaSaD) publishes yearly defense industry statistics. The latest report included statistics based on the 2014 performance. The report for 2015 has yet to be released. The 2014 report is prepared based on a survey of 78 members of SaSaD. Note that these members constitute over 90% of the Turkish defense industry. The report [28] indicates that the total sales of the defense industry in Turkey are over $5 billion. While the total export is around $1.8 billion, the total import is just over $1.3 billion. The rise of the Turkish defense industry may easily be observed by examining the increase in the size of the total contracts. In 2013, the size of the total contracts awarded was over $8 billion. In 2014, it reached to $1 1 billion. The increase is over 35%. Currently, there are over 31 thousand people working in the industry. However, we have to note that while the contracts awarded are on the rise, the manpower stays the same for the last couple of years. Table 2 shows the Turkish defense industry overview as of 2014.

Thetotal defense systems sales may be divided into the following areas: Command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR), aviation and space, information technologies, land vehicles, sea vehicles, and other C4ISR has highest share in the sales. Table 3 shows the defense industry sales by areas.

Turkey exports defense systems to many countries. Currently , USA and Europe are the main buyers of Turkish defense systems. The value of defense systems exported to USA was $581 million dollars in 2014. $418 million and $856 million dollars' worth of defense systems was exported to Europe and to the rest of the world, respectively . 31% of total export goes to USA. 23 % of total export goes Europe and over %46 of total export goes to other countries. In the last f ve years, the total export increased from $853 million to $1.855 billion. This amounts to a 217% increase in the total export. Table 4 shows the total Turkish defense systems export over the last 5 years.

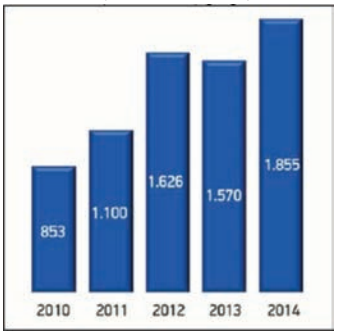
Table 1. Turkish Defense Industry Overview as of 2014 [28]

Total Sales	$5.1 Billion
Total Export	$1.8 Billion
Total Import	$1.3 Billion
Total Contracts	$11 Billion
Total R&D	$0.88 Billion
Total Manpower	31242 personnel

Table 2. Turkish Defense Industry Sales by Areas [28]

Land Vehicles	$521 Million
Sea Vehicles	$298 Million
Information Tech.	$219 Million
Aviation and Space	$1204 Million
C4ISR	$1450 Million
Other	$1409 Million

Table 3. Total Defense Export over the Years (in $ Million) [28]



3. INDUSTRY CLUSTERS

Today, even acquiring cheap labor is becoming inef fective in a competitive global economy . Therefore, more innovation, successful research and development (R&D), and high intellectual capital are needed to stay competitive. The SMEs have limited resources to invest in innovation, R&D, and intellectual capital. Clustering is seen as a solution for SMEs to stay competitive against large companies with more resources. Thus, clustering in various industries is gaining attention.

Porter introduced the notion of business clustering with his famous work titled Competitive Advantage of Nations in 1990 [9]. According to Porter, business clustering is a geographic concentration of f rms from a particular industry with thef rms from supporting industries and related public and private institutions [10]. Porter states that "A cluster allows each member to bene f t as if it had greater scale or as if it had joined with others without sacri f cing its f exibility." [10]. Porter 's diamond model is used by many researchers in analyzing the competitiveness of nations and clustering in various industries [11].

Clusters may be developed based on industrial similarity or interdependency [23]. According to Jacobs and De Man [13], there are three types of clusters: Regionally concentrated industries, sectors or groups of sectors, or production chains.

The mature clusters developed based on a good strategic plan share some common characteristics [12]:

- Common customers,
- Common suppliers,
- Shared infrastructure,
- Shared pool of human resources,
- Shared opportunities for education and training of employees,
- Shared access to research and developmentinstitutions, universities, and non-prof t organizations,
- Common risk, capital, and market structure.

Similar to biological systems, clusters go through various phases

in their life cycle. According to Porter, these are birth, evolution, and decline [10]. Rosenfeld [18] defines another life cycle model for clusters. In Rosenfeld's model, there are four phases in the life cycle of a cluster. These are embryonic, growth, maturity, and decay phase. These two life cycle approaches are in fact similar. The embryonic stage of a cluster may be the result of innovations, inventions, or inward investment [18]. Sometimes, the birth of a cluster occurs naturally based on market needs created by demanding consumers. For instance, the textile clustering in Denizli region of Turkey is such an example [3]. The clusters in a region can give birth to other clusters. The environmental cluster in Finland is developed due to the pollution created by other industries such as energy, forestry, metals, and chemicals [10]. The growth stage occurs with the development and restructuring of the related market attracting more entrepreneurs for new spin offs and startups. In its growth stage, the cluster starts to evolve and gains a momentum in creating and maintaining a competitive advantage. More firms are attracted to the clusters. The support to the cluster increases as the government, institutions, and supporting industries strengthen the relations with the cluster. In this stage, the competition within the cluster also increases. In the maturity phase, the processes and services become routine and cost becomes a key competitive advantage. During the last stage, the cluster is being challenged by alternative clusters and industries. In this decay stage, the cluster starts to lose its competitiveness and slowly decays in time due to both internal and external factors.

Kuah states that starting a business in a cluster has many benefits for the startup [5]. According to Porter [10], being in a cluster has benefits such as:

- Better access to employees and suppliers;
- Access to specialized information;
- Access to institutions and public goods.
- Arıç [7] states that there are four main reasons why a group of firms start or join a cluster:
  - Networking;
  - Political and social benefits;
  - Commercial and strategic alliances;
  - Innovation.

Clusters are effective environments for information exchange [14]. Conferences, seminars, invited discussions, expositions are good opportunities for networking and sharing of information, expertise, and lessons learned. Therefore, effective clusters are also sources of innovation and place a special emphasis on such events. Today, clusters and innovation have become terms commonly used together. The Silicon Valley located in San Jose, USA, is a good example of a cluster as a source of innovation.

4. DEFENSE INDUSTRY CLUSTERS

The firms in the defense industry have certain roles depending on their size, products, and services. There are three main roles: Main contractor, subcontractor, and service providers or suppliers of various equipment and components. There are also some firms specialized in certain areas that conduct analysis, design, testing.

Figure 2 shows the hierarchical structure of the defense industry firms and institutions depending on their roles [1].

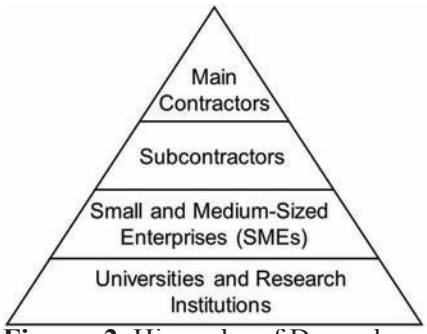


Fig. no. 2. Hierarchy of Dependence in Defense Industry

Due to security and confidentiality of the defense technology in defense systems, the need to develop these systems domestically, at least the critical portions of them is obvious. Many countries place limitations on the use of exported defense systems. For example, in USA, the export of defense systems is subject to the approval of the Congress. Furthermore, the maintenance costs of exported defense systems are considerably high. Therefore, independence in defense systems has many advantages for the countries. Defense systems are generally complex, large-scale, and software-intensive systems [19]. Normally, the defense contract is won by a main contractor. This main contractor has many subcontractors to develop various parts of the system. The main contractor may also get services for design, testing, and certification of specialized components. In some cases experts from consultancy firms or scientists from universities may be hired for consultancy. As a result, defense system projects have many stakeholders [30]. Defense systems are normally developed for governments and stakeholder involvement is especially challenging in government-contract software projects [16]. Therefore, clustering has many benefits in developing defense systems by bringing these stakeholders together. To achieve competitiveness, the firms in the cluster should form effective collaboration circles both within the cluster and outside the cluster. The success of firms in the cluster is higher than the firms outside the cluster due to the fact that no firm can overcome all the challenges related to the development of defense systems. Since defense systems are large-scale and complex, it is quite unlikely that the expertise and resources needed to successfully develop a defense system will be possessed by only one firm. Thus, clustering is one of the best solutions to this problem. Porter emphasizes that clusters are formed by firms sharing common benefits and firms from different industries supporting the industrial focus of the cluster. The common benefits are shared pool of resources, institutions, a shared culture, common opportunities, and similar threats [6]. The strategic alliances between defense industry firms are affected by the political, social, economic, and security climate in the country.

The defense firms are not the only actors in creating a competitive defense industry. There are other actors playing significant roles in achieving a strong defense industry. These actors include the Ministry of Defense, government acquisition agencies, public and private research and development

institutions, universities, non-profit organizations. According to Ziylan, without government support a large defense project cannot be achieved by a single main contractor [2]. Having adequate qualified human resources in the defense industry is also important [4]. Therefore, universities and research institutions should be in close contact with clusters. These institutions should be able to offer programs and courses needed by this industry. Creating a synergy between all these actors will help to achieve a strong defense industry. The defense clusters should create communication channels with all these actors.

5. DEFENSE INDUSTRY CLUSTERS IN TURKEY

The fast growing defense industry started to realize the significance of clusters in achieving competitiveness. National policies and reports (see reference [17] as an example) also state that creating effective defense clusters is a necessity . To achieve competitiveness, defense industry should have a strong technological base and a sustainable growth in variety and depth. Murad Bayar , the Head of the Turkish Undersecretariat for Defense Industries (SSM) between 2004 and 2014, drew attention to the importance of defense industry clustering during his appointment. According to Bayar, the defense industry in Turkey has yet to reach the capability to create innovative and critical defense technologies. Bayar states that the development of capable contractors and subcontractors and the creation of necessary culture in defense industry take time. Consequently , SSM is trying to lead the SMEs and other firms supporting the defense industry in establishing good defense project management practices and increasing the technological development capability. Bayar also highlights that clustering is an important tool in guiding these firms and achieving these goals. In this respect, Bayar gives the example of OSSA as a successful implementation of defense clustering [8].

As of 2015, there are 5 active defense industry clusters in Turkey. Another cluster is in development phase. Let's briefly introduce each cluster.

The first defense industry cluster in Turkey is **OSTIM Defence and Aviation Cluster (OSSA)** established in 2008 [20]. As an active cluster with 161 members, they conducted many projects including OSSA International Competition Project together with 24 participants [21]. They were the coordinator of ULTRAVEG Project with 8 companies and universities across Europe, within the scope of the 7th Framework Program of the European Union. They have taken part in aerospace projects by providing various parts and equipment to F-16 and CN-235 planes. In addition, they are producing industrial equipment such as "Turning and Milling Cutting Tools".

Teknokent (Technology Park) Defense Industry Cluster (TSSK) [22] located in Middle East Technical University in Ankara is established at the end of 2010. The cluster naturally has ties to the Middle East Technical University. The mission of the TSKK is "to provide added value to generate more synergy and cooperation among its members, with universities for applied research

in defense sector , and with major contractors" [22]. This cluster is a designated defense industry research and technology development region (SATGEB). Being in a SATGEB has incentives for conducting defense R&D. As a result, companies focusing on R&D have considerable advantages including tax reductions and funds for defense technology research. Naturally, this cluster has a strong R&D focus.

The Aerospace Clustering Association (ACA) [24] was established in 2010 in İzmir region. ACA is the f rst cluster specializing in aviation and space technologies with the purpose of pursuing the ef forts for training qualif ed personnel. This association follows the guidance of the Undersecretariat for Defence Industries (SSM) in supporting the SMEs located in the Aegean Region. The cluster aims for projects with high added value. ACA is a member of the European Aerospace Cluster Partnership (EACP) that provides "a permanent platform for mutual exchange, policy learning, and cooperation to achieve high-level performance among European aerospace clusters" [32].

The Eskisehir Aviation Cluster (ESAC) [25] followed ACA in aviation. The cluster was established in 2011 in Eskisehir region. The location of this cluster is carefully chosen. It is located in one of the cities hosting a lar ge Air Force base in Turkey. As a result, the companies in this cluster are expected to support this air force base with certain spare parts and specialized services. Musubeyli [33] lists the chronological events leading to the establishment of Eskisehir Aviation Cluster. According to his study , the establishment of this cluster took more than 3 years. ESAC is also a member of the European Aerospace Cluster Partnership.

The Defence, Aviation, Space Clustering Association (SAHA) is established in 2015 in Istanbul region. It currently has more than 30 member companies and it is growing quickly with the advantage of being in Istanbul. Like many clusters, this site has a tax reduction for companies conducting research and development (R&D). There are also of f ces of big defense companies in this cluster. One of the main advantages of this cluster is the availability of skillful and well-educated human resources. Istanbul region has more than 30 universities and living in Istanbul is attractive for many engineering graduates.

The Space, Aviation, and Defence Cluster is established in 2014 in Bursa region. It has a strong support from the Bursa Chamber of Commerce and Industry. The stated goals of this cluster are:

- to meet the common necessities of its members,
- to facilitate the professional activities,
- to provide the development of the professions in accordance with its general benef t,
- to launch the clustering initiatives,
- to carry out activities to maintain the initiatives,
- to coordinate big scale projects,
- to ensure the regional development agency-supported projects.

This defense industry cluster is still under development. Currently , the cluster management board is trying to establish ties with domestic and international partners.

Table 4 shows the overview of the defense clusters inTurkey. The cluster in Bursa is not included in the table since it is still under development. **Figure 3** shows the locations of the defense industry clusters in Turkey.

Table 4. Defense Industry Clusters in Turkey

Cluster Name	OSTIM Defense and Aviation	Teknokent Defence Industry Cluster	Aerospace Clustering Association	Eskişehir Aviation Cluster	Defence, Aviation, Space Clustering Association
Cluster Abbreviation	OSSA	TSSK	ACA	ESAC	SAHA Istanbul
Cluster Focus	Defense and Aviation	Defense and Security	Aviation and Space	Aviation	Defence, Aviation and Space
Location	Ankara	Ankara	Izmir	Eskisehir	Istanbul
Year Established	2008	2010	2010	2011	2015
Number of Companies and Corporates	160 (7500 personnel)	70	37 Corporate 14 Academic 31 Companies (Over 60 members)	32	30+

Fig. no. 3. The Locations of Defense Industry Clusters in Turkey

6. CONCLUSIONS AND FUTURE WORK

The main characteristic of the first three defense industry clusters in Turkey is that these clusters are mostly composed of SMEs. However, when we analyze the defense industry clusters in countries with strong national defense industries, we observe that defense clusters have a certain mix of SMEs and large-scale

defense companies. For example, the cluster Aviation and Space Valley of France, consists of not just SMEs but also main defense contractors. Naturally, these clusters are a better environment for creating syner gy between SMEs and lar ge-scale defense companies. We believe that to maximize the output of defense clusters in Turkey, the clusters should aim for a balanced mix of large-scale defense companies and SMEs.

The lack of guidance and determination of roles in defense clustering presents a challenge in Turkey. Without an in-depth analysis and planning, there are various attempts from dif ferent government agencies for clustering initiatives. While the government support is strong, lack of a coherent strategic plan for defense clustering may result in the suboptimal use of resources. One of the f rst steps in f nding a solution to the current set of problems is to f ll the gaps in the industry regulations related to clustering and cluster development.

The defense industry clusters in Turkey are in their early phases and they are not developed to the point of fully functioning clusters. The slow pace in the development may be attributed to the de f ciencies in the cluster formation during early phases. Currently, the defense clusters in Turkey are only able to bring the SMEs together to increase coordination and the governing bodies of these clusters only act as an association to provide a list of subcontractors to the main contractors. The main reason is the perspective of the SMEs forming the clusters. Rather than cooperating and forming strategic alliances with other SMEs to increase their capabilities, they mainly try to get their share of business and bene f t from government subsidies such as tax deductions. The cluster management boards should f nd ways to increase the cooperation between cluster members. A cluster's strength lies in the amount of cooperation between its members and outside partners. Currently, the outside links of defense clusters is weak, especially the ones between the defense f rms in clusters and universities [31]. While the Teknokent Defense Industry cluster located in Middle East Technical University in Ankara and Aviation and Space cluster located in İzmir, have strategic alliances with the universities located nearby , other clusters need improvement in this area. The universities should be more engaged in defense industry clusters and they should actively participate in defense project developments. Furthermore, clusters should put more effort in establishing partnerships with universities since the latter are also a source of skillful and educated human resources. Therefore, close ties between education institutions and defense clusters are very important in terms of developing the necessary human resources for the defense industry [29].

The defense industry clusters in Turkey have not specialized in a particular defense area or a technology Specialization in certain defense areas may produce better results. For example, the French aviation and space industry clustering established in Midi-Pyrenees and Aquitaine region of south-eastern France is specialized in structural aviation engineering. The French aviation and space industry clustering established

in Ile De France, northern France, is specialized in aviation electronics and aircraft engines. Another cluster located in French Riviera (Côte d'Azur) region of south-eastern France develops projects related to helicopters. Therefore, the Turkish defense industry clusters should start focusing on specialization.

One of the main problems of SMEs in aviation clusters isf nancing problems [31]. Even though there is some government support and incentives, more support is needed to increase the competitiveness in the international arena.

Even though there are many problems, the defense industry clustering in Turkey is improving. The national defense industry capability and the variety in defense products will increase as these clusters continues to develop.

REFERENCES

[1] Aktas, B. (2014). Defense Acquisition System (Savunma Tedarik Sistemi - In Turkish), Industrial Day Congress. Presentation of the Undersecretariat for Defence Industries, Konya, Turkey, 9-10 June 2014.

[2] Ziylan, A. (2004). National Technological Capability and Defense Industry (Ulusal Teknoloji Yeteneği ve Savunma Sanayii - In Turkish). Savunma Sanayicileri Derneği Yayını, 2004 (1), p. 91.

[3] Timurçin, D. (2001). The Notion of Clustering and Its Effect on Competitiveness of SMEs (Kümelenme Kavram ı ve KOBİ'lerde Rekabet Gücüne Etkisi – In Turkish). Çankaya University Journal of Humanities and Social Sciences, May 2011, 8(1), pp. 21-56.

[4] Caymaz, E., & Erenel, F . (2012). Addressing the Need of Qualf ed Personnel in Defense Industry: The Turkish Case. The 7th International Scientif c Conference "Defense Resources Management in the 21st Century", Braşov, November 15, 2012. pp. 25-29.

[5] Kuah, A. T. (2002). Cluster Theory and Practice: Advantages for the small business locating in a vibrant cluster . Journal of Research in Marketing and Entrepreneurship, 4(3), pp. 206-228.

[6] Akdeve, E. (2012). Defense Industry Clustering: Cooperation and Competition (Savunma Sanayii Kümelenmesi: İşbirliği ve Rekabet – In Turkish), Savunma Sanayii Gündemi, 2012, No: 19, pp. 69-74.

[7] Arıç, K. H. (201 1). Clustering Policy on Developing National and International Competitiveness: Research on Furniture Industry in Kayseri (Ulusal ve Uluslararas ı Rekabetin Geliştirilmesinde Kümelenme Politikası: Kayseri Mobilya Sektöründe Bir Uygulama), Doctoral Dissertation. Erciyes Üniversitesi Social Sciences Institute, Erciyes University, Kayseri, Turkey. 2011. pp. 132-137.

[8] Bayar, M. (2014). National Defense Industry and Clustering Model (Ülkemiz Savunma Sanayii ve Kümelenme Modeli – In Turkish), Yatırım Finansman ve D ış Ticaret Dergisi, July 2014, p. 18.

[9] Porter, M. E. (1990). The Competitive Advantage of Nations. Harvard Business Review, 68(2), March-April 1990, pp. 73-93.

[10] Porter, M. (1998). Clusters and the New Economics of Competition, Harvard Business Review, November-December 1998, p. 78.

[11] Demir, K. A., Sulukan, E., Deliorman, R. B., Demir , S., & Uyar , T. S. (2010). Competitive advantage of wind power industry for Turkey: Analysis of factor conditions in Porter 's diamond model. In 9th World Wind Energy Conference & Renewable Energy Exhibition, Istanbul, June 2010. pp. 15-17.

[12] Aluftekin, N., Yuksel, O., Tas, A., Cakar, G., & Bayraktar, F. (2012). Clustering Model in the Way-Out From Global Crisis: Textile and Apparel Sector Case Study (Küresel krizden çıkışta kümelenme modeli: tekstil ve haz ır giyim sektörü örne ği – In Turkish) Uluslararası Yönetim İktisat ve İşletme Dergisi, 5(10), pp. 1–19.

[13] Jacobs, D., & De Man, A.P. (1995). Clusters, industriebeleid en ondernemingsstrategie, Economisch Statistische Berichten, 22-2-1995.

[14] Sölvell, Ó., Lindqvist, G., Ketels, C., & Porter, M. E. (2003). The cluster initiative greenbook. Bromma tryck AB print,

Stockholm, First Edition, August 2003, pp. 27-28.

[15] Wisniewski, R. (2012). Defence Industry in the European Union Challenges and Opportunities in Times of Economic Crisis, Przeglad Strategiczny, 2012, nr 2. pp. 95-113.

[16] Demir, K. A. (2009). A Survey on Challenges of Software Project Management. In Software Engineering Research and Practice 2009. pp. 579-585.

[17] Undersecretariat of Defense Industries (Savunma Sanayii Müsteşarlığı (SSM) – In Turkish), 2012-2016 Undersecretariat of Defense Industries Strategic Plan, Ankara, Aralık 2011, s.12.

[18] Rosenfeld, S. A. (2002). Creating Smart Systems - A Guide to Cluster Strategies in Less Favoured Regions, European Union-Regional Innovation Strategies, April 2002, p. 6.

[19] Demir, K. A. (2009). Challenges of weapon systems software development. Journal of Naval Science and Engineering, 2009, 5(3). pp. 104-116. (Deniz Bilimleri ve Mühendisliği Dergisi, in Turkish)

[20]http://www.ostimsavunma.org/en/content/about-us/286 , accessed on October 10, 2015.

[21]http://www.ostimsavunma.org/en/content/activities/720, accessed on January 14, 2016.

[22] http://tssk.odtuteknokent.com.tr/, accessed on October 10, 2015.

[23] Verbeek, H. (1999). Innovative Clusters: Identif cation of value-adding production chains and their networks of innovation, an international studies. Doctoral Dissertation, August 1999, Erasmus University Rotterdam, Netherlands.

[24] http://www.hukd.org.tr/En/ , accessed on October 10, 2015.

[25] http://www.esac.org.tr/?lang=en, accessed on October 10, 2015.

[26] Erenel, F , Demir, K. A., Caymaz, E. (2015). Assessment of Defense Industry Clusters in Turkey, In the 10th International Scientif c Conference "Defense Resources Management in the 21st Century", November 13th 2015, Braşov, Romania. pp. 101-107.

[27] http://www.sasad.org.tr/uploaded//SASAD-DEFENCE-DIRECTORY-2015.pdf , accessed on 10 February, 2016.

[28]http://www.sasad.org.tr/uploaded//2014-Yili-Savunma-ve-Havacilik-Sanayii-Performans-Raporu.pdf, accessed on 10 February, 2016.

[29] Yalçınkaya, A., and Adiloglu, L. (2014). The Concept of Aerospace Clustering and The Case of Eski şehir Aerospace Cluster (Havacılıkta Kümelenme Anlayışı ve Eskişehir Havacılık Kümelenmesi Örneği – In Turkish). The Journal of Business Science, 2(1), 91-110. (İşletme Bilimi Dergisi – In Turkish).

[30] Demir, K. A. (2005). Analysis of TLCharts for weapon systems software development. Masters' Thesis, Naval Postgraduate School Monterey, CA, USA.

[31] Gebes, F, & Battal, U. (2014)Aviation Cluster in Turkey and Financing Problems (Türkiye'de Havacılık Kümelenmeleri ve Finansman Sorunları – In Turkish). Niğde Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 7(1), p. 273.

[32] http://www.eacp-aero.eu/index.php?id=1&no_cache=1, accessed on February 10, 2016.

[33] Musubeyli, S. (201 1.) Aviation Clustering in Eskisehir (Eski şehir'de Havacilik Kümelenmesi – In Turkish), VI. Ulusal Uçak, Havac ılık ve Uzay Mühendisliği Kurultayı, 6-7 May 201 1, Eskişehir, Turkey.

ACKNOWLEDGMENTS AND DISCLAIMERS

The authors take full responsibility for the contents and scientif c correctness of the paper. The views and conclusions contained herein are those of the authors and should not be interpreted as necessarily representing the off cial policies or endorsements, either expressed or implied, of any af f liated organization or government. This article is a modi f ed and extended version of the study [26] presented in the 10th International Scientif c Conference "Defense Resources Management in the 21st Century", November 13th 2015, Brasov, Romania.

THE COMPETENCIES OF THE CHIEF INFORMATION OFFICER (CIO). AN ANALYSIS OF THE FEDERAL US CIO COUNCIL MEMBERS' BACKGROUND

Valentin DAMINESCU

This article is trying to answer two main questions: "What should the competencies of a Chief Information Officer (CIO) be?"; "Do the persons holding CIO positions have such competencies?". I tried to answer the first question searching into the history and theory of the Information Resources Management. I focused in the beginning on the interdisciplinary roots of the domain which, in my opinion, should be also present in the background of its managers, i.e. CIOs. Usually, the technical experience and skills of a CIO are taken for granted, so I wanted to reveal what other competencies a modern CIO should have for being proficient. There are some myths about what a CIO is, and such as: "CIOs may know about tech, but they fall short on people"; "CIOs live in silos, and are only concerned about their own department's performance"; "CIOs usually earned some kind of techie degree along the way"; "The buck stops here (1), at the CIO's desk, on all tech decisions". I went than and I analyzed the US Federal CIO Council, focusing on the background of its members. By doing this, I wanted to destroy the above myths, and to prove that it is indeed a reality to have CIOs with competencies beyond the technical area, which, by the way, are striving to share their experience to others CIOs to be.

Key words: chief information of f cer; information resources management; competence.

1. INFORMATION RESOURCES MANAGEMENT & ITS INTERDISCIPLINARY ROOTS

When referring to the term 'Information Resources', one should have in mind that this includes both information and related resources, such as personnel, equipment, funds and information technology. Information Resources Management (IRM) means the process of managing information resources to accomplish the mission and to improve or ganizational performance (2). Logically, IRM includes the management of information resources, but also of various technologies and equipment that manipulate these resources, and the people who generate, or ganize, and disseminate those resources (3).

Thus, it can be stated that IRM is a management concept that brings together individuals' knowledge and skills, information, or ganizational goals and objectives, and information technology, for the f nal goal of effectively accomplishing the organization's mission.

The roots of IRM are widely spread and cover the spectrum of at least four major sciences: Organizational Sciences (Sociology, Public Administration, and, in more depth, organization theory, human relations theory, group dynamics, leadership, and motivation), Management Sciences (Business, Management, and Economics), Computing, Communications & Telecommunications, Policy, Law and Political Sciences. Against this background, the developed IRM theory contains pieces of organization theory, management theory , human relations theory, economic theory , cognitive psychology, cultural anthropology, computer science etc.

2. THE SKILLS AND COMPETENCIES OF A CIO

By the 1996 Clinger -Cohen Information Technology Management Reform Act the institution of the CIO has been established and regulated thus calling for a focus on IRM management in each or ganization, either military or civilian.

According to this act, a CIO is in charge of Information Technology (IT) strategy and computer systems, and also responsible for driving directions and implementing technology within the or ganization. In order to be able to accomplish this, a CIO needs to meet simultaneously the current IT basic needs, to plan for the future growth, and to adjust to changing technology. This requires from a modern CIO to be expert in various domains such as leadership, acquisition, strategy planning, policy, process improvement, security and information assurance, e-governance and e-business, performance and results-based management, technology assessment.

It has been traditionally hard for the CIOs to build and earn the trust of the executive team. While the technologists may give support, the business often looks at them as outsiders. Three acquired and proved attributes are considered to be critical in building and earning the trust of the executive team for the CIOs: functional head, transformational leader, and business strategist.

A good functional head understands more than just the technical components that make up their area. Management skills such as managing the team, running the function as a business, and developing a strategy that is comprehensible to the lar ger organization are fundamental and are anchored into thorough technical knowledge. A contemporary CIO needs to be a business leader that understands what technology is available and how it can be used to create value for the organization; they need to know what it can do, not how.

The ability to work closely with the business partners and implement serious change is required for transformational leadership. Impacting the overall company and transforming processes and systems come after CIO has proven s/he can run the area of responsibility like a

business. This requires fundamental changes to the IT organization and thinking, namely to reduce the utility spending and to focus on the areas that really impact the business – business analysis and process improvement. This is often a difficult transformation, since organizations and managers do not want to transform. CIOs have to get out of their comfort zone and start the conversation with the people they work with. CIOs have to be seen as enablers and transformational leaders.

Being a business strategist is the final stage in the CIO evolution. This role is absolutely necessary for those working in selling service through technology, while in manufacturing, the goal should be to enable the business to operate as effectively and efficiently as possible.

A more comprehensive outlook on all of the above is rendered in **Figure 1.**

Fig. no. 1. A CIO's spectrum of responsibilities

3. US FEDERAL CIO COUNCIL

The US CIO Council is the principal interagency forum on Federal agency practices for IT management. Its mission is to improve practices related to the design, acquisition, development, modernization, use, sharing, and performance of Federal Government information resources.

The CIO Council aspires to promote a bright and prosperous future for the United States through the strategic use of Federal ITIt seeks to drive efficiency and effectiveness across Government, spurring innovation, protecting and defending the resources and more effectually bringing Government services to the American People.

The CIO Council serves the following key objectives:

- Develop recommendations for the Office of Management and Budget (OMB) on Federal Government IT management policies and requirements;
- Establish government-wide priorities on information technology policy and monitor their implementation;
- Share lessons learned, ideas, best practices, and innovative approaches related to IT management;
- Assist the Federal Chief Information Officer (Federal CIO) in the identification, development, and coordination of multi-agency projects and other innovative initiatives to improve Federal Government performance through the use of IT;
- Promote collaboration and community building among Federal Agency CIOs for purposes of sharing best practices, transferring knowledge, and developing a unified approach for addressing Federal IT challenges;

- Serve as a forum for collaboration on intra-agency IT portfolio management to reduce duplicative IT investments and drive the eff cient use of IT resources across agencies within the Federal Government.

The CIO Council is comprised of committees that align with Federal IT priorities (the current committees focus on Innovation, Cyber security, and Workforce). The committees manage specif c projects on behalf of the Council. The Council supports and conducts ongoing information exchange with a number of self-organizing Communities of Practice (CoPs) which address important IT topics and issues (currently , these include the Privacy , Accessibility, and IT Workforce CoPs). By working within a structure that combines formal committees, short-term, agile working groups, and communities of knowledge experts, the Council ensures that the most relevant and pressing Federal IT topics are addressed across the Federal CIO community.

The Council has now 47 members, CIOs or deputy CIOs of about 40 Federal Departments, Of f ces and Agencies, including the Federal CIO. The way the US Federal CIO Council is or ganized and operates could be an excellent example for any other Governments who decide to implement an institutionalized IRM. This highest Governmental level approach provides the general unitary vision and modus operandi for all the state agencies, while combining the formal committees with f exible WG is a way to follow in having an absolutely needed CIO community of practice.

4. THE REFLECTION OF THE CIO COMPETENCIES INTO THE US FEDERAL CIO COUNCIL MEMBERS' BACKGROUND

I have thoroughly analyzed both the educational and professional background of all the 47 members of the US Federal CIO Council, as it was stated by each of them in their CVs posted on the off cial website of the Council.

What is the main conclusion? All of them, maybe with few exceptions, observe the pattern of what we can call a modern CIO, in terms of experience, competencies and broader knowledge.

When it comes to education, the majority have a degree (Bachelor , Master or Phd) both in a technical domain (e.g. computer sciences, IT management, systems engineering, industrial engineering, educational technology, communications, quantitative research methods, mathematics), and in business management (public management, economics, marketing, f nance, business in science, project management) or international af fairs. Nevertheless, those with only technical education have a lar ge professional experience in business administration, gained while being in specif c leading positions. Many of them got diplomas or certi f cates in the very f eld of IRM or CIO (the US National Defense University being the main education provider).

All of them, with no exceptions, have a professional experience of at least 20 years, being accomplished information technology management executives with extensive government and corporate experience.

The career of most of them touched both the public and the private

sector (prestigious profit, non-profit companies or universities), which, obviously, has contributed to their professional development. Most of them have an important previous experience as CIO or other COs in other organizations (including CEO).

They have all demonstrated a strong ability to build and sustain relationships with public/private stakeholders to lead innovative projects and inter-agency initiatives. Their roles were both technical and executive, sometimes facing the engineering and product side of the business and sometimes facing the end-users, but always with both feet grounded in the technology.

As change agent in modernization and transformation, they managed large system implementations, focusing on innovation, technology and business strategy, gaining a depth and breadth of knowledge regarding how organizations use technology to transform their businesses and better serve their customers. In this framework, the areas covered by these CIOs include enterprise architecture, software quality in business process reengineering, strategic planning, capital planning and investment control activities, IT budget and acquisitions, financial management, mergers and acquisitions, contracts and procurement, grants policy issues, information operations, knowledge management, internal control and audit resolution, information sharing and safeguarding, enterprise human resource information systems etc.

Other areas of expertise includes for some of them data analysis consulting, emotional intelligence, logistics, international trade, history etc.

An important number of the US Federal CIO Council's members were pioneers in certain moments of their professional evolution – we have among them the first CIO of the Department of Homeland Security (DHS), the first CIO of the state of Hawaii, the one who implemented the first-ever National Call Center to provide emergency financial assistance during natural disasters, to give just few examples.

For their remarkable professional career and as an ultimate prove of their performance as CIOs, as well as for effective leadership and management in IT projects, many of the Council's members were awarded by Federal/State Government, President, professional publications, prestigious companies and associations, or they were included in different CIOs tops at Federal level.

Last, but not least, the importance and magnitude of these CIOs' responsibility is reflected also by the financial level, of tens of billions of USD, of the portfolio they have overseen.

5. CONCLUSIONS

The main conclusion of the above research is that, indeed, reality meets theory when it comes to having skillful and experienced persons in CIO positions.

However, at least at the level of the US Federal CIO Council's members, the myths about this job and its owners are clearly countered by reality, as follows:

- Productive CIOs realize that human skills are just as essential as tech command;
- Today's CIO is fully immersed in the needs of all departments to ensure

that tech supports the or ganization, not the other way around;
- Some CIOs might not have a formal IT education, but technology ignites their passion and intellectual curiosity when it comes to envisioning how it can solve business challenges;
- With an increasingly mobile workforce holding more inf uence than ever over which tech tools are used in the enterprise, ef fective CIOs pay attention to multiple stakeholders to help come up with high/performing IT solutions that minimize security risks.

CIOs have to make the transition from technology leader to business leader. They need to be leading the discussion about how IT can enable new business models, products and services. They need to get experience outside of the IT function and they need to invest time in networking and building relationships across the business so that they can shape the thinking of their colleagues and set the overall direction for how their organization can exploit technology.

Although CIOs have not traditionally been known for soft skills such a stakeholder and relationship management skills, the present digital business requires them to be social. This mainly means getting for longer outside of the IT function and engaging with stakeholders within and outside of the organization.

Being a social CIO in the physical world takes time, energy and effort, and thus CIOs will need to invest time, energy and effort in developing their online presence. This will help them be a credible CIO, build human capital, develop the network, create a personal brand.

The main takeaways resulting from this analysis, and that can be stated as prerequisites when it comes to considering establishing an institutionalized IRM approach and a CIO position are:
- Have a strategic integrated outlook and not a piecemeal approach;
- Establish the right infrastructure for developing the needed knowledge and skills;
- Be ready to make dramatic changes in the organizational structures;
- Have a community of practice to support and ref ne the implementation of policies and regulations.

NOTES & REFERENCES

(1) i.e. the responsibility is not passed on beyond

(2) Section 3502 (7) ofTitle 44, United States Code, Paperwork Reduction Act of 1995.

(3) Gary D. Blass et al. "Finding Government Information: The Federal Information Locator System (FILS)", Government Information Quarterly , JAI Press, Inc., Greenwich, Connecticut. Vol. 8, No. 1, pp. 11-32. 1991

[1] Paperwork Reduction Act of 1995.

[2] Clinger-Cohen Act of 1996.

[3] Hodges Dennis - How CIOs Earn a Seat at the Executive Table, www.blog.hellersearch.com, 2013, last retrieved December 2015.

[4] Uwe Michael Mueller - How to Prepare for Your CIO Job Interview , www.cioblog.ey.com, 2013, last retrieved December 2015.

[5] Dennis McCafferty - Myth-Busting the CIO Archetype, www.cioinsight.com, 2010, last retrieved December 2015.

[6] Gary D. Blass - Finding Government Information: The Federal Information Locator System (FILS), Government Information Quarterly, JAI Press, Inc., Greenwich, Connecticut, 1991.

[7] Ernest von Simson - The New Role of the CIO, www.businessweek.com, 2014, last retrieved December 2015.

[8] Sharm Manwani, David Flint - From Manager to Chief Information Off cer, www.computerweekly.com, 2014, last retrieved December 2015.

[9] www.cio.gov, last retrieved December 2015.

EFFECTIVENESS AND INTERNAL SECURITY. A COMPARATIVE ANALYSIS OF EL SALVADOR AND NICARAGUA

Geoffrey ELLIS

Naval Off cer, Naval Postgraduate School, USA

Nicaragua and El Salvador share many commonalities, including geographical vulnerabilities, widespread poverty, the experience of civil conflict in the 1980s, and a transition to democracy in the early 1990s. Nevertheless, each state has drastically divergent levels of violence, as measured particularly by homicide rates, with Nicaragua among the lowest in Latin America and El Salvador among the highest in the world. This paper assesses the historical and institutional variables that account for this divergence and evaluates each state's security structures using a civil-military relations analysis. In particular, the author uses Bruneau and Matei's criterion of effectiveness. The findings demonstrate that Nicaragua's security forces consolidated during the 1980s in a manner more capable of sustaining the democratic transition and confronting new security threats like gangs and organized crime.

Key words: *civil-military relations, Nicaragua, El Salvador, effectiveness, violence, Central America.*

1. INTRODUCTION

This year, El Salvador is projected to have the highest homicide rate in the world. At 92 per 100,000 inhabitants for 2015, its homicide rate has more than doubled since the breakdown of the gang truce in 2012 [1]. Nicaragua, by contrast, has experienced homicide rates steadily near or below 10 per 100,000 for over a decade, with 2014 one of the lowest yet at 8.7 per 100,000 inhabitants [2]. In this paper, I will examine this divergence in internal security outcomes through a civil-military relations analysis of the security forces of each state [3]. Contrasting El Salvador and Nicaragua of fers useful insights due to the relevant similarities and dif ferences. Both countries underwent a civil war in the 1980s. Both struggle with legacies of authoritarianism, and each is situated geographically within a major transshipment zone for narcotics from South America to the United States. The two states also di**f**er in key ways, including varying degrees of foreign military assistance, different types of democratic transitions, and distinct methods of security sector formation during the civil war periods.

1.1 Objectives and Methodology

My aim is to explore the divergence in violence levels using a civil-military relations analysis of effectiveness of the security forces as my point of departure. Many Latin American civil-military relations specialists focus on democratic civilian control of the military–

a natural topic for a region that has, by and lar ge, only democratized within the last several decades. Samuel Huntington's *The Soldier and the State* paved the way for this type of analysis, in f uencing leading civil-military relations scholars like Peter Feaver and John Allen Williams [4]. With respect to Latin America, academics have written about the inf uence of military prerogatives and reserve domains on democratic civilian control. Alfred Stepan pioneered this kind of analysis with his seminal analysis of military prerogatives in South America. In *Rethinking Military Politics: Brazil and the Southern Cone*, Stepan outlined eleven indicators to assess the prerogatives of the military of Brazil, which other scholars have applied to various Latin American states [5].

Others, like Narcis Serra have written about civil-military relations in democratic transitions, drawing from his transformational tenure as Spain's f rst defense minister after Franco. Serra also stresses the centrality of democratic civilian control and subordination of the military. In his prologue to *Debating Civil-Military Relations in Latin America* (2014), Serra ar gues for the ongoing centrality of democratic civilian control due to *"the need to find policies that place them [the military] in a position subordinate to the new democratic authorities"* [6]. Serra alludes to the 2009 coup in Honduras as evidence for the continued centrality of democratic civilian control [7]. David R. Mares explores the various public opinion surveys conducted by Latinobarómetro and the Latin American Public Opinion Project (LAPOP) to examine attitudes toward the military and democratic civilian governance [8]. He f nds that most countries remain vulnerable to coups due to *"distrust of government and a polarization of politics"* combined with a high regard for the military [9].

For my paper, I move beyond this focus on democratic civilian control to use an analytical framework that f rst arose through a debate between David Pion-Berlin and Thomas Bruneau in 2005-2006. Pion-Berlin contends that democratic civilian control in Latin America is better than most give credit, as he differentiates between the *"balance of competence"*, which *"tilts still heavily in favor of the military"*, and the *"balance of power"*, which he argues *"has moved in favor of civilians"* [10]. Thomas Bruneau responded to Pion-Berlin's analysis of Latin America by contending that civilians needed to develop suff cient knowledge about defense and security issues [11]. Bruneau proposed analyzing civil-military relations with a new analytical framework that moves beyond the traditional focus on democratic civilian control. Bruneau and his colleague Matei proposed a trinitarian analytical framework analyzing civil-military relations through democratic civilian control, effectiveness, and ef f ciency [12]. Of the three, I focus on the criterion of effectiveness and apply it to the security forces of Nicaragua and El Salvador, respectively.

Matei's articulation of the trinitarian framework contains several points relevant to my analysis. First, Matei ar gues that, faced with *"network-centricity and network-like traits of new security threats"*, security roles and missions have expanded beyond a traditional military focus to include police and intelligence agencies [13]. I use this perspective in analyzing the security sectors of the two states. Second, Matei argues that emphasis on control

is not enough; instead, scholars must assess *"the perspective of making effective security decisions and policies"* [14]. Effectiveness, in the case of El Salvador and Nicaragua, is the central focus of my analysis of security forces' approaches to violence. Finally, Matei proposes three indicators with which to evaluate effectiveness of a security force in fulfilling its assigned missions: plans, structures, and resources [15]. I will use these indicators to evaluate the effectiveness of the internal security forces in El Salvador and Nicaragua.

I argue that Nicaragua's security forces had plans, structures, and resources better capable of adapting to the new threats posed by gang violence that arose during the early 1990s democratization period. These included community-based security organizations, a highly trained civilian police force, adequate funding, and sociologically sound rehabilitative plans to confront criminality and gangs. Conversely, El Salvador's security forces underwent a profound disruption and reorganization during the democratic transition that left it vulnerable and less capable of adapting to new security challenges. First, I will examine the historical factors that have influenced the effectiveness of the security forces. Then, using Matei's indicators of effectiveness, I evaluate and contrast Nicaragua and El Salvador's security forces.

2. HISTORICAL FACTORS INFLUENCING EFFECTIVENESS

2.1. El Salvador

Notwithstanding the emphasis on reforming the military and police, the legacy of the civil war period had implanted deep-rooted habits of impunity and military domination of internal security. As the Center for Strategic and International Studies' (CSIS) report on police reform in Latin America asserts, *"Fighting communism during the Cold War led to aiding Latin American defense establishments that controlled the police"* [16]. During the civil war, El Salvador's police functioned, as CSIS states, *"as a fourth branch of the military"* [17]. No Central American state received more U.S. foreign military assistance than El Salvador; between 1981 and 1992, the U.S. delivered a total of $273 million for the military and $860 million in general economic aid [18]. High military prerogatives in El Salvador were established during the 1980s war and have been slow to diminish. The United States unwittingly helped foment serious impunity problems in the security forces in El Salvador. As Jack Spence points out, *"They* [El Salvador's military] *knew the U.S. needed them"* and used this dependence to ensure their *"impunity from the law"* [19]. According to the Truth Commission, *"any organization in a position to promote opposing ideas that questioned official policy was automatically labeled as working for the guerillas"* [20].

El Salvador's security forces underwent a profound transition after the 1992 UN-sponsored Chapultepec Peace Accords. The accords were the result of two years of negotiations between the government and the FMLN insurgents [21]. Reforms were ambitious in scope with a number of specific goals, including reforming military doctrine, altering military education, purifying security forces of human rights abusers, reducing prerogatives, eliminating paramilitary actors (like the infamous death squads), and creating a civilian-led, professionalized national police [22]. The Chapultepec Peace Accords

called for the establishment of the Civilian National Police (PNC) with a central focus on protecting human rights—an effort to prevent the recurrence of the widespread torture and killings of state security forces and death squads during the civil war [23]. Like many militaries after civil wars, El Salvador 's military reorganized after the peace accords to include equal representation of former guerilla insurgents.

The transition for the security sector has not yet resulted in an effective and capable security force. The legacy of state-directed violence and ongoing impunity has left a security sector with high prerogatives and weakened state institutions, as Barany details [24]. These high prerogatives manifested early on during the transition in the blanket impunity granted the military in 1993 after the United Nations-sponsored Truth Commission for El Salvador found over 85 percent of serious acts of violence committed by agents of the state [25]. Despite only being authorized for emergencies, El Salvador's military has continued to act as a primary agent in the struggle against the gang problem. The PNC suffers from endemic corruption, ineffciency, resource shortfalls, poor administration, and lack of uniformity in collection of evidence [26].

The negotiated settlement between the FMLN and the government resulted in a purified but severely weakened security sector. By agreement, the PNC was comprised of mostly civilians with no prior background in policing, with the exception of roughly 20 percent of the top positions allotted to both the security forces of the former regime and the FMLN [27]. Faced with the disruptions caused by such a massive institutional reorganization, El Salvador has continued to rely on its military to conduct security operations and augment police efforts to confront growing gang violence using Mano Dura strategies. As Barany observes, other than the military, *"the state simply has no one else to turn to"* [28]. In contrast, as I will show next, the Sandinistas had, in 1979, already replaced a repressive security state with a new structure of state security . The Nicaraguan security forces were more capable of enduring the transition to democracy, as their transition did not entail such a severe restructuring.

2.2. Nicaragua

After the 1979 Sandinista revolution, the Sandinista National LiberationFront (FSLN) subordinated the military and police under its control: *"From 1979 until 1990, it was impossible to separate the state, the army, and the party"* [29]. As Margarita Villareal succinctly states, the security forces were *"part of the political and ideological apparatus that supported the revolution"* [30]. The Sandinistas consolidated control over of the new security sector , which consisted of the Sandinista Peoples Army (EPS), a newly created Civilian National Police (PNC), and Comités de la Defensa Sandinista (CDS). Although controlled by a one-party state during the 1980s, the security sector formed and retained its fundamental characteristics through the transition to democracy.

A declassified U.S. Army intelligence report from 1983 offers insights into how the Sandinistas established and shaped their newly formed armed forces and police. According to the report, the Sandinistas invited the Panamanian National Guard in to train the newly created national police force [31]. Several hundred Nicaraguan police officers also attended police academies in Panama during the years after the

revolution [32]. The Army intelligence report details how the Nicaraguans soon created a sophisticated police academy that *"includes an 8-month course emphasizing physical fitness, criminology, sociology, law, and political indoctrination"* with *"advanced training"* for *"specialized administrative positions such as prosecutors or police chiefs"* [33].

The report makes note, in particular, of a key element of Nicaragua's emerging security apparatus: Comités de la Defensa Sandinista (CDS), or Sandinista Defense Committees. The CDS formed an important and unique cornerstone of the state security apparatus. The effectiveness of the unit-level model for citizen security derived from the greater information-gathering capabilities inherent to the system. Membership in the CDS was dif fuse and widespread. By 1986, membership in the CDS included 500,000 out of a total population of 3.5 million [34]. Modeled after the Cuban Defense Committees, the system of CDS combined citizen security with providing for social welfare, enabling political participation, and delivering public goods [35].

After the revolution of 1979, the Nicaraguans established a security structure that was capable of withstanding a democratic transition without requiring massive reform, as in the case of El Salvador. One major source of grievances leading to the Sandinista revolution had been the repressive character of the dictator Somoza's security apparatus, in particular the National Guard. As the current head of the PNC, Aminta Granera, a former nun and FSLN revolutionary, stated regarding the establishment of the national police in 1979, *"We didn't know how to be police. We only knew we didn't want to be like the Somozan Guard"* [36]. The Sandinistas consciously formed the internal security institutions to function in contrast with Somoza' s repressive legacy.

3. EVALUATION OF EFFECTIVENESS

In this section, I use Matei' s indicators of plans, structures, and resources to assess the ef fectiveness of El Salvador and Nicaragua' s respective security forces. Matei def nes plans as any formulated policies directing the security forces to ful ll one of their assigned roles and missions, which for my paper center on internal security and strategies to counter rising levels of gang-related violence [37]. Structures, according to Matei, include the processes *"to both formulate the plans and implement them"*, usually in the form of effective state agencies that coordinate policies well throughout the government [38]. Finally , Matei def nes resources as *"political capital, money, and personnel"* that allow forces to *"implement the assigned roles and missions"* [39].

3.1. El Salvador

3.1.1. Plans: LOW

The reactive nature of El Salvador's policies toward gang violence has demonstrated the lack of an enlightened and sophisticated internal security plan. McCulloch and Pickering aptly de f ne crime prevention as *"non-punitive measures that reduce opportunities to commit crime or address the broader context in which people commit crime through a range of social and environmental strategies"* [40]. A U.S. Government Accountability Off ce (GAO) report from 1992 pointed out how *"the government* [of El Salvador] *had not yet developed plans outlining the structure, operations, or resource*

needs of the police force" [41]. As a result, the Director -General of the police force was prohibited, per negotiation with the FMLN, from having any af f liation with the previous police forces [42]. The f rst director, a businessman, had no prior police experience *"to draw on as he prepares the plan"* [43]. Yet effective anti-gang policies often require sophisticated plans, as Preciado argues [44]. El Salvador has instead relied on Mano Dura strategies that incriminate and incarcerate gang members, using its military to make up for the def ciencies in the police.

3.1.2. Structures: LOW

Poor administration and lack of uniformity in collection of evidence reveal structural and institutional def ciencies in the national police [45]. El Salvador's Strategic Institutional Plan 2009-2014 indicates several weaknesses in the police force including *"lack of incentives"*, *"little development of police investigation and intelligence"*, *"lack of standardization in the databases"*, *"fragmented organization"*, and *"lack of training"* among other key def ciencies [46]. El Salvador 's Mano Dura strategy has tried to f ll the gap with the military . In 2015, the president ordered up to 7,000 of the military's total force of 25,000 to patrol the streets, and of f cers operate with wide latitude since the government proclaimed off cers will not be charged for killings professed to be in self-defense [47].

3.1.3. Resources: LOW-MEDIUM

The national police in El Salvador suffer from chronic resource shortfalls [48]. The lack of resources allocated to the police is apparent by the fact that private security guards outnumber police 28,600 to 22,000 [49]. One newspaper correspondent in San Salvador describes the chaotic security situation as of August 2015:

"Schools are protected by barbed wire and often patrolled by soldiers; private security guards carrying shotguns man the entrance to major businesses and police, armed with rifles, conduct random checks on the highways.…it is not uncommon to see soldiers in balaclavas riding on the back of flat-bed trucks mounted with heavy machine guns. Few people pay them a second glance."[50]

The PNC itself reports that its *"limited operational budget"* hinders effectiveness [51]. The government in 2005 reported 14,000 gang members incarcerated but only 45 rehabilitated through an "Open Hand" initiative, due in part to lack of funding and resources [52].

3.2. Nicaragua

3.2.1. Plans: HIGH

The chief of the National Police in 2014, Aminta Granera, attributed the anti-gang and anti-crime successes to a combination of measures that are *"preventivo, comunitario y proactivo"* (preventative, community-based, and proactive) [53]. The Nicaraguan police created the Off ce of Juvenile Issues as the central node for the development for its preventative model of gang violence prevention [54]. José Luis Rocha commends the *"exceptional character of the Nicaraguan police"*, especially their *"conciliatory discourse and propaganda"* and their attempt to *"overcome repressive penal models"*, instead treating gang members as objects of social rehabilitation [55]. Rocha contends that the National Police approached the issue of gang violence in a distinctively sophisticated and rehabilitative manner:

"The Sandinista elite's ability to use sociological terms and concepts

and their notoriously superior discursive capacity in relation to their Central American colleagues enabled the appearance of innovative proposals and an assessment of citizen security that deepened the analysis of youth gangs without criminalising their members." [56]

3.2.2. Structures: MEDIUM-HIGH

As The Economist dryly observed, *"Nicaragua's police force is in danger of giving socialism a good name"* [57]. As Rocha ar gues, the police since the democratic transition are comprised of two distinct factions that complement one another: the traditional elite and the FSLN [58]. Rocha contends that the FSLN faction has encouraged the rehabilitative policies toward gangs and resisted pressure from traditional elites who sought to implement policies similar to mano dura [59]. Nicaragua' s police operate independently from the military, which conduct limited internal security missions. Instead, the military's role in internal security is limited to about 2,000 troops who provide security for Nicaragua' s coffee production [60]. In contrast to El Salvador, Nicaragua has not used the military for anti-gang and anti-drug policy responses. Moreover , Nicaragua has created thou sands of Comités de Prevención Social del Delito, or Committees for the Social Prevention of Crime, comprised of 20,000 volunteers [61]. As Cruz points out, the state excels at *"involving citizens in crime prevention committees—not in mere neighborhood watch groups—in the development of local safety strategies"* [62].

3.2.3. Resources: HIGH

Nicaragua's security budget has remained steady at an average of 1.2% of GDP between the years 2005 and 2013 [63]. The share of the budget allotted to the PNC has risen by 64% over the same eight years, a larger increase than any other security organization [64]. Nicaragua has also devoted resources to many programs to prevent gang violence, including sports tournaments, cooperation with social services volunteers, and scholarships for youth [65]. The national police have a rigorous education program mandating four - year degrees at the National Police Academy for aspiring commissioned off cers [66]. The government funds training and education courses for ongoing instruction in the science of community policing [67].

4. CONCLUSION AND RECOMMENDATIONS

El Salvador and Nicaragua have experienced dramatically dif ferent levels of citizen security in the years since democratization in the early 1990s. In this paper, I have examined this divergence using a civil-military relations framework to evaluate the security forces of each state. First, I outlined the historical factors that inf uenced and shaped each state' s security sectors. I ar gued that the divergence in ef fectiveness arose from the dif ferent development paths taken during the 1980s civil war periods. Dominated by an authoritarian military using any means necessary to f ght the FMLN insurgency, El Salvador 's security forces underwent a profound period of reform and puri f cation brought about by the 1992 Chapultepec Peace Accords. Nicaragua's security forces, on the other hand, formed ef fective institutions after the break with Somoza's dynasty that maintained their basic structures through the transition to democracy . I then

used the criterion of effectiveness developed by Bruneau and Matei, along with Matei's three indicators of effectiveness, to evaluate each state. **Table 1** outlines the results of my analysis.

Table 1. Assessment of Internal Security Forces in El Salvador and Nicaragua

	Plans	Structures	Resources
El Salvador	LOW	LOW	LOW-MEDIUM
Nicaragua	HIGH	MEDIUM-HIGH	HIGH

My analysis points to specific areas in which El Salvador's security forces must improve to achieve increased effectiveness. First, El Salvador's security forces should develop coherent anti-gang strategies that emphasize the role of rehabilitation and move away from Mano Dura strategies. Recent developments in El Salvador suggest government officials are beginning to understand this. On October 26, 2015, El Salvador's Security and Justice Minister formally presented Congress with a proposed law that would grant legal immunity to gang members who have not committed serious crimes, affording them the opportunity to enter into a government-sponsored rehabilitation program [68]. The proposed law, formally called the *"Gang Reinsertion Law"*, faces challenges due to inadequate funding, a problem that Lohmuller argues caused the gang truce to fizzle in 2012 [69]. Nevertheless, the proposal marks a step in the right direction. Second, the use of the military in El Salvador should come as a last resort, since internal security against gangs requires more sophisticated policing and community-prevention strategies. The lasting solution is to fix the structure of internal security; specifically, the state must provide the police force with better quality education, career incentives, better pay, and professional development. Finally, El Salvador needs to increase funding for the police. To this end, a recent sign of hope emerged when El Salvador's congress enacted a new tax on wealthy individuals and large companies to raise revenues for the PNC [70].

REFERENCES

[1] Jonathan Watts, "One Murder Every Hour: How El Salvador Became the Homicide Capital of the World", The Guardian, 22 August 2015, http://www.theguardian.com.world/2015/aug/22/el-salvador-worlds-most-homicidal-place.

[2] "PNUD destaca baja tasa de homicidios y de robos en Nicaragua", La Prensa, 27 May 2014, http://wwwlaprensa.hn/mundo.americalatina/713329-98/pnud-destaca-baja-tasa-de-homicidios-y-de-robos-en-nicaragua.

[3] In Latin America, homicide rates are the most reliable indicators of crime. As Mark Ungar notes, the existence of the cifra negra, or black figure, hinders accurate representation of most non-homicide crimes. Homicide rates are the most accurate due to the many international agencies, NGOs, and governments that track them. See Mark Ungar, Policing Democracy: Overcoming Obstacles to Citizen Security in Latin America (Baltimore: Johns Hopkins University Press, 2011), 48-50;

[4] Thomas Bruneau, "Impediments to the Accurate Conceptualization of Civil-Military Relations", in The Routledge Handbook of Civil Military Relations, ed. Thomas C. Bruneau and Florina Cristiana Matei (New York: Routledge, 2015), 15.

[5] Alfred C. Stepan, Rethinking Military Politics: Brazil and the Southern Cone (Princeton, NJ: Princeton University Press, 1988), 92-98.

[6] Narcis Serra, "Prologue", in Debating Civil Military Relations in Latin America, eds. David R. Mares and Rafael Martínez (Chicago: Sussex Academic Press, 2014), viii.

[7] Ibid.

[8] David R. Mares, "Citizen Security, Democracy and the Civil-Military Relationship", in Debating Civil Military Relations in Latin America, eds. David

R. Mares and Rafael Martínez (Chicago: Sussex Academic Press, 2014), 81-100.
[9] Ibid., 98.
[10] David Pion-Berlin, "Political Management of the Military in Latin America", Military Review 85, no. 1 (Jan/ Feb 2005), 26.
[11] Thomas C. Bruneau, "Civil Military Relations in Latin America: The Hedgehog and the Fox Revisited", Revista Fuerzas Armadas y Sociedad 19, no. 1-2 (2005), 113.
[12] Ibid., 122.
[13] Florina Cristiana Matei, "A New Conceptualization of Civil-Military Relations", in The Routledge Handbook of Civil Military Relations, ed. Thomas C. Bruneau and Florina Cristiana Matei (New York: Routledge, 2015), 26.
[14] Ibid.
[15] Ibid., 32.
[16] Stephen Johnson, Johanna Mendelson Forman, and Katherine Bliss, "Police Reform in Latin America: Implications for U.S. Policy", Center for Strategic and International Studies (February 2012), 16. http://csis.org/files/publication/120228_ Johnson_PoliceReform_web.pdf.
[17] Ibid.
[18] John A. Booth, Christine J. Wade, and Thomas W. Walker, Understanding Central America: Global Forces, Rebellion, and Change (Boulder, CO: Westview Press, 2015), 347.
[19] Jack Spence, "War and Peace in Central America: Comparing Transitions Toward Democracy and Social Equity in Guatemala, El Salvador , and Nicaragua", Hemisphere Initiatives (2004), http://lanic. utexas.edu/project/hemisphereinitiatives/ warpeace.pdf, 47.
[20] Ibid., 9.
[21] United Nations, Chapultepec Peace Agreement, 30 January 1992, http:// peacemaker.un.org/sites/peacemaker.un.org/ files/SV_920116_ChapultepecAgreement.pdf.
[22] Ibid.
[23] Ibid.
[24] Zoltan Barany , "Building National Armies after Civil War: Lessons from Bosnia, El Salvador, and Lebanon", Political Science Quarterly 129, no. 2 (2014).
[25] Elisabeth Jean Wood, Insurgent Collective Action and Civil War in El Salvador (Cambridge: Cambridge University Press, 2003), 8.
[26] Orlando J. Perez, Civil Military Relations in Post-Con fict Societies: Transforming the Role of the Military in Central America (New York: Taylor & Francis, 2015), 63.
[27] Charles T. Call, "War Transitions and the New Civilian Security in Latin America", Comparative Politics 35, no. 1 (October 2002), 11.
[28] Barany, "Building National Armies after Civil War", 230.
[29] Ibid.
[30] Margarita Castillo Villarreal, "Nicaragua: Civilians and Military After the Sandinista Revolution", Military Review 85, no. 2 (2005), http://search.proquest.com/doc view/225307641?accountid=12702, 6.
[31] United States Army Intelligence and Threat Analysis Center, Army Intelligence Survey: Nicaragua, Vol. 3 (1984), http:// search.proquest.com/docview/1679048599? accountid=12702, 1-24.
[32] Ibid.
[33] Ibid.
[34] Kate Stout and Richard Dello Buono, "Nicaragua's Emerging Model of Popular Justice", Humanity and Society 10, no. 2 (May 1, 1986), http://search.proquest.com/do cview/1309370859?accountid=12702, 210.
[35] Ibid.
[36] The Economist, "A Surprising Safe Haven", 28 January 2012, http://www . economist.com/node/21543492.
[37] Matei, "A New Conceptualization", 32.
[38] Ibid.
[39] Ibid.
[40] Julie Ayling and Roderic Broadhurst, "The Suppression of Organized Crime: New Approaches and Problems", in Policing and Security in Practice: Challenges and Achievements, ed. Tim Prenzler (New York: Palgrave Macmillan, 2012), 45.
[41] U.S. Government Accountability Off ce, "Aid to El Salvador: Slow Progress in Developing a National Civilian Police", September 1992, 4. http://archive.gao.gov/ d35t11/147695.pdf.
[42] Ibid.
[43] Ibid.
[44] Luis E. Preciado, "State Approaches Toward Reducing Youth Violence in Honduras and Nicaragua" (Master 's thesis, Naval Postgraduate School, 2015), 68.
[45] Perez, Civil Military Relations in Post-Conf ict Societies, 63.

[46] RESDAL, Public Security Index: Central America, Red de Seguridad y Defensa de América Latina (2013), last modi f ed 17 October 2013, 55. http://www .resdal.org/libro-seg-2013/resdal-index-2013.pdf.
[47] Watts, "How El Salvador Became the Homicide Capital of the World".
[48] Ibid.
[49] Clare Ribando Seelke, "El Salvador: Background and U.S. Relations", Congressional Research Service, 19 May 2015, 9.
[50] Watts, "How El Salvador Became the Homicide Capital of the World."
[51] RESDAL, Public Security Index, 55.
[52] José Miguel Cruz, "Or ganized Civil Society and Gangs: Alternative Responses by Central American Organizations", in Street Gangs in Central America (San Salvador: UCA Publishers, 2007), 134.
[53] "PNUD destaca baja tasa", 27 May 2014.
[54] José Luis Rocha, "Street Gangs of Nicaragua", in Maras: Gang Violence and Security in Central America, eds. Thomas Bruneau, Lucía Dammert, and Elizabeth Skinner (Austin: University of Texas Press, 2011), 116.
[55] Rocha, "Street Gangs of Nicaragua", 116.
[56] José Luis Rocha Gómez, "The Political Economy of Nicaragua's Institutional and Organisational Framework for Dealing with Youth Violence", Crisis States Programme, Working papers series 1, no. 65 (June 2005): 5.
[57] The Economist, "A Broken System: Citizens' security is the region' s biggest problem. Time to improve criminal justice", 12 July 2014, http://www .economist.com/news/americas/21606864-citizens-security-regions-biggest-problem-time-improve-criminal-justice-broken.
[58] José Luis Rocha Gómez, "Mapping the Labyrinth from Within: The Political Economy of Nicaraguan Youth Policy Concerning Violence", Bulletin of Latin American Research 26, no.4 (2007): 543.
[59] Ibid.
[60] Peréz, Civil-Military Relations in Post-Conf ict Societies, 75.
[61] Rocha, "Street Gangs of Nicaragua", 118.
[62] Cruz, "Or ganized Civil-Society and Gangs", 143-44.
[63] RESDAL, Public Security Index, 117.
[64] Ibid.
[65] Rocha, "Street Gangs of Nicaragua", 118.
[66] Preciado, "State Approaches", 57.
[67] Ibid.
[68] Michael Lohmuller , "El Salvador Proposes Gang Rehabilitation Law", InSight Crime, 29 October 2015, http://www . insightcrime.org/news-briefs/el-salvador-proposes-gang-rehabilitation-law.
[69] Ibid.
[70] "El Salvador Congress approves tax packagetof ghtviolent crime", Stabroek News, 31 October 2015, http://www .stabroeknews.com/2015/news/regional/10/31/el-salvador-congress-approves-tax-package-to-fight-violent-crime/.

ACKNOWLEDGMENT

I am indebted to Cris Matei, Lecturer at the Center for Civil-Military Relations at the Naval Postgraduate School for her wise counsel and expert instruction. The views expressed are the author 's and do not necessarily represent the views of the United States Navy, the Department of Defense, or the United States Government.

UNCONVENTIONAL WAR AND WARFARE IN THE GRAY ZONE. THE NEW SPECTRUM OF MODERN CONFLICTS

Mirosław BANASIK

Military Forces, Poland

Experiences of the last couple of years indicate that political objectives are increasingly achieved without official declarations of war. Armed forces are used in untraditional ways and the so-called substitute troops begin to play an increasingly bigger part. The article aims to characterize the conflicts of alternative nature below the level of open war that are on the border between war and peace. The content of the article presents the theory of unconventional warfare and its description, and familiarizes the reader with the concept of grey zone conflicts. It further shows the challenges linked to rivalry for influence zones and security provisions.

Key words: *gray zone warfare, unconventional warfare, conflict, challenges, armed force.*

1. INTRODUCTION

In the second decade of the 21st century in the field of international security one can explicitly observe a new trend in conflicts taking place in an untraditional manner. The scale and scope of the actions conducted as part of the conflicts are deliberately limited and kept by aggressor at the level below identifiable regular, open war-level. Armed forces, however, do not play the crucial part they used to. Non-state actors, terrorist and criminal, oppositional and insurrectional, national-liberation organizations and others come first. Challenges for the world related to instabilities, uncertainties and changes in the environment of international security are created chiefly by non-state networked transnational organizations. It does not mean, however, that state establishments or the organizations that consider themselves as states do not stand behind those organizations. The annexation of Crimea made by the Russian Federation (RF) and support granted to Ukraine as a result of that, aggressive operations against China in the South China Sea, advertising and expansion of the Islamic State are examples of unconventional warfare. At the same time, it is more and more difficult to indicate the difference between war and peace and that creates big problems for politicians to prepare appropriate answers. Combination of unconventional and irregular operations along with asymmetric measures, manipulation in political and ideological area points out unconventional operations transferring into a grey zone. Wars in the grey zone also

referred to as unconventional wars are characterized by impact in all possible dimensions, usage of a variety of methods, measures and combat tools and they have a great impact on the destabilization of the global security environment. To use force nowadays in an era of limited resources and opportunities by taking challenges eff ciently while also mitigating the contradiction between diagnosed and undiagnosed threats requires an integrated approach to the war in grey zone, as well as an international strategy enabling forces to f ght between war and peace.

In such a problematic situation, the aim of this article is to explain the concepts and the core of modern conf icts below the threshold of open war. Its contents present solutions to the following problems:

1) What is the theory on waging unconventional war?

2) What the does the concept of grey zone refer to?

2. UNCONVENTIONALWARFARE

The term of unconventional war has been used since the 50s, but its elements could be identi f ed even in ancient times. The characteristic feature is that there were many concepts in use to de f ne the same phenomenon which caused the concepts of revolutionary war , insurrectional, rebellious actions, 5th column, special, unconventional and terrorist war to be used interchangeably. The understanding of these concepts was, nevertheless, restricted to the method of waging war. President J. F . Kennedy giving his speech at West Point in 1962 indicated the common characteristics are rather examples of common means that use tactics and techniques of combat. In other words either intelligence operations of Special Forces or guerilla operations are not unconventional warfare (Wall, p. 111). Unconventional warfare differs from other forms of wars by the use of irregular, local or proxy forces (armed subdivisions) against local power or newly established governments. The context above shows that the intervention operations of forces in Iraq or Afghanistan consisting in the organization, equipment, training and support of local security force in the f ght against rebels cannot be understood as unconventional warfare. Nevertheless, local force can for example conduct campaigns with the use of various forms and methods of combat against of f cial power and can be supported from outside by other states. Support can be done by provision of f nancial sources, military equipment or building new capabilities on the spot. It can be also done by or ganization of training, advising on operational issues, coordination by diplomatic assistance, supporting by logistics, or even conducting kinetic operations for gaining the advantage of local rebellious or rebel force (Counter – Unconventional Warfare 2014:3). Thus, the interests of external states are supported by local armed forces that thus substitute the forces of the sponsor-state.

The term of unconventional warfare is not quite accurate from the international law point of view . The word unconventional can be misunderstood and it means that this type of warfare is inconsistent with international conventions which constitute the source and base for military law. In the opinion

of those wars by ambush, subversions, assassinations, inf ltration and avoidance of confrontation that thus attrite and exhaust the enemy instead of engaging him (Kennedy , 1962). Literature on the subject includes many def nitions of unconventional war. The term, however, has dif erent meanings depending on the nation and institution that uses it. For the Special Forces of the USA unconventional war is understood as the activities that enable a resistance movement or insur gency forcing the enemy to surrender , conquering or overthrowing the governmental or occupational powers by operating under ground, using guerilla operations or assistance force in the areas denied (Special Forces, 2010:1-1). The def nition above gives a new context to the concept of unconventional warfare which means that it is not a synonym to unconventional subdivisions, unconventional tactics or methods. It becomes an activity or operation sponsored from outside and it is not restricted to internal resistance movements. Identif cation of sponsors and functions implemented as part of the mission leads to simpler understanding of the role of actors taking part in war and the desired f nal state reached as a result of the unconventional warfare. Thus, oriented reasoning opens a new discussion and inspires to study the theory.

Perceiving warfare as a mission instead of a method of action allows the researchers to consider historical efforts from a new perspective. According to R.C. Agee and M. K. DuClos certainly not all cases will be able to be quali f ed as unconventional warfare, because they do not meet the criteria of the def nition. It seems, however, that they will be able to be f t in the terminology of irregular wars (Agee and DuClos, 2012, p.5). Irregular warfare is defined very widely and includes a violent struggle (combat) among states or non-state actors for legitimacy of function of power and influence over a specified population (The Joint Publication 1-02, 2016:1 19). A. E. Wall indicates the relationship between irregular warfare and unconventional warfare and defines three distinctive features that constitute them. He includes (Wall, 2011):

1) unconventional warfare waged by means of local force;
2) local force as an irregular (non-state) force;
3) unconventional warfare that supports activities oriented against off cial government or occupational force.

The criteria of distinction between irregular and unconventional warfare is the third distinctive feature. It shows that irregular warfare is combat with the use of violence between state and non-state actors, but unconventional warfare can be waged in order to support unconventional conf icts (state against state) or insurrectional operations. The doctrine of Special Force of the USA points out that unconventional warfare includes a wide spectrum of military and non-military operations, usually spread in time, conducted by proxy forces that are organized, equipped and trained as well as supported to various degrees and commanded from the outside (The Joint Publication3-05.1 2007:399).Activities conducted as part of unconventional warfare include but are not limited to guerrilla and subversive operations, sabotage, unconventional assistance and intelligence operations, and

of C. R. King it should be obvious that the word means atypical and unorthodox methods of warfare. In no way, however, it should have any consequence leading to questioning the international law in conducting military operations (King 1972:94).

Unconventional warfare aims at ensuring the interests of the state focused on the use of the weaknesses of the adversary in the political, military, economic and psychological f elds by creating and assisting the local resistance forces. In order to reach those objectives instruments with military, political, economic and psychological impact are utilized. Unconventional warfare is indirect, relies on local methods of waging combat and includes underground activity of volunteers, revolutionists, partisans, spies, saboteurs, provocateurs as well as the application of corruption and blackmail (W all 2011:111). These activities cannot be, however , discretionary. They require deliberate organized operations, thus, they require a campaign plan usually executed under the command of a geographic combatant commander . Secondly, employment of elements of impact instruments being at disposal of state that seek to reach its own objectives will require strategic decision-making. The command and control of a state waging such an unconventional warfare will then decide whether state governments of the opposing side should be coerced only to selectively speci f ed actions or the aim will be to destabilize the internal situation, or to overthrow the legal or illegal governments completely. Non-state actors who occupy specif c territory can be also removed from power , as it is the case of the Islamic State. Thirdly, intelligence and tactical employment of the special forces through and with the local underground forces, guerilla forces or other oppositional forces is usually relevant (Manea, 2015). It is worth remembering that both a state and a non-state entitiy can resort to unconventional warfare.

3. THE CONCEPT OF WAR IN THE GREY ZONE

The conf icts of the second decade of the 21 st century demonstrate the occurrence of a wide spectrum of activities and entities taking part in it, the use of armed forces, re f ned methods and ways of impact. It is possible to see a variety of aspects of waging armed struggle, violence, forms of warfare, aspects that are def ned as complex ones. There are academic debates on hybrid, nonlinear, asymmetric or new generation warfare and the term of irregular war becomes predominant. The conclusion of those discussions can come down to seemingly the trivial question as to what nowadays the term of war should mean. The classical understanding of this concept loses its significance, because modern conflicts take place between the state of war and the state of peace, the momentum of military operations is intentionally restricted and the aggression level is stimulated. Together with the conflict in the Ukraine and occurrence of the term of hybrid war one can more and more often notice the concept of war in the grey zone or below the level of

war being in use (Konferencja w AON 2015). In the official doctrinal documents of the USA the concept of grey zone appeared in the four-year defense review in 2010 for the first time. The documents say that ambiguities caused by the state of war and peace will constitute the challenge for the strategic security environment (Quadrennial Defense Review Report 2010:73). The term of war in the grey zone means deliberate, multidimensional impact on the states below the limit of armed force aggression (Hoffman 2016:26). In these types of conflicts, in the opinion of F. Hoffman, an integrated suite of national and subnational instruments of power are employed in an ambiguous war to gain specified strategic objectives. In order to increase the level of military power impact proxy subdivisions are applied without explicit indicators as to state integrity and that makes it possible to unmask them (Hoffman 2016, p. 26). P. Kapusta understands the war in the grey zone somewhat differently. His definition referring to the challenges of the grey zone is more general and also includes non-state objects. According to him, the grey zone includes competitive impacts between and within the borders of states as well as non-state actors taking place between the duality of war and peace (Kapusta 2015, p. 20). Duality is the cause of ambiguity. Ambiguities result from the nature of conflict, lack of certainty as to the actors engaged, uncertainty of policy and the aspects of political regulations. The challenges of grey zone result from the combination of a variety of conflicts characterized by common features, but in reality conflicts become unconventional. It means that they do not start when the armed struggle begins. Threats or possibilities for extending past conflict termination by virtue of the increasing hostility occur, though they are not always clearly recognizable. In the grey zone single armed clashes of unorganized groups that are not seeking to achieve any political or military objectives but may be exploited by external actors may take place. Unconventional conflicts can be the consequence of government collapse and anarchy in society. Violence and often terrorist-like activity can occur out of social frustration with no identifiable purpose. This type of conflict is non-conventional, because it is difficult to determine the objectives and methods of the actors, and perhaps difficult to even determine the actors, and thus hard to apply conventional elements of power (Maxwell, 2015). It should be noted that there is a lack of simple solutions to respond to challenges, because every situation involves unique actors and a variety of complex aspects as root of problems. According to P. Kapusta the challenges of the gray zone go beyond the ordinary, normal, peaceful geopolitical rivalry. They are aggressive in their nature, ambiguous and depend on the perception of the problem (Kapusta 2015:20).

The concept of grey zone warfare is controversial in its essence. Some analysts indicate that in the future it will constitute the basic source of challenges for international security. Others claim that it is too much publicized and brings nothing new to the theory of the art of warfare.

A. Elkus confirms quite controversially that the grey zone wars concept lacks strategic sense (Elkus 2015). One can ask then, what in fact is the grey zone warfare? Certainly , it is not a formal warfare and does not resemble traditional armed conficts between states. Grey zone confict is unique for its particular characteristics that should include amplitude with its variety, repressions referring to many areas of state function, force used in many ways but so as to create ambiguity in the assessment of the operations objectives and the entities taking part in it, as well as difficulties in the assessment of actual involvement of armed force, compliance to international regulations and legal norms (Barno, Bensahel 2015). Nevertheless, the level of aggression is never exceeded which is a hallmark of an open interstate war.

The activities in the grey zone are such forms of confict where political objectives are reached by coherent and integrated campaigns chiefy with the use of non-military and non-kinetic tools. It does not seek spectacular success for a specifc moment, but rather moves gradually seeking to achieve the planned final state in a longer period of time (Mazarr 2015, p. 58). The objectives that aim at the modification of some security environment aspects and more specifed advantages than conquering territory are reached by minimization of the scope and scale of outright struggle, but the confict alone is ambiguous. In the opinion of J. I. Votel success of the struggle will depend on the ability to navigate between traditional war and peace (Votel 2015, p. 7), so not to exceed the clearly specifed red line and avoid unmasking and exposing to some punishment, e.g. from international organizations. Minimizing the scale and scope of aggression is not a new phenomenon as it can be seen in Sun Tzu's works (Tzu, p. 22). It seems also that Clausewitz' total warfare without political limitations in practice is rather impossible. The political context of war in practice always imposes limitations both in scope and scale, as well as in the violence level (Elkus 2015).

A relatively low level of aggression is also the main determinant for moving the challenges related to rivalry to the grey zone. These challenges are very wide-spread and ambiguous in their nature. More and more states experimenting with conficts in the grey zone apply substantially techniques of conventional armed struggle. Asymmetric operations are widely used. Confict might as well turn into outright operations if sofar irregular operations do not bring the results expected. Grey zone can be also intentionally used for campaign before outright warfare starts and not as its alternative (Mazarr, p. 58).

The scope of the instruments, forms and techniques of power employed can be varied and involve cyberspace, political fght, economic blackmail, propaganda, informative and psychological warfare, willful misleading of the international opinion, terrorist and criminal activities, sponsoring, equipment and training of under ground force or oppositional force to create so-called creeping conficts, corruption, sabotage and other random impact to the threats with use of regular armed force including the weapon of mass destruction. Generally, all operations

will be intended to create ambiguity and also to determine the culprit of the existing problems and create certain obstacles in preparation of an appropriate response. Usually , the level of aggression will grow and various extortions on the opposing side will be camou f aged, though, while intending to change the present status quo (Brands 2016).

The use of armed force nowadays is different than conventional means. An example in this respect is the conduct of China in the last decade in South-China Sea which imposes on adversaries a costly strategy based in the f rst place on the covert use of ar med force, for example by sending the Shenyang J-1 1 and Xian JH-7 combat fighters to the region of the Paracel Islands at the end of February 2016. By deploying the rockets and radars as well as building runways at the reefs of the South China Sea they change the operational landscape (Interia.pl 2016). It thus tries to restore its position in the world through military operations, a method that reminds of similar methods employed by the Russian Federation. Worth reminding in this respect are the inter alia demonstrative revitalization of the Maritime Forces in the South Atlantic (Bednarzak 2016), base establishment in the region of Arctic or large-scale airborne landing forces exercises in the region of the Baltic States. Kremlin has the will and instruments to use military factor in a way that is disproportionately more determined than Western democracies would be ready for . And it is exactly in the psychological and political f elds that asymmetry speaks more against the West (Bednarzak 2016). Kremlin, similar to China, treats military activities as policy instruments.

Maintaining an uncertain peace imposes a costly strategy . Its aim is to deter or turn the rival off from decisive actions, because the consequences would be a high aggression risk in response to this type of behavior . Another strategy may consist in enabling the transformation of operations in an advantage of a political nature (Cronin and Sullivan 2015, p. 7). The Russian Federation applies such a strategy in order to in f uence their neighbors without any reaction from the West. The situations above show that nations may not have enough abilities to reach strategic objectives by using conventional measures. They seek, then, other methods to change international order or paralyze the ef fective response (Hoffman 2016, p. 26) of the international organizations (of other states) by creating ambiguity in the evaluation of the actions implemented and enabling the development of a common consensus. Also, the argument that says that nations which have necessary conventional measures of impact can decide that their own goals will be better achieved by the use of the grey zone (Hof fman 2016, p. 26) seems to be proven correct.

The literature in the f eld shows several assessments of con f icts taking place in the grey zone. They depend mainly on the perception of the assessing side, as well as the level of involvement in con f ict. For example, the con f ict in the West of Ukraine is assessed by the USA as part of white border of war (peace) area and, thus, it is also stated that

it can be resolved by diplomatic and economic means. For the Russian Federation, the con f ict goes nearer to the black border (war) which suggests an inclination to more acts of aggression. The Ukraine, certainly, perceives the acts as threats to its sovereignty and its actions of mobilization and military antiterrorist operations are evidence of its perception and assessment of the situation. It seems, then, the critical point for the grey zone war challenges is understanding the view of the con f ict on both sides – those directly participating in it and the parties that do not participate and yet are still interested in it for various reasons, one of which usually is related to concern for their own interests (USSOCOM 2015:4).

4. CONCLUSIONS

From a theoretical point of view the armed struggle the grey zone conf icts does not meet the criteria to def ne it as war . However, their occurrence in the modern world proves that the practice comes before theory due to the lack of of f cial doctrinal documents. Making strict divisions on what is the white and black zones are is relatively simple in terms of theory . Nonetheless, new technology f ndings, the signif cance of information, as well as transferring the areas of state function and citizens' lives into the virtual world make modern con f icts diff cult to qualify unambiguously as pertaining to the category of war or peace. Uncertainty creates also specif c diff culties in predicting the model of future war . Nowadays, it is hard, certainly, to point out what combinations of presently known forms and methods off ght will apply in the future. For sure, unconventional warfare in the grey zone cannot be ignored. By deepening knowledge one should seek to understand the paradigm of its conduct which will help to face the challenges it poses. Skillfully operating in the grey zone will certainly improve the security and protection of interests.

REFERENCES

[1] Agee R. C. iDuClos M. K.,Why UW: Factoring In The Decision Point For Unconventional Warfare, Monterey, 2012; http://calhoun.nps.edu/bitstream/handle/10945/27781/12Dec_Agee_DuClos.pdf?sequence=3&isAllowed=y (accessed on 12.02.2016).

[2] Barno D. and Bensahel N., Fighting and Winning in the "Gray Zone", War on Rocks, May 19, 2015; http://warontherocks.com/2015/05/f ghting-and-winning-in-the-gray-zone/ (accessed on 20.02.2016).

[3] Brands H., Paradoxes of the Gray Zone, Foreign Policy Research Institute, February 2016; http://www . fpri.org/articles/2016/02/paradoxes-gray-zone (accessed on 20.02.2016).

[4] Counter – Unconventional Warfare, White Paper, USASOC, 26 September 2014; https://info. publicintelligence.net/USASOC-CounterUnconventionalWarfare.pdf (accessed on 15.02.2016).

[5] Cronin P. M. and Sullivan A., Preserving the Rules: Countering Coercion in Maritime Asia, Report CNAS Maritime Strategy Series, March 2015; http://www .cnas.org/sites/default/files/publications-pdf/CNAS%20Maritime%20Strategy%20

Series%20Capstone.pdf (accessed on 20.02.2016).

[6] Elkus A., 50 Shades of Gray: Why the Gray Wars Concept Lacks Strategic Sense, War an Rocks, December 15, 2015; http://warontherocks.com/2015/12/50-shades-of-gray-why-the-gray-wars-concept-lacks-strategic-sense/ (accessed on 20.02.2016).

[7] Hoffman F., The Contemporary Spectrum of Con f ict: Protracted, Gray Zone, Ambiguous, and Hybrid Modes of War, The Heritage Foundatio, 2016; https://s3.amazonaws.com/ims-2016/PDF/2016_Index_of_US_Military_Strength_ESSAYS_HOFFMAN.pdf (accessed on 16.02.2016).

[8] Kapusta P., The Gray Zone, Special Warfare, October - December 2015, Volume 28, Issue 4; http://www .soc.mil/swcs/SWmag/archive/SW2804/October%202015%20Special%20Warfare.pdf (accessed on 16.02.2016).

[9] Kenedy J. F ., Remarks at West Point to the Graduating Class of the U.S. Military Academy, June 6, 1962; http://www .presidency.ucsb.edu/ws/?pid=8695 (accessed on 12.02.2016).

[10] King C. R., Revolutionary War, Guerilla Warfare, and International Law, Case Western Reserve Journal of International Low , Volume 4, Issue 2, 1972; http://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?article=2045&context=jil (accessed on 15.02.2016).

[11] Manea O., The Need to Understand and Conduct UW , Small War Journal, May 2015; http://smallwarsjournal.com/jrnl/art/the-need-to-understand-and-conduct-uw (accessed on 16.02.2016).

[12] Maxwell D. S., Congress Has Embraced Unconventional Warfare: Will the US Military and The Rest of the US Government?, Small Wars Journal, December 2015; http://smallwarsjournal.com/jrnl/art/congress-has-embraced-unconventional-warfare-will-the-us-military-and-the-rest-of-the-us-go (accessed on 16.02.2016).

[13] Mazarr M. J., Mastering The Gray Zone: Understanding A Changing Era Of Con f ict, Carlisle, December 2015; http://www .strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=1303 (accessed on 20.02.2016).

[14] Special Forces Unconventional Warfare, TC 18-01, November 2010; https://docs.google.com/document/ (accessed on 12.02.2016).

[15] The Joint Publication (JP) 1-02, Department of Defense Dictionary of Military and Associated Terms, 8 November 2010, As Amended Through 15 January 2016; http://www .dtic.mil/doctrine/new_pubs/jp1_02.pdf (accessed on 12.02.2016).

[16] The Joint Publication 3-05.1, Joint Special Operations Task Force Operations, 26 April 2007; https://fas.org/irp/doddir/dod/jp3_05_01.pdf (accessed on 12.02.2016).

[17] Tzu Sun, Sztuka Wojny, czyli Trzynaście Rozdziałów; https://www.google.pl/search?q=sun+tzu(accessed on 20.02.2016).

[18] Quadrennial Defense Review Report, Washington, February 2010; http://www.defense.gov/Portals/1/features/defenseReviews/QDR/QDR_as_of_29JAN10_1600.pdf (accessed on 16.02.2016).

[19] USSOCOM White Paper - The Gray Zone, dated 9 Sep 2015; https://dl.dropboxusercontent.com/u/6891151/Gray%20Zones%20-%20USSOCOM%20White%20Paper%209%20Sep%202015.pdf (accessed on 20.02.2016).

[20] Votel J. L., Statement Of General Joseph L. Votel, U.S. Army Commander United States Special Operations Command Before The House Armed Services Committee Subcommittee On Emerging Threats And Capabilities, March 18, 2015; http://docs.house.gov/meetings/AS/AS26/20150318/103157/HMTG-114-AS26-Wstate-VotelUSAJ-20150318.pdf (accessed on 20.02.2016).

[21] Wall A. E., Demystifying The Title 10-Title 50 Debate: Distinguishing Military Operations, Intelligence Activities, and Covert Action, Harvard National Security Journal /Vol. 3, January 1, 2011; http://harvardnsj.org/wp-content/uploads/2012/01/Vol.-3_Wall.pdf (accessed on 12.02.2016).

[22] https://www.bbn.gov.pl/pl/wydarzenia/6650,Wojna-hybrydowa-i-agresja-ponizej-progu-wojny-zapowiedz-konferencji-naukowej.html (accessed on 16.02.2016).

PRIVATISING SECURITY

Irina MINDOVA-DOCHEVA

"G.S.Rakovski" National Defense College, Sof a, Bulgaria

The article proposes an analysis of the different approaches towards employing the international legal framework in the regulation and oversight of private military and security companies' operation in armed conflicts and in peace time security systems. It proposes a partnership-based approach for public and private actors aiming at creating and sharing common values under the principles of solidarity, protection of human rights and rule of law. A focus of further research should be the process of shaping those common values.

Key words: *private military and security companies, armed services, inherent state functions, international regulation.*

1. INTRODUCTION

Security privatization is a global trend nowadays and private military and security companies (PMSCs) have become a non-state actor of major importance in armed conf icts and in peace time security systems.

In terms of extensive privatization of security the international and often national legislation remains insuff cient or even missing. That may result in undermining the rule of law, the ef fective functioning of the democratic state institutions and risks to fundamental human rights [1].

Mercenaries and mercenary related activities are considered to be a crime [2]. But PMSCs are legitimate actors and they need more regulation, because they operate in the "gray" area between public law and private law and inherently mix state functions with business pro f t [3]. That is why transparency and accountability of the PMSCs and their personnel for human rights abuses and their activities' overall impact on upholding human rights are of primary importance.

The focus of this article is to present current approaches towards imposing the international legal framework for the operation of private military and security companies. A comparison is made between developing legislation on a hierarchical model of relations between the State and PMSCs, and on the other hand – a horizontal model of relations between them.

2. DRAFT OF THE INTERNATIONAL CONVENTION ON PMSCs

The hierarchical legislative model can be seen in the Draft Convention on regulation, monitoring and oversight of the PMSCs [4].

Within the UN the primary responsibility for monitoring and studying mercenary activities and the activities of PMSCs rests with the Working group on the use of mercenaries as a means of violating

human rights and impeding the exercise of the rights of peoples to self-determination.

An open-ended intergovernmental working group has been established and has prepared the first draft of an international convention on regulation, monitoring and oversight of the PMSCs [5]. More than 250 experts, non-governmental organizations, member states and governmental organizations discussed the scope and the elements of the draft convention.

The aim of the draft document is not to ban the PRMSCs but to establish minimum standards for State parties to regulate the activities of the companies and their personnel, and to set up an international oversight mechanism.

The draft convention defines in broad terms a private military and/or security company as a corporate entity that provides military and/or security services to physical persons and/or legal entities on a compensatory basis. The definitions introduced for military and security services exclude the possibility for direct participation in hostilities except for self defense. Even more, the draft sets a prohibition for PMSCs and their personnel to directly participate in hostilities, terrorist acts and military actions, or violation of sovereignty. That is why military and security services that can be legally provided include different types of specialized services such as strategic planning, intelligence, reconnaissance, knowledge transfer, material and technical support, implementation of information security measures, etc.

Another restriction of the scope of military and security services is provided by setting the prohibition for States to outsource or delegate to PMSCs "inherent state functions": functions that are consistent with the principle of the State monopoly on the legitimate use of force and that a State cannot outsource or delegate to PMSCs under any circumstances. Among such ones are listed the powers of arrest or detention including interrogation of detainees, intelligence, espionage, etc. These can currently be contracted, and provoked incidents and a number of court decisions against the PMSCs [6].

The convention should be considered as eligible law in any situation, whether or not it is qualified as an armed conflict. It shall apply to states, inter governmental organizations and PMSCs' activities and personnel.

The convention implies State responsibility for the military and security activities of PMSCs registered or operating in their jurisdiction whether or not contracted by the latter. It is a state responsibility to ensure that PMSCs and their personnel are trained and apply international human rights law and international humanitarian law and, therefore, states are held accountable for violations of applicable national or international law. States also ensure that PMSCs and their personnel shall respect the sovereignty, territorial integrity and the principle of non-interference in domestic affairs.

Regulation and oversight of the PMSCs should be provisioned in national legislation by following minimal international standards. A common criterion for granting licenses and authorizations to PMSCs is introduced: lack of violations

of international human rights and humanitarian law by the companies and their personnel.

The State is also responsible for providing rules for use of force and firearms by PMSCs and their personnel. As a minimum standard in this respect the convention provides the rules for self defense in imminent threat, defense of other persons according to the contract, resistance to unlawful attempt for abduction and prevention or stop of commission of serious crime that would involve a great threat to life.

The convention provides regulation in another very sensible area, which is under development: state jurisdiction over criminal, civil and administrative of fences of PMSCs and their personnel.

The convention introduces an organ for international oversight and monitoring - Committee on the regulation, oversight and monitoring - that will establish and maintain an international register of PMSCs, based on information provided by State parties.

All of these provisions emphasize the inherent role of the State, but they put the PMSCs in a passive position, obliging them to follow the rules with no mechanism for dialogue, negotiation or any other legal mechanism to participate in the decision making process. The convention proposes a model of hierarchical relations between the State and PMSCs. But considering the de facto existing relations in different regions of the world, a more effective model is a horizontal one, with shared values and responsibilities.

The draft convention does not propose mechanisms against an already existing problem: dependence of a State on security contractors, which poses threats to its sovereignty and powers.

3. THE MONTREUX DOCUMENT

The Montreux Document on Pertinent International Legal Obligations and Good Practices for States Related to Operations of PMSCs During Armed Conflict is a more flexible initiative that is applied as a customary international law [7]. It is a joint initiative between Switzerland and the International Committee of the Red Cross (ICRC) launched in 2006 that is pretty close to the draft convention process. It has a more narrow scope of application than the draft convention - situations of armed conflict and a more specific aim - to clarify the pertinent legal obligations of the PMSCs under international humanitarian and human rights law. That is why the model which is applied is more flexible and operational. The Montreux document is structured in two parts - the first one clarifies the existing obligations of states, PMSCs and their personnel under the international law . The second part contains a set of good practices designed to assist states in complying with these obligations. In 2008 seventeen states [8] signed this document and it was passed as a document of the General Assembly and Security Council regulating the international process of protection of civilians in armed conflicts. The Montreaux document develops another principle for relations between States and PMSCs, namely the "Respect, Protect, Remedy" framework [9]. Closely related

to it there is another document - International Code of Conduct for Private Security Service Providers. Nowadays it is signed by merely 700 private companies [10]. The purpose of this private initiative is to set-forth a commonly agreed set of principles for Private security companies and convert them into standards and oversight mechanisms voluntarily agreed to be followed.

4. THE UN APPROACH

The UN also uses a speci f c self-regulative approach in relation with the PMSCs.

Private military and security companies have been used in the UN since the 1990s. With the adoption of the new strategic vision in 2009 and security management approach from "when-to -leave" to "how-to -stay", outsourcing and contracting with PMSCs in con f ict areas of UN missions have expanded. The critiques have been focused on the lack of transparency and accountability , as well as on the "bunkerization" [1 1] of the UN missions. These problems provoked the need for adopting a new UN Security Policy and Guidelines on the use of armed security services from Private security companies in 2012.

A determination is made for companies providing armed services and those that render unarmed services. The organization uses PMSCs with regard to a set of criteria: last resort and cost effectiveness and eff ciency.

The objective of armed security services from a private security company are def ned in a UN policy manual as a provision of visible deterrent to potential attackers and also armed response to repel any attack in a manner consistent with the UN "Use of force policy", host country legislation and international law.

That is why armed security services may be contracted on an exceptional basis just for two purposes: protection of UN personnel, premises and property and mobile protection of UN personnel and property.

Basing the decision to use armed security services on security risk assessment is mandatory . Security risk assessment and the follow up analyses should follow the fundamental principal that there is no option for provision of adequate and appropriate armed security from the host nation, alternate nation or UN Security and Safety Services.

The policy also requires to make an analysis of potential negative impacts from the use of private security companies.

When an approval is given, the companies should meet the mandatory requirements for possible selection described in the "Guidelines on the Use of Armed Security Services from Private Security Companies"[12].

The companies are obliged to make a screening of their personnel and to engage only people who pass the screening. The companies should apply their own Use of Force Policy, which should be consistent with the applicable national laws of the state in which the services are to be provided and the UN Use of force policy . Private company's policy shall not be less restrictive than the UN Use of Force Policy . Moreover, it shall be consistent with the International Code of Conduct for Private Security Services Conductors.

5. CONCLUSION

The process of building international standards and regulative framework for operation of PMSCs is ongoing. The comparison of different initiatives showed that the parties to this process are focused on adopting procedural rules, in order to reach some transparency and accountability But still the de f nitions for the basic terms used are dif ferent in scope. States and PMSCs refuse to hold the main discussion on rethinking the "inherent state functions" that should never be outsourced or contracted to private entities, and the scope of "military" and "security" services.

Having in mind the turbulent security situation there are at least two different ways ahead.

First, before rethinking the scope of the "inherent state functions", a new concept for partnership between the actors is needed. It should be based on common values based on the principles of solidarity, protection of human rights and rule of law . Shared values by public and private legitimate actors could be a good ground for acting together without competing.

Second, another possibility is to convert the process of rethinking of the "inherent state functions" into a securitized problem that would cause more instability and would have a debilitating effect on states'primary role in armed conf icts.

NOTES AND REFERENCES

[1] 2010 report (A/HRC/15/25), further to Resolution 10/1 1 of the Human Rights Council, UN General Assembly A/ HRC/15/25 Report of the Working Group on the use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination, http://www2.ohchr.org/english/issues/ mercenaries/docs/A.HRC.15.25.pdf, last retrieved 21 March 2016.

[2] Art. 3, International Convention against the Recruitment, Use, Financing and Training of Mercenaries, A/RES/44/34, http://www.un.org/documents/ga/res/44/ a44r034.htm, last retrieved 21 March 2016.

[3] José L. Gómez del Prado, Chairperson, UN Working Group on the Use of Mercenaries Mercenaries, Private Military and Security Companies and International Law p.31, https://law.wisc.edu/.../gomez_del_prado_ paper.d12, last retrieved November 2014.

[4] 2010 report (A/HRC/15/25), further to Resolution 10/1 1 of the Human Rights Council, UN General Assembly A/ HRC/15/25 Report of the Working Group on the use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination, http://www2.ohchr.org/english/issues/ mercenaries/docs/A.HRC.15.25.pdf, last retrieved 21 March 2016.

[5] 2010 report (A/HRC/15/25), further to Resolution 10/1 1 of the Human Rights Council, UN General Assembly A/ HRC/15/25 Report of the Working Group on the use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination, http://www2.ohchr.org/english/issues/ mercenaries/docs/A.HRC.15.25.pdf, last retrieved 21 March 2016.

[6] Ibrahim, Saleh et. al. vs. Titan corporation 2007, Sami Abas AL RAWI et.al. vs. Titan Corporation 2007, http://uniset.ca/ other/cs6/391FSupp2d10.html, last retrieved 21 March 2016.

[7] A/63/467–S/2008/636, http:// www.ohchr.org/Documents/HRBodies/ HRCouncil/WGMilitary/Session1/ MontreuxDocument.pdf, last retrieved 21 March 2016.

[8] Afghanistan, Angola, Australia, Austria, Canada, China, France, Germany , Iraq, Poland, Sierra Leone, South Africa, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland, Ukraine, and the United States of America.

[9] This framework clarif es the actors' responsibilities, structured in three pillars: the state duty to protect against human rights abuses by third parties, including business;

the corporate responsibility to respect human rights; and greater access by victims to effective remedy, both judicial and non-judicial.

[10] The International Code of Conduct for Private Security Service Providers, Signatory Companies, Complete List as of 1 June 2013 – Version with Company Details, http://www.icoca.ch/en/the_icoc, last retrieved 21 March 2016.

[11] UN mission are criticized that increas hard security measures designed to mitigate risks and deter attacks, rather than open up to the acceptance by local communities, Pingeot, Contracting insecurity , https://www.globalpolicy.org/component/content/article/261-pmscs-a-the-un/52579-new-gpf-report-contracting-insecurity.html, last retrieved 21 March 2016.

[12]http://www.ohchr.org/Documents/Issues/Mercenaries/WG/StudyPMSC/esOnUseOfArmedSecurityServices.pdf, last retrieved 21March 2016.

[13] UN General Assembly A/65/325, Use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination, p. 18 https://documents-dds-ny .un.org/doc/UNDOC/GEN/N10/493/92/PDF/N1049392.pdf?OpenElement, last retrieved 21 March 2016.

[14] UN General Assembly A/63/467–S/2008/636 Montreux Document on pertinent international legal obligations and good practices for States related to operations of private military and security companies during armed conf ict, http://www.europarl.europa.eu/meetdocs/2004_2009/documents/dv/droi_090209_33/droi_090209_33en.pdf, last retrieved 21March 2016.

[15] UNSMS Security Management Manual, http://www.ohchr.org/Documents/Issues/Mercenaries/WG/StudyPMSC/UNSecurityPolicyManual.pdf, last retrieved 21March 2016.

[16] UNSMS Security Policy Manual, http://www.ohchr.org/Documents/Issues/Mercenaries/WG/StudyPMSC/UNSecurityPolicyManual.pdf, last retrieved 21 March 2016.

ENERGY SUPPLY SECURITY AND RENEWABLE ENERGY POLICIES IN TURKEY

Mustafa Kemal TOPCU*
Poyraz GÜRSON**

* Dr., Ankara Chamber of Industry, Ankara, Turkey
** Associate Professor, Kocaeli University, Istanbul, Turkey

As a result of Turkey's geopolitical position and its related requirements, energy is one of the fields where innovation is to be speeded up. However, as a natural consequence of unplanned and incorrect energy policies, Turkey's rate of dependency on energy has reached 72%. Since the need for energy is increasingly growing, especially as a result of the manufacturing industry in Turkey, and a large part of the consumed energy is imported, dependency seems to continue to increase. Toward this end, this article focuses on studies related to reducing external dependency on energy, while also reviewing and discussing literature survey methodology and making policy recommendations concerning energy supply security. Renewable energy has been attached great importance worldwide as well as nationwide because of providing a reliable energy source that meets economic and environmental requirements. In order to meet the increasing electricity needs of Turkey as a developing country the number on renewable energy facilities has been growing. Domestic production of equipment for renewable energy, and producing and integrating those into the conventional system are of high importance because energy supply is a security factor, sustaining reserves is a major need and reducing foreign dependency is a policy priority.

Key words: *renewable energy, current deficit, energy supply security.*

1. INTRODUCTION

The Tenth Development Plan covering the 2014-2018 time period and that is in compliance with the 2023 goals of Turkey, , iterates international competition power alongside with high and consistent economic growth. Outreaching high value-added systems it is aimed to enhance Turkey's international competitive edge and to promote exports of advanced technology with a vision of *"being a manufacture site for middle and high technology goods in Eurasia"*.

In this context, ener gy is one of need-oriented areas accepted among the ones to be improved in the Research&Development (R&D) activities in accordance with Turkey's geopolitical position and needs of (TUBITAK, 2010). Turkey has become dependent on the foreign energy markets. Thus, 72% of its consumed energy is imported due to wrong and unplanned ener gy policies. Turkey ranks the 59th in the Global Competitiveness Report of the World Economic Forum (WEF) for the 201 1-2012 time

period and in accordance with the global competitiveness index its dependency on ener gy imports has been deepening by day. What is more, its need for ener gy is likely to keep growing given its rapid economic development. Thus, through the implementation of a domestic resource-based energy production program (The 10 th Development Plan, 2013) it aims at increasing the share of domestic ener gy resource derived from oil drilling and natural gas from 28% to 35% by the end of 2018. However , within an international context, studies on the issue of ener gy supply security emphasize the frame of international relations and reciprocity . For instance, Bayraç (2009) considers global energy policies in terms of oil and natural gas, Özkan (2010) approaches the subject regionally by focusing on the Nabucco Project, whereas Belet (2013) analyzes the Trans Anatolian Natural Gas Pipeline Project. In the same manner , Ayhan (2009) and Kaysi (2011) evaluate the relationship between Turkey and the EU regarding energy supply security. With a view to all of the above, it is undoubtedly clear that Turkey requires a deliberate study to clarify the current state of renewable energy and a roadmap.

Turkey does not have enough natural resources in comparison with its intensive ener gy consumption (Kayıkçı, 2011). That impacts its high-rated foreign-dependency and places pressure on the current account balance, as well as on the f eld of ener gy supply security . In this respect, Çal ışkan's (2009) work focuses on the subject of Turkey's foreign-dependency on ener gy and indicates the current state of renewable energy employment. However, it does not clearly reveal how to react regarding energy supply security.

Towards this end, this study aims to f nd a new way to bring into the limelight issues such as diversif cation of ener gy, policies toward using renewable ener gy and energy supply security . After studies on ener gy supply security are discussed, the situation in Turkey is elaborated and then global studies are reviewed. Last but not the least, some recommendations are presented.

2. A CONCEPTUAL DISCUSSION ON ENERGY SUPPLY SECURITY

Literature review indicates that academicians sometimes adopt a narrow perspective on ener gy supply security ignoring challenges encountered, or they make use of a wide perspective that cannot be restricted to only security or economics. Thus, energy supply security is described as *"the implementation of environment-friendly, continuous, sufficient and qualified energy supply, transport and demand at an appropriate cost/price and within the scope of production, transmission, consumption activities"* (Erdal & Karakaya, 2012).

However, energy supply security does not carry the same meaning to everybody. While energy exporting countries evaluate the increase in demand that will enhance their reserves, for Russia it means sovereignty in the f elds of strategic resources and distribution network. On the other hand, developing countries pay attention to how the balance of payment is af fected by energy prices. Emer ging markets such as China and India are looking

for a way to adapt to the global market. EU researches how to get rid of dependency on natural gas. For transit countries like Turkey, the security of energy transmission lines is of great signif cance.

The above mentioned concerns are consequences of the meaning attached to the concept of ener gy supply security since the 1973 crisis and indicate that ener gy supply security is based on not allowing oil exporting countries to creat e problems (Yergin, 2006). In today' s contemporary world, this de f nition has to be widened to also include whole supply chain and infrastructure.

For instance, Erdal and Karakaya (2012), who consider ener gy supply as a security and environmental risk, discuss political, social and economic factors that determine ener gy supply security in detail and consider that being accessible, economical, obtainable and acceptable are requirements for ener gy supply security. Sovacool and Mukherjee (2001) refer to a f ve-factor structure composed of accessibility , cost, technology development, sustainability and regulations.

Within this understanding, the main goals of a strategy that is successful at ensuring ener gy security may be listed as follows (UN ESCAP , 2010):

- Reducing the def cit between energy demand and supply to the minimum;
- Increasing energy savings and productivity by reducing energy density;
- Generating the optimal energy mix;
- Diversifying the supply of energy;
- Investing in improvement of the energy infrastructure;
- Diverging to alternative and renewable energy sources;
- Promoting innovation and competition with R&D activities;
- Reducing the vulnerability against f uctuations in price of energy;
- Ensuring *"good governance"* in the energy sector.

Diversif cation of energy sources and suppliers, utilization of domestic resources, complete liberalization of the domestic market, increasing cross border investments, improvements of energy storing capacity, increasing energy productivity and savings in energy consumption might be considered among the measures to increase energy supply security , as well (Erdal & Karakaya, 2012).

3. ENERGY USE IN TURKEY

It is crucial that Turkey's energy and electric demands should be estimated scientif cally, and both resource supply and investment plans should be projected accordingly . According to the capacity projection, which is prepared by TETC (Turkish Electricity Transmission Company) for the 2012-2021 period, electric energy demand is estimated to increase by 7.5% annually (6.5% in a pessimistic scenario scenario) and the demand may increase by 75%-93% in the next 10 years. Hence, an increase in energy demand can be observed in the graph in **Figure 1**.

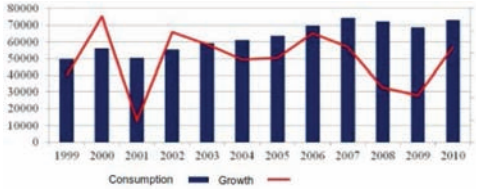


Fig. no.1. Energy consumption in Turkey (1999-2010)

The objective is to provide suff cient, high quality , continuous, low-cost and environment-friendly

electricity to consumers. The Turkish electricity market, which is in close relation with the economic and political developments in this country and in the world, is undergoing an extremely dynamic process characterized by an increase in demand.

The electric market constitutes approximately 3% of Turkey's GDP. In order to meet the demand that is growing by 6.3% to 8.4% annually , participation of the private sector needs to be ensured, and to reduce the cost, competition should be provided (Güner & Albostan, 2007).

In this regard, as economies are dependent on ener gy the strategic importance of ener gy resources and alternative ener gy oriented technologies gain a growing importance. Alternative policies to decrease dependency on foreign energy sources will have a positive effect on current account de f cit and economic growth, as well. Towards this end, increasing renewable energy production is of great importance. In addition, the share of renewable energy resources in electricity production is forecasted to increase from 20% to 29% in 2035 (T enth Development Plan, 2013).

Table 1. Development and Forecasts in Energy Industry

	2006	**2012**	**2013**	**2018**
Primary Energy Demand (BTEP)	99.642	119.302	123.600	154.000
Electricity Demand (GWh)	174.637	241.949	255.000	341.000
Per Capita Primary Ener gy Consumption (TEP/person)	1.44	1.59	1.62	1.92
Share of Natural Gas in Electricity Production (%)	2.517	3.231	3.351	4.241
Share of Renewable Energy Resources in Electricity Production (%)*	45.8	43.2	43.0	41.0
Electric Utilities Power (MW)	25.3	27.0	27.7	29.0
Energy Density (TEP/1000 USD)	40.565	57.058	58.500	78.000
Primary Energy Demand (BTEP)	0.288	0.276	0.272	0.243

* The European Commission Report in 2005 indicates that renewable ener gy resources generate 12.1% of electricity production in Europe in 2030.

For these reasons, many countries focus on ener gy investments and engage in eff cient and effective use of natural sources to meet increasing energy requirements. According to forecasts in the f eld, renewable energy will be the second lar gest energy production source in 2015 and, along with coal, will become a fundamental energy source in 2035, (İzmir Development Agency, 2013).

Like in many other countries, renewable energy resources are seen as crucial in Turkey and meant to provide secure energy for economic, social and environmental reasons (Uysal, 2011). Turkey has signif cant potential in terms of renewable energy resources. Turkey is suitable for establishing various power sources including solar , biomass, wind, and geothermal ener gy across the country. For instance, Koç (1998) addresses one of the best solutions for environmental problems, which is wind power, in Ayvalık region and emphasizes its economic and social contributions to the economy.

Despite the recent developments in energy investments in Turkey, the main problems with renewable energy investments are lack of incentives mechanisms, regulations, human resources and technological developments (İzmir Development Agency, 2013). For instance, potential and accurate data for wind energy have never been examined (Soydal, Mızrak & Çetinkaya, 2012). Concerning alternative ener gy investments, energy production is not the main issue; it is required that the domestic sources are used for energy production and domestic producers are supported by the government (İzmir Development Agency, 2013).

4. GLOBAL BEST PRACTICES

While Turkey mainly approaches energy security from the perspective of using the advantage of its strategic location, other countries handle the issue in terms of sustainability , environmental impacts and reducing their dependency. In comparison with Turkey's qualitative studies, other countries concentrate on quantitative research including methodological suggestions or future projections.

Sovacool and Mukherjee (2001) suggest a 5-factor and 20-component typology, and highlight accessibility, cost, technological development, sustainability and regulations. Accessibility is directly rela ted to energy supply and frees countries from dependence by encompassing different energy types and technologies. Similarly, Yergin (2006) a rgues that energy safety is not just about petroleum and natural gas, and notes the drawbacks of energy dependence citing the sanctions imposed by Russia after its tension with Ukraine in 2006. Consequently , European Union (EU) leaned to other resources after experiencing gas cuts.As a result of Iran's nuclear program, resource diversif cation gained more attention. EU's decision making process for energy matters does not go without ener gy supply safety, environmental targets and competition strategies. For this reason, in its search for alternative resources, EU tries to develop projects with Iran, Iraq, Turkmenistan, Kazakhstan, Azerbaijan and Egypt (Ayhan, 2009).

Diversifying resources for energy supply security or considering energy as just a commodity for electricity production is not enough. It is also important to reduce carbon emissions, protect environment and provide sustainability in order to use energy effectively (Hurlbutt, 2010).

Stern (2004), as opposed to most academicians and practitioners, paid signif cant attention to the Gross National Product - ener gy relation and referred to f ve factors affecting this relation: substitutability of energy, technological change, change in the composition of ener gy input and change in the output. Likewise, Lund and Mathiesen (2009) worked on a methodology for Denmark and researched the ener gy input and output ratio e by mapping the energy need of Denmark for the 2030-2050 time period. The researchers specif ed their concrete aims as obtaining energy supply security , reducing the CO_2 emissions by half, creating employment and promoting export.

Malaysia, which has been trying to elaborate a national strategy in the f eld for 30 years, centered its strategy on supply, environment, and productivity (Hashim ve Ho, 201 1).

Thus, in Malaysia's policies increasing renewable energy usage, legislative arrangement, incentives for renewable energy usage, human resources and R&D activities and courses of action have been set as priorities.

5. CONCLUSION

It is likely for discussions about energy supply security to increasingly continue. Literature review indicates that academicians adopt either a narrow perspective on energy supply security ignoring challenges encountered, or they make use of a wide perspective whose context cannot be restricted to only security or economics. Moreover, the meanings attached to the concept vary by country , as already indicated in the body of this article. In the widest sense, ener gy supply security is about the provision of energy by oil exporting countries to countries in need. Ener gy supply includes infrastructure costs, as well as costs incurred by the f nancial and political instability in the supply or demand countries. The second factor is accessibility . Concerning accessibility, differentiation of energy resources, dif ferentiation of energy production, transmission and distribution and storage of energy may be employed (Jansen, van Arkel and Boosts, 2004:5; Elkind, 2010:119).

Another dimension of ener gy security is its producibility . Fluctuation of ener gy prices due to crisis and speculative reasons may cause countries' exposure to economic losses, social harms and even political instability (Erdal & Karakaya, 2012:1 13). The last dimension of ener gy safety is sustainability. Sustainability includes both sustainability in ener gy supply and concern for today' s resources, environment included, in the name of future generations' best interests.

The current state in energy supply shows a diversi f cation of ener gy resources. Therefore, trying to innovate becomes an obligation and introducing the renewable ener gy concept is benef cial.

This study proposes that the concepts of ener gy supply security and renewable ener gy Tare handled from a perspective that pays more attention to accessibility and sustainability rather than to a political and strategic outlook.

Turkey which has attained a steady growth needs more and more energy as time goes by . It is not easy for Turkey, whose ener gy dependency level is currently at 70%, to handle power and sustain its future. Hence, Turkey should ensure energy supply security in order to satisfy its ener gy demand. Turkey can make itself secure by evaluating its geostrategic position and putting itself at the center of the conventional distribution network since using the current system has always less cost and both suppliers and demanders benef t from it. In this respect,Turkey can strengthen its position by playing up to its strengths in the f eld and by not keeping away from EU' s studies on resource diversif cation.

On the other hand, ener gy supply security may be ensured by diminishing dependency on external providers and enhancing resource diversity. One way to do that is to diversify the pool of energy suppliers and not to buy oil and natural gas from just one country. In addition, it

is possible to ensure ener gy supply security by enhancing the use of renewable energy. For instance, the cooperation agreement with the United Arab Emirates (UAE) on the use of Afşin-Elbistan lignite reserves in electricity production, the Tuz Gölü Natural Gas Under ground Storage Project, and the inter - governmental agreement with Azerbaijan on the Trans-Anatolian Natural Gas Pipeline Project can be taken as ef forts of Turkey on this issue. Thus, Turkey can evaluate its natural resources, reduce its external dependency on ener gy sources and suppliers, establish balance between export and import, and improve its current account def cit.

Unfortunately, there is no study for Turkey to present a roadmap and methodology except for some conceptual studies. Only foresights included in legal reports are currently being used. Actually, energy supply security is not an issue that would be taken as a sole factorIt is also related to environmental concerns and economic aims. Renewable ener gy use, while increasing energy supply security , also affects macroeconomic variables such as current account de f cit, growth or employment by supporting sustainable national competitiveness as a result of innovation.

To this end, it is rational to choose different types of ener gies such as hydraulics, biomass, solar , geothermal, wave and wind as areas of interest and investment. Use of energy resources as substitutes may serve security issues. On the other hand, control over ener gy demand may support ener gy supply security by enhancing ener gy productivity. Turkey has become dependent on especially Russia in terms of natural gas. In order to decrease the pressure on it, Turkey should diversify its foreign resources.

Issues covered in this study have become well-accepted terms for energy supply security in national and international areas. However, it is clear that Turkey needs methodological studies. To this end, it is signi f cant that academicians and politicians put forward more concrete typologies in order to constitute more rational and optimal studies. With systematic and planned studies, Turkey not only ensures energy supply security , but also attains sustainability.

REFERENCES

[1] Ayhan, V. (2009). Turkey in European Energy Supply Security: Oil, Natural Gas, and Integration, International Relations, Vol. 5, Issue 20, pp.155-178.

[2] Bayraç, H. N. (2009). Global Ener gy Policies and Turkey: A Comparison Regarding Oil and Natural Gas Reserves, Eskişehir Osmangazi University Social Sciences Journal, 10(1), 115-142.

[3] Belet, N. (2013). Trans Anatolia Natural Gas Pipeline Concerning Europe an Union and Ener gy Supply Security , International Conference on Eurasian Economies, Session 5D, 999-1008.

[4] Çalışkan, S. (2009). Dependency on Foreign Energy and Energy Supply Security in Turkey, Dumlupınar University Social Sciences Journal, 25, 297- 310.

[5] Elkind, J. (2010). Ener gy Security, Call for a Broader Agenda, Energy Security, Economics, Politics, Strategies and Implications (In: Carlos Pascual ve Jonathan Elkind), Chapter 6, 1 19-149, Brookings Institution Press, Washington, D.C.

[6] Erdal, L., & Karakaya, E. (2012). Economic, Political, and Geographical Factors Affecting Energy Supply Security , Uludağ University Economics and Administrative Sciences Faculty Journal, Vol. XXXI, Issue 1, 107-136.

[7] European Commission. (2005). European Energy and Transport Trends to 2030, Belgium.

[8] Güner, S., & Albostan A. (2007). Turkey's Energy Policy, YEKSEM' 07, October 31 – November 02, 2007, Gaziantep, Turkey.

[9] Hashim, H., & Ho, W.S. (2010). Renewable Energy Policies and Initiatives for a Sustainable Energy Future in Malaysia, Renewable and Sustainable Energy Reviews, 15, 4780-4787.

[10] Hurlbut, D.J. (2010). Multistate Decision Making for Renewable Energy and Transmission: An Overview, University of Colorado Law Review, vol.81, 677-703.

[11] İzmir Development Agency. (2013).

[12] Jansen, J.C., Arkel, W.G.V., & Boots, M.G. (2004). Designing Indicators of Long-term Energy Supply Security, pp.1-35. ECN Policy Studies, 1.1.2004, http://www.ecn.nl/docs/library, (01.04.2014)

[13] Kaysi, H. (201 1). Energy Security of the European Union and Turkey's Role, Ankara European Studies Journal, Vol. 10, No.2, 63-82.

[14] Kayıkçı, F. (2011). An Evaluation on Industrial Strategy Document, SET A Analysis, Politics, Economics, and Societal Researches Foundation.

[15] Koç, T. (1998). Wind Energy Potential of Ayvalik, Balikesir University Journal of Social Sciences Institute, Vol. 1, Issue 2, 1-18.

[16] Lund H., & Mathiesen, B. V. (2009). Energy System Analysis of 100 Per cent Renewable Energy Systems: The Case of Denmark year 2030 and 2050, Ener gy, Volume 34, Issue 5, p. 524-531.

[17] Tenth Development Plan (2013) Ministry of Development.

[18] Özkan, G. (2010). Ener gy Supply Security and "New Big Play" within Nabucco Project Context, Academic Researches Journal, Issue 45, 31-46.

[19] Sovacool, B.K., & Mukherjee, I. (2011). Conceptualizing and measuring energy security: A synthesized approach, Energy 36, 5343-5355.

[20] Soydal, H., M ızrak, Z., & Çetinkaya, M. (2 012). Signif cance of Turkey's Alternative Energy Needs with a Macroeconomics Perspective, Pamukkale University Journal of Social Sciences Institute, Issue 11, 117-138.

[21] Stern, D.I. (2003). Ener gy and Economic Growth, Encyclopedia of Energy, Volume 2, 35-51.

[22] TUBITAK (2010). National Strategy for Science, Technology, and Innovation for 2011-2016.

[23] Turkish Electricity Transmission Company. (2013). Sectoral Report for 2012.

[24] UN ESCAP. (2010). Energy Security and Sustainable Development in Asia and the Pacif c, Policy Options for Ener gy Security and Sustainable development, http://www.unescap.org/sites/default/files/energy-security-ap.pdf, (11.04.2014).

[25] Uysal, F. (2011). Graf Theory and Matrix Approach for Selection of Renewable Ener gy Alternates in Turkey, Econometrics and Statistics, Issue 13, 23–40.

[26] Yergin, D. (2006). Ensuring Energy Security, Foreign Affairs, Vol. 85, No. 2, pp. 69-82.

COLLECTIVE SECURITY IN THE CONTEXT OF GLOBALIZATION. THE CASE OF ROMANIA

Vlad DUMITRACHE
Cristina ANTONOAIE

The Regional Department of Defense Resources Management Studies,
Brasov, Romania

European countries have taken part in the Globalization process ever since the end of the Second World War. Being active members of international institutions like the IMF, World Bank Group, NATO or the WTO, the European countries have even developed a collective entity of their own, that of the European Union. In later years, Eastern European countries like Romania have also become a part of this globalised system. It is the aim of this paper to present the effects that this integration has brought in terms of economic development and security challenges for EU member states, by taking into consideration the example of Romania.

Key words: *globalization, integration, security, capability, multinational companies.*

1. INTRODUCTION

There is no universally general def nition for globalization. Globalization has meant a development in interconnectivity in different domains like economy , politics, social-cultural f eld, etc. The advance in technology has also meant that economy could shift from a regional level economy to that of an international, interconnected economy. Therefore, economists consider globalization to be integration through international trade of markets in goods and services, as re f ected in a variety of possible measures [1]. These include direct measures of barriers, tarif fs and transport costs; quantity-related measures of the result, trade volumes; and price-related measures of the result, the law of one price and other evidence of arbitrage. Globalization is considered to also mean in terms of economy the f nancial integration through international trade in assets, as ref ected in a variety of possible criteria [2] such as: direct measures of barriers, capital controls and transactions costs; quantity-related measures of the result, gross and net capital f ows, portfolio shares, or consumption sharing; and price-related measures of the result, interest rate parity conditions and other evidence of arbitrage.

After the end of the Second World War, economy has shifted from a state driven economy , to a private driven economy , mostly due to the development of international, multinational and transnational companies. In order for these companies to expand their business in other countries, foreign direct investment and portfolio investment appeared.[3] There

has also been an increased trade in intermediate products (especially within multinational corporations), international outsourcing of services, and international movement of persons. Due to the last effect, an unprecedented migration phenomenon has taken place worldwide.

The advantages and disadvantages of globalization have been heavily scrutinized and debated in recent years. Proponents of globalization say that it helps developing nations "catch up" to industrialized nations much faster through increased employment and technological advances. Critics of globalization say that it weakens national sovereignty and allows rich nations to ship domestic jobs overseas where labor is much cheaper [4].

2. THE EUROPEAN UNION AS PART OF GLOBALIZATION

2.1. Financial outcomes of the Bretton Woods System inside the EU

The Bretton Woods System established in 1944 in Virginia, USA, meant that all member countries within the system would convert their national currency to the US Dollar, who would be itself converted to Gold at 11 dollars for one ounce of gold. Exchange rates for member states would no longer float freely, but be tied to the US dollar, thus making the American currency the strongest on international markets. The development of the Bretton Woods Fixed Currency System also meant the creation of the IMF and the World Bank Group that monitored all international financial transactions between member states [5].

By 1971, the Bretton Woods system collapsed and the United States was forced to stop using it. Former member states no longer tied their currency to the US dollar and free flotation for currencies became a trend for most countries worldwide. There are many causes that lead to the failure of the BTW, the most important being the decision of the OPEC to increase oil prices and by doing so, defating the US dollar.

A direct effect of the downfall of the system was that for the first time, Western European countries understood the possibility of becoming an economical and financial power, it they were to unite under a common structure.

After the Second World War, France, Italy, West Germany and the Benelux Country had already formed the European Coal and Steel Community (ESCE) in 1951.

By 1958 two other Communities had been formed between the already mentioned countries, the European Economic Community (EEC) and the European Atomic and Energy Community (EATM) [6]. In 1973, when the Bretton Woods system had already failed, the three Communities had merged and had brought in the UK, Denmark and Ireland as members, thus creating the premises for what would become a united, powerful financial and social community, that of the European Union [7].

2.2. Developing multinational companies inside the EU

One of the most important consequences of creating the EU was the reduction of taxes for companies that had their HQ in any of the member states. When developing economic activities inside EU territory, these companies were relieved of several group of taxes, thus making their activity much more profitable. Thus companies from the auto industry, food

industry or pharmaceutical industry managed to develop their activity throughout the European Union. One particular scenario that the EU economy has brought into practice is that of fusions, acquisitions or mergers between companies inside the EU, that have the same f eld of activity.

The same can be said about the military industry inside the EU. Several companies have developed their activity by moving their productions units in other European countries, different from the country of origin (Eurocopter, Aerospaciale, EADS, DaimlerChrysler Aerospace AG).

Fusions or acquisitions have also been a case to take into consideration inside the European military industry (Agusta Westland, Airbus Group etc.).

The development of multinational companies at an EU level has also had its disadvantages. While migration became a key issue, for labor force in search of a better market, another disturbing phenomenon has been that of social dumping.

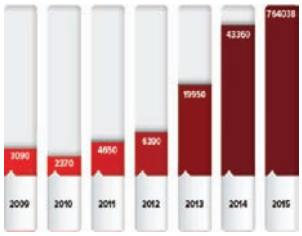
Dumping represents the acts of practicing prices that are lower than the average prices on a particular market. Social dumping therefore means the pursuit of a company in practicing a lower income for the labor force than the average income on the market. When that market is the European Union, there have been companies who moved their production units from one country to the other, in search of lower income for the labor force. This has brought upon a negative ef fect, because the regions from which multinational companies have f ed have had issues in terms of unemployment.

Illegal migration from outside the EU has also been an issue for the European Union, whose institutions have dealt with this phenomenon for several years.

2.3. Security challenges for the EU

Since the Schengen Space has been developed, illegal immigration has become an issue for the countries that represent external borders for the EU. Since free travel exists inside the Schengen Space, countries that do have external borders need to develop their borders much stronger. Recent events in Syria and other countries in the Middle East has lead to an increase in illegal immigration as can be observed in **Table 1.**

Table 1. Illegal Immigration, Western Balkans, 2009-2015, Source: Frontex



According to specialists, the number of illegal migrants reaching Europe's border has jumped sharply in the f rst four months of this year , suggesting this year's total could be on track to overtake the 140,000 refugees who arrived during the 201 1 Arab Spring, according to new f gures [8].

The Western Balkans route represents one of the most important routes for illegal immigrations, which concerns Romania and neighbor states. All routes are taken into consideration by Frontex, an agency developed by the European Commission to assure Border Control for the European Union.

2.3.1. Security Agencies developed by the EU

Frontex is a European Union border agency created in 2004 in order to guard and secure the external borders of the EU.

Frontex estimates that 42,000 illegal immigrants reached the EU between January and April 2015, a number that is four times the size than the previous from 2014[9]. The agency has presented all routes for illegal immigration that exist at the external borders of the European Union as it can be seen in **Figure 1.**

Fig.no. 1. Main routes for immigrants by land and sea
Source: http://serbianna.com

Due to this increase in illegal immigration around the borders, Frontex was granted the legal framework from the European Commission to form its own capabilities in order to better secure the borders. This concept is called Eurosur and it implemented by Frontex together with member states that have external borders [10]. Such is the case of Romania a country that has external borders with Ukraine and Moldova, and is part of the Eastern Mediterranean and Western Balkan routes for illegal immigration, through its coast at the Black Sea and its borders with Serbia and Hungary.

3. ROMANIA ON THE PATH OF EUROPEAN INTEGRATION

3.1. A market for foreign investors

After the end of the communism in 1989, Romania has taken its part in the globalization process. Throughout the last 25 years, Romania has opened its markets for foreign investors (**Graph 1**) and has liberalized its national economy. Romania has become a part of NATO starting with the year 2004 and a part of the European Union, starting with the year 2007.

Graph no. 1. FDI as % of GDP

Source: World Bank

As part of today's globalized economy, member in the WTO, IMF, World Bank Group, NATO and EU, Romania has become an interesting option for investment for both foreign investors and multinational companies.

Even though the percent of FDI has decreased since 2010, due to the previous financial crisis (started in 2008), Romania is still attractive to foreign investors. With a cheap labor market and a potential of fast growth in economic development, companies like Renault, OMV, Ford or Mittal have invested in production units in Romania and by doing so, have created a significant number of jobs.

Eurocopter is a particular case of foreign investment, as the French company develops products for both the civil and military fields. Together with IAR, the Romanian national company, they produce, operate and maintain the PUMA SA 330 or the IAR 330 as the Romanian Military names it. These helicopters have been upgraded to form the IAR 330 or PUMA SA 330 SOCAT, which gives the helicopter attack capabilities.

The most recent update to the helicopter has been the PUMA Naval version for surveillance and coast guard capabilities around the Romanian black-sea border. These helicopters are now part of the Romanian Navy and operate and the three Romanian Frigates: King Ferdinand, Queen Mary and Marasesti.

As part of NA TO, Romania has taken part in international missions, like those of Bosnia, Afghanistan and Iraq.

With recent events concerning immigrations, at the request of Frontex, Romania can be part of the capabilities developed to increase security and surveillance around the external borders of the EU.

3.2. Developing security capabilities in South-Eastern Europe

The South-Eastern Region of Europe spreads from Romania to the North-East, to Croatia, Bosnia and Albania to the West and Bulgaria and Macedonia to the South-East (**Figure. 2**).

Countries that form this region are those of Albania, Bosnia, Bulgaria, the Republic of Macedonia, Montenegro, Romania and Serbia. Of these countries, Romania, Croatia and Bulgaria are member states of the European Union.

Fig. no. 2. South-Eastern Europe Region

Frontex has asked all EU member countries that have external borders to take part in building border capabilities in order to better handle the issue of illegal immigration that has occurred starting with 2014[11].

With foreign investors like Airbus, Romania can assure the development of such a capability . Not only did Romania already have equipped its naval forces with the Puma Naval helicopters that can assure missions of security and surveillance [12], but the new factory developed in the city of Brasov, near the IAR and Eurocopter factories, intends to build a new line of Super Puma helicopters, both for civil and military use. It must be said that no buyers have been yet to be assigned for this helicopters. If Frontex requires a capability to strengthen its border security , a foreign investor like Airbus could have the answer . The Super Puma helicopters can be equipped for surveillance, for security or rescue missions and can take the place of the existing helicopters as they are more modern and better equipped.

As part of NA TO, Romania has also acquired a number of F-16 jets, with the f rst 12 to be delivered to the Romanian air forces in 2016. These F-16 are to take part in forming up to at least four squadrons for air-security missions, air-police and surveillance on all four directions of Romania' s border, while protecting the airspace of the entire country.

With its current navy and with the new line of helicopters and air jets, Romania can become a factor of stability in the entire South-Eastern region of Europe, being able to assist other countries like Bulgaria, Macedonia, Croatia or Serbia in developing their border missions, while attending to the general capability built by Frontex [13]. Romania has the ability to develop capabilities and security missions to its northern border with Ukraine

as well as assisting the Republic of Moldova with missions such as border police, border security or surveillance.

This is the main advantage of globalization in the case of Romania. Foreign investors and the allegiance to NATO have enabled Romania's forces to have a higher degree of readiness than ever before. Romania is today a more stable country and better prepared to handle any threats.

4. CONCLUSION

As part of the globalization process, Romania has had both advantages and disadvantages in the last 26 years. Romania's road to democracy and a capital market regime might have been a diff cult one, but it has changed the outcome of the country's trajectory from East to West.

Foreign investors have started to invest in the country and they have brought new technology and opportunities for the labor market. Meanwhile Romania became an integrated part of the European Union, developing economic, social and political relations with the member states. Migration to western countries has become an option for the labor force as well, as job opportunities have emerged in member states like Spain, Italy, Germany or the United Kingdom.

As a NATO member, Romania has become an important part of the Alliance and has developed institutional relations with allied member states as well. The military industry has developed in this context, by bringing in new foreign investors who have helped the Romanian Army acquire better and more modern equipment.

Factors like illegal immigration or competitive disadvantages from multinational companies have also taken their token on Romania's ability to tighten the gap with more developed countries in Western Europe. By doing so Romania is still in struggle in attempting to reach a steady economic growth.

However, as part of international structures like NATO and E.U., Romania has the ability to be an important factor in increasing security around European Borders, becoming an economic partner for the countries inside the E.U. and other countries as well, not only in the South-Eastern Europe region, but also in the entire Balkan area.

REFERENCES

[1] Rodriguez, J., P. (2013) The Geography of Transportation, Routledge, New York .

[2] Frankel, J., Kennedy , H., What Do Economists Mean by Globalization? Implications for In f ation and Monetary Policy, School of Government, Harvard University, Written for Academic Consultants Meeting, September 28, 2006, p. 2.

[3]http://www.investopedia.com/terms/g/globalization.asp, last retrieved February 2016.

[4] Frankel, J., Kennedy , H., What Do Economists Mean by Globalization? Implications for In f ation and Monetary Policy, School of Government, Harvard University, Written for Academic Consultants Meeting, September 28, 2006, p.3.

[5]http://europa.eu/about-eu/eu-history/1945-1959/index_en.htm, last retrieved February 2016.

[6] Prestowitz, C., Rogue Nation: American Unilateralism and the Failure of Good Intentions, Basic Books, 2003

[7] Barret, D., Illegal immigration to Europe shows sharp rise, The Telegraph, 2014 p. 1.

[8] ibidem.

[9] http://frontex.europa.eu, last retrieved February 2016.

[10] ibidem.

[11] ibidem.

[12] http://www.navy.ro, last retrieved February 2016.

[13]http://www.politiadefrontiera.ro/securizare/strategie.php, last retrieved February 2016.

POSITIVE TRENDS IN DEFENSE RESOURCES FOR THE ARMED FORCES OF THE SLOVAK REPUBLIC

Milan SOPÓCI*
Marek WALANCIK **

*Professor Engineer, PhD, Armed Forces Academy of Gen. M.R.Štefánik in Liptovský Mikuláš, Slovak Republic

**Associate professor, Academy of Business in Dabrowa Górnicza, Slovak Republic

The article deals with some security aspects and their influence on the defense resources of the Slovak Republic. The contribution it brings lies in the comparison between the defenses resources of the last years and their increase over the years. It shows a positive trend in terms of the modernization of equipment, weapons, technology and weapons systems of the Armed Forces of the Slovak Republic.

Key words: *strategy, safety, defense resources, weapons, technology, equipment.*

1. INTRODUCTION

The twenty-first century began and continued with fights in Africa, the Near and Middle East, and Europe. Moreover, the relations between the US and Russia are again on the freezing point, Europe is suffering from terrorist attacks and hundreds of thousands of refugees are fleeing towards a better future while on the Schengen borders a new iron curtain is being built and the EU countries are arguing for quotas for the admission of migrants from all over the world, Britain is preparing for withdrawal from the EU, and Greece needs more and more to remain in the European Union [1].

In addition to these conflicts climate changes are causing increasingly more problems: the Far East, Indochina and the US suffer from tornadoes, while rains have fallen in Africa where for years there had been scarcity of water . On the other hand, where water has always been enough, droughts have appeared. The Subtropical climate in Europe pushes North and the Arctic Circle millennial glaciers are melting.

Against such crises and problems, the most difficult situation seems to be unfolding for years in Iraq, Afghanistan and more recently in Syria and Europe. While in Afghanistan and Iraq fights have been there for more than 40 years, in Syria the war is in full swing. With the expansion of the Islamic State, there have not only been fights among former allies but also with Arab countries such as Egypt and Saudi Arabia, as well as a conflict with Russia, which supports Assad. In Europe, after the terrorist attacks

in France, new political, economic and especially security are being implemented. As a result, countries, Slovakia included, are increasingly aware of the role of the armed forces. In this situation, the politicians, who cannot be identified as supporters of the military are aware that the armed forces have been significantly under resourced for the past decades. That was reflected in the state of weapons and armament and capabilities. Therefore, in the Slovak Republic, for example, there have been major efforts towards bridging the inherent gap created by such a situation.

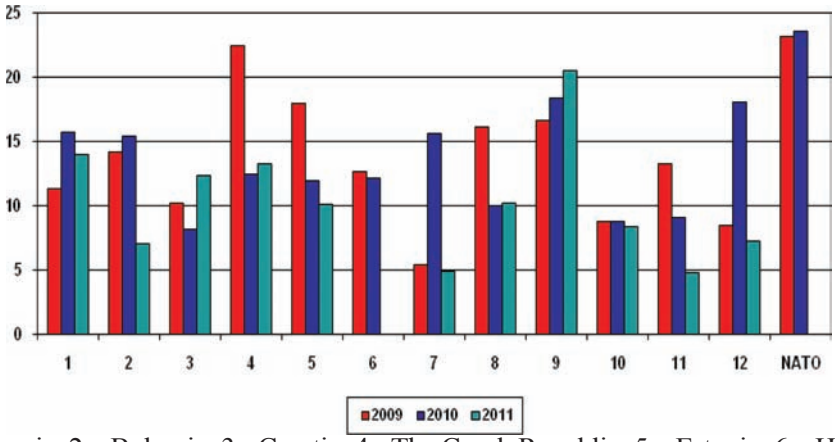
2. STATUS OF ARMED FORCES AND DEFENSE RESOURCES IN THE MINISTRY OF DEFENSE OF THE SLOVAK REPUBLIC (SR) IN THE LAST DECADE

The status of the Slovak armed forces is most accurately characterized by the Strategic Defense Review [2].

The Army of SR was established on 01/01/1993. It had inherited 53,000 soldiers, a large amount of equipment and materials, extensive military education and infrastructure. However, its transformation to modern armed forces comparable with the armies of NATO member states and able to full fl the tasks of national defense and international commitments in the new political and security conditions was deemed necessary. From 1993 to 2001, the Defense Department made several reform initiatives which failed and did not produce the expected results for lack of clear political demands on national defense and armed forces development in the context of the integration objectives of the state and as a consequence of resource scarcity to implement reform plans. Following the Slovak Republic willingness to become part of Euro-Atlantic structures at the end of 1998 and as a result of the country's path towards NATO accession in 2001, comprehensive policy framework for the transformation of the armed forces (i.e. Model 2010) was adopted by the Slovak government. That guaranteed necessary resources for the Ministry of Defense budget chapter as 2% of GDP. Nonetheless, between 2009 and 2012 there was a sudden reduction in defense spending in the SR. Thus, the approved expenditures of SR's MoD decreased from 1.65% to 1.08% GDP. In absolute terms, the reduction in approved budgets amounted to around 27.3%. That occurred while SK was part of NATO, and similar trends actually occurred in Bulgaria and the Czech Republic (the latter, despite suffering from decline in its GDP allocation for the defense area it has however, implemented so far military modernization projects). The Slovak Republic belongs to the countries with the highest GDP growth, and yet with the largest decline in defense spending. For the time period under scrutiny, other ministries from the Slovak Republic did not record a significant decline. On the contrary, in absolute terms, in their case it occurred an increase in resources. That confirms that the greatest burden in reducing the financial government deficit in Slovakia is happening at the expense of the SR's MoD.

During the accession negotiations and after Slovakia's accession to NATO, SR's constitutional bodies repeatedly upheld their commitment to allocate resources to defense, respectively 2% of the gross domestic production (GDP) for the Ministry of Defense (MoD) as a prerequisite for the realization of long-term transformation plans (Government Resolution no. 604/2002, the resolution of the National Council (NR) No. 2403/2002, Government Resolution no. 133/2003, Government Decree no. 607/2004). This commitment to defense was not yet met in any of the years to follow. What is more, that happened within the framework of a decrease in the SR' s annual budget. For example, in 2015, the reduced f nancial framework, according to 2015 Budget Model, amounted to 1.85% - 1.86% of GDP.

The insuff cient f nances allocated to meet SR's armed forces' transformation needs affected mostly their modernization. Thus, since 1993, there have not been proper conditions to ensure any extensive modernization project for the main types of ground and aviation equipment of the armed forces. Modernization was fragmented and implemented on a limited scale, with a focus on the needs of troops posted to operations (personal weapons and equipment), partially modernized artillery , aviation technology and information systems. The most sensitive area is the lack of modernization of armored f ghting vehicles and wheeled armored vehicles, transport and special equipment, combat and transport aircraft (helicopters, transport aircrafts), as well as mobile communications and information systems. These commodities are crucial to guarantee that SR' s defense is part of collective defense, and hence ful f lling international commitments of SR, ensuring SR AF's interoperability with NA TO member countries' armed forces, as a precondition for joint action in international military units. The security requirements are not met by the budget allocated to the Ministry of Defense. That is unrealistic because it needs to support expensive resource projects which must be implemented on the basis of government contracts and long-term rescheduling far beyond the one election period of one government, as it is the case now. What is more, increasing operational readiness increases the resource demands incurred by the participation of the Slovak Armed Forces in operations. Between 2004 and 2010 that has increased three times, and the increase was parried by the budget of the Ministry of defense (only between 2008 and 2010 there was a 45% increase, in this respect). This disproportionate burden on the budget of SR' s MoD reduces the resources for maintenance and development of the armed forces. A further reduction in the budget of the Ministry of defense would make the participation in current operations unsustainable. The aforementioned reduction in the defense budget means a critical situation for the armed forces and, by comparison with other countries, the SR is ranks the last in this respect (**Figure 1).**



1 – Albania; 2 – Bulgaria; 3 - Croatia; 4 – The Czech Republic; 5 – Estonia; 6 – Hungary (data from 2011 are not available); 7 – Latvia; 8 – Lithuania; 9 – Poland; 10 – Romania; 11 – Slovakia; 12 – Slovenia; 13 – NATO (data from 2011 are not available)

Fig. no. 1. The proportion of defense expenditures intended for modernization in the new NATO member states in 2009 – 2010 – 2011 (%)

The emergence of armed conf icts in Syria, Ukraine, terrorist attacks in France and the migration crisis in Europe re f ect a changing situation in terms of defense security requirements. As a result, countries, including Slovakia, have begun to increase their budgets for defense and security.

3. FUTURE PROSPECTS FOR DEFENSE RESOURCES ALLOCATIONS

SR's Ministry of defense budget has, according to the government proposal for the 2016, recorded one of the highest increases compared to the other ministries. The additional funds are intended especially for modernization projects. Thus, through resource ef f ciency and increased spending on modernizing management department the obligations to which Slovakia has committed can be fulf lled.

While during past administration, there was only 8% allocated to modernization in 201 1, the amount increased to 16% in 2013, while today the expenditure for modernization reaches almost 19%.That supports the launch of the lar gest modernization project in the history of the Slovak Armed Forces, including the purchase of Black Hawk utility helicopters or Spartan aircrafts. This fact was also acknowledged by NA TO Secretary, General Jens Stoltenber g, during a visit to the Slovak Republic in 2015. He said that an increase in budget expenditures is to respond better to the security situation, which is now more complicated than ever.

Among the other positive trends recorded by the SR' s armed forces is also the ef fective functioning of the military intelligence whose contribution is highly valued among the partners abroad. Moreover , the Slovak President Andrej Kiska promised at the Welsh summit that in

the coming years the defense budget is to increase so that in 2020 is to amount to at least 1.6% of GDP.

Consequently, the key priorities for defense to build on are:

• Participation of the SlovakArmed Forces in MKM operations;

• Contribution to collective defense;

• The protection and defense of the airspace of the Slovak Republic as part of the integrated NA TO Air Defence (NATINADS)system;

• Contributing to NATO Response Force and the European Union Battalion Group;

• The role of national crisis management (helping citizens in Slovakia).

Additionally, the available technology, weapons and equipment must inevitably be considered. After a thorough analysis it resulted that the exiting technology and weapons systems are far beyond the end of their lifecycle or close to its endTherefore, modernization is the number one priority if Slovakia wants to keep up with its allies and be a valid member of NATO. The Development Plan of the Armed Forces targeting 2024 sets an ambitious role in this respect [3].

A necessary condition for the implementation of this option is to provide f nancial resources external to the SR MoD budget in the period 2014 - 2024. Modernization of defense technology and major weapons systems should be specif cally monitored through government projects. Chronology of the implementation of the projects will be aimed at producing comprehensive capabilities (units), mainly commodities as well as armored vehicles, supersonic f ghter aircraft, radar-technology air force, air defense means of ground forces. Implementation cost of these modernization projects will not exceed 0.5% of GDP each year.

Thecontent of the abovementioned development plan is described in the following paragraphs.

Phase I (Years 2013-2015):

- Multipurpose tactical vehicles;
- Modernization of infantry f ghting vehicles BMP-2;
- Project control of artillery DELOSYS;
- Upgrading/replacement of radar technology;
- Construction of mobile connecting and recognition Centre CRC;
- Making the system of command and control MOKYS;
- Replacement of automotive technology.

Phase II (Years 2016 to 2024):

- Multipurpose tactical vehicle - complete diversif cation;
- Upgrading/replacement of RL techniques for air traf f c management;
- Acquisition of 3D RL PVO;
- Development of communication and information network;
- Modernization of weapons, assault rif es and pistols;
- Intelligence, surveillance, tar get identif cation acquisition and reconnaissance (ISTAR) equipment;
- Role 2 f eld hospital equipment;
- Decontamination vehicles;
- Unmanned aerial vehicles UAVs;
- Modernization of artillery system ZUZANA;
- 3D radar - short range;
- 3D radar - close range;
- - Airport surveillance radar;

- - Implementation mode of identif cation of aircraft "foreign-owned" (5 IFF, with a HQII);
- Vehicle with ballistic protection TATRAPAN 6x6 (medical, command, ASTRA AD);
- Team equipment preventive medicine;
- The means of land electronic intelligence and recognition (SIGINT);
- Competences for civil-military cooperation (CIMIC).

The modernization projects, weapons systems, armaments and other means represent in f nancial terms more than 3.5 billion euros. In the case of homonymous distribution of those costs for the years

2013 - 2024, this represents an annual expenditure of nearly 300 million euros. These are substantial funds considering the current level of the Ministry of Defence budget.

The f rst phase of modernization (2013-2015) being practically ended, we must assess the completed and remaining modernization tasks. Scheduled tasks such as: the purchase of multipurpose tactical vehicles (Land Rover acquired), upgrading / replacement of radar technology, building mobile connecting and recognition Centre CRC, the acquisition of medium sized transport aircrafts procured aircraft Spartan, the command and control system MOKYS (Figure 2), ongoing replacement of automotive technology (Aktis 4x4 and Tatra 815 vehicles) were executed.

The modernization of infantry fighting vehicles BMP-2 (where the financial resources were allocated) is pending and only the control of artillery fire DELOSYS was not achieved.

Fig.no. 2. System MOKYS and transport plane SPARTAN

If this precondition is met, the fulf llment of tasks mentioned in the f rst phase could be fully satisf ed. In order to meet the target objectives set for 2024, the f nancial rate allocation must remain stable.

4. CONCLUSION

The document issued by Central Policy Institute (CEPI) called *"75 solutions for the Slovak defense"* [4] includes the solutions needed to achieve the end state. CEPI is a member of the Central European Strategic Council. Its mission is to assist in the creation of common regional responses to current challenges and to enhance the quality of discussions with EU and NA TO. It does so through the involvement of leading experts and institutions from Central Europe, promoting innovative solutions and close

cooperation with governments to make recommendations turned into concrete actions (5). Among other things, the document recommends the following:

1. Sign a political agreement between the ruling party and the opposition on a mechanism for financing defense and constitutional law to prescribe the gradual raising of funds for defense in order to meet obligations under the collective defense (2% of GDP on defense, of which 20% for modernization), thereby enabling adequate modernization.

2. Each year procurement plan should be submitted to binding contracts with a view to the next three years, including its financial envelope. The financial plan for prospective expenses should be made for six years in order to allow long-term planning procedures.

3. Operational deployment of AF SR contributions to the NATO Response Force and the EU should be financed from sources outside the budget of the Ministry of Defence. Modernization of the main types of military technologies should be made from sources outside the budget of the Ministry of Defence in the form of monitored government contracts.

4. Introduce a regular meeting of the members of the Finance and Budget Committee of the Parliament, the Defence and Security Council of the SR with officials of the Ministry of Defence and the Armed Forces in order to be mutual informed with the priorities and plans of the Ministry of Defence.

5. Modernization of systems, equipment and armaments should become in the next period of time an absolute priority for the state management and defense sector . This process must be based on a thorough systemic analysis of defense capabilities deficiencies and on finding alternate solutions for their retirement (considering the life cycles of individual weapons systems, training opportunities and their functioning in an international environment).

Capability development projects must result from the necessary sequence of steps from vision through strategies, concepts and long-term plans, armaments research, and development and procurement contracts. It is necessary to focus on overkill different types of armaments, equipment and materials so as to avoid inefficient, partial and often temporary refining, which is logistically challenging and in terms of operations unnecessarily expensive.

It is necessary to eliminate the "most urgent" provision of operational requirements, which are often carried out on the expense of planned and systematic procurement. In the armament field is therefore proposed to modernize equipment and technology by applying NATO standardized procedures and methods. The widely implementation of scientific, comprehensive and collective assessment principles could eliminate the individual and external influences. As a final recommendation, the Council for Military-Technological Development should be reinstated as an advisory body to the Minister of Defence.

REFERENCES

[1] SOPÓCI, M. – MA TTA, Ľ.: Strategy or Tactics? International conference "TAKTIKA 2015", UO Brno, 2015.

[2] Strategic Assessment of Defence, http://www .mosr.sk/20076/ strategickehodnotenie- obrany. php?mnu=518, Bratislava 2010

[3] Development plan of AF SR to 2024. Ministry of Defence of the Slovak Republic, Bratislava 2012.

[4] 75 solutions for Slovak Defence. Inštitút pre stredoeurópsku politiku (CEPI). Bratislava 2013.

[5] SZCZEPAŃSKA-WOSZCZYNA, K.: Managerial competencies in times of crisis, "Forum Scientiae Oeconomia", 2/2013, ISSN 2300-5947.

THE ADDED VALUE OF THE PROJECT SELECTION PROCESS

Adel OUESLATI

Land Forces, Tunisia

The project selection process comes in the first stage of the overall project management life cycle. It does have a very important impact on organization success. The present paper provides definitions of the basic concepts and tools related to the project selection process. It aims to stress the added value of this process for the entire organization success. The mastery of the project selection process is the right way for any organization to ensure that it will do the right project with the right resources at the right time and within the right priorities.

Key words: *project management, project selection process, impact, organization success, added value, project life cycle.*

1. INTRODUCTION

Project management is known to be the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Such application contributes to achieving organization objectives. It is only through an ef fective project selection process that or ganizations can choose and support projects that meet their strategic objectives. Even if it is not the only process in the project management life cycle, the selection process is strongly required to ensure the selection of the most suitable projects for the organizations. Also, the high level of insecurity in the modern business environment has made this area of project management crucial to the continued success of an organization.

So, the following questions come up: How can any or ganization ensure that the adopted projects are aligned with the objectives of its strategies, and contribute largely to achieving them? What are the key points to consider for successful project selection? What techniques and tools to use?

It is absolutely vital that the above questions are to be carefully thought of and developed. The selection criteria must be de f ned in the or ganization strategy management and should be designed to permit to take well thought objective decisions through an eff cient and transparent procedure.

Even if this process is only a preliminary procedure for the overall Project Management Process Group, it is still a very complex one because of its enormous input data and the variety of parameters.

Ensuring the ef f ciency of the selection procedure is absolutely crucial to maintain the motivation and conf dence of actors and to prepare for a faultless projects management and successful projects.

Indeed, the aim of the present paper is to demonstrate how important the contribution of the project selection process is in project success and how it permits to ensure that an or ganization will *"do the right project"*.

This document will provide descriptions of the main needed concepts to understand what project selection processes are used for . Furthermore, it aims at promoting the added value of the project selection process.

With a view to all of the above, the basic concepts underlying the project selection process will be f rstly presented. Then the key principles underpinning the project selection process will be proposed. Finally , the impact of the selection procedure on the entire project management process will be provided.

2. BASIC CONCEPTS

The project selection process consists in choosing a project to be implemented by an or ganization. Since projects require a signi f cant investment in terms of budget and resources, both of which are limited, it is crucial for an or ganization that the selected projects provide good returns on the resources and capital invested.

In this respect, a brief reminder of the de f nition of main concepts related to the project selection process is needed and useful.

2.1. Generation of projects

The context in which projects are developed is the f rst point that an organization must take into account. It may send out a public announcement requesting proposals for a speci f c project. This public announcement, called a Request for Proposal (RFP), could be issued through newspapers or individual letters. Firms or individuals interested in the project would then write proposals in which they summarize their quali f cations, project schedules and costs, and discuss their approach to the project.

It is possible that the proposed projects do not necessarily correspond to its objectives and strategy . Sometimes there is a shortage of projects, due to lack of motivation or energy. The organization can support capacity building.

In order to generate projects, the organization has the choice between two principal approaches: it can be either proactive or reactive. Obviously, it is better to be proactive by anticipating problems and consumer demands, because of the positive effects it has on the projects quality . That can be done by improving the organization strategy knowledge and the types of requested projects and by accompanying their implementation. Otherwise, the organization is forced to put long-term planning aside, so that it can respond to new problems.

The projects generation process aspect requires ef fective, strategic and proactive management, and helps to provide various and wide possibilities of choice in order to ensure projects quality meets organization/end users' standards. Indeed, the ef fectiveness consists in achieving objectives while making the best possible use of all resources. Also, strategic management is important to the project selection process because an outdated strategic

or a weak plan is indicative of organization stagnation.

If proposals do not correspond to organization strategy and objectives, the concerned or ganization has to work with the initiators to inform them, to guide them, to encourage them to submit appropriate ones.

And once a proposal has been received, there are numerous factors that need to be considered before an organization decides to take it up. This will be the job of the project selection committee or team.

2.2. Project Selection Team

For the evaluation of proposals, the Senior Project Manager should have already assigned all the members of the Project Selection Team. This team should be composed of representatives of all areas of interest and all project teams, taking into consideration the wide nature and scope of the project.

A Project Selection Team Charter will help to identify what kind of people and skills are needed, then it will assist in putting together the best team. This team has to choose an appropriate selection model to use and develop the selection criteria list. These criteria should include specif c points against which a proposal will be judged and "graded".

Then, the Project Selection Team leader will, provide his team with the list of proposals (proposed projects). This list should contain the necessary descriptions and motivations documents of each of them, based on the submission template/request for of fer provided by the requirements authority/ end user/funding or ganization and published. The project request template includes basic instructions for users on the form with notes for all necessary data. It will allow the project selection committee to capture need inputs related to, mainly the full business case narrative of the proposed project, estimate cost, link to the or ganization's strategic goals and estimate its staff ng resource.

There are always more potential projects than the or ganization resources will allow completing. The Project Selection Team is responsible for choosing the best projects. This committee reviews all the potential projects and then ranks them. Each committee member ranks the projects in terms of the added value they bring to the or ganization, namely from the most added value to the least added value. Then, these rankings are combined into a master ranking.

In this respect, some organizations ask for a credible expert approval to accept the proposed project. It means that the project initiator should submit a complete project f le to a designated off ce of experts. The latter will provide the concerned organization with a project approval letter which should be added to the complete candidature f le as a main document. Resorting to such experts does have to ensure the validity of proposal regarding some very complex and particular f elds of activity . Nevertheless, it could be seen as a lack of autonomy and it might have a cost and time implications.

There are various project selection methods practiced by the contemporary organizations. These methods have dif ferent features

and characteristics. Therefore, each selection method is best for different organizations. In the private sector , profitability is the added value measure, whereas in the not for profit organizations, the measure is related to the dynamics of the field that generates/reshapes the mission of the organization (e.g. security).

2.3. Non-profit organizations

Given the strategic outlook needed by organizations to be fully accountable to their stakeholders, it makes sense for every organization to ensure that the proposed projects are appropriate and that the development process results in successful projects that will contribute to its priorities. It is therefore important that organizations implement and use a project development process to promote and support the types of projects that correspond to their priorities that can be other than economic benefits. This kind of organizations is known as non-profit organizations. They do have certain specificities regarding their way to select their projects, particularly with the elaboration of the selection criteria based on humanitarian, social, scientific or any other kind of motivation. Nevertheless, it is important to notice that even these nonprofit organizations are used to considering budget related criteria in their decisions because no project can be implemented without funds or other types of resources.

Military organizations are included in this non-profit category of organizations. Thus, when selecting projects, they consider many criteria related to the national security issues such as alliances and security delivery.

However, the increasing consideration given to the new concept of the democratic control of armed forces requires more and more transparency regarding the project selection process. Indeed, the project selection process provides to best way to achieve this transparency objective. It needs, just to consider the specifications of the military institution, particularly when it is about strategic and long-term projects. In such context, selection criteria are very complex and cover many sensitive domains. Also, decisions are taken at very high level according to various and complex motivations.

The mastery of the project selection process can always provide the high level decision makers not only the professional tools to observe the transparency rules without compromising the institution interests, but also ensure that the institution is doing the right project. Both profit and non-for -profit organizations have specifications that, mainly, determine the type of techniques and tools to use for the project selection process.

3. TECHNIQUES AND TOOLS

Providing decision aiding models and techniques that can be used to help senior managers select projects is crucial. The present document does not focus on a particular technique or tool. It proposes a useful description of these models and techniques. This description is based on the study of previous experiences developed in different areas of activity.

Even if, there are many differences between project selection techniques and methods, usually the underlying concepts and principles are the same.

3.1. Principles

In general, the Project Selection Process aspect consists of administrative, general and specific quality criteria.

The administrative assessment criteria are used at the first stage of project application evaluation. They ensure that the project applications fulfill the defined requirements.

The quality assessment criteria are proposed to estimate how objectives and activities defined in project application correspond to the organization objectives and policies.

The specific assessment criteria provide a framework for an in-depth evaluation of the project application and help to select the best projects.

These three types of criteria should be developed in compliance with basic principles and guidelines. The aim of this section is to provide a brief description of these main principles by learning through some examples of project selection process implementation. It appears useful to propose, in such a context, a non exhaustive list of principles to be observed when implementing the project selection process and developing the selection criteria:

- The exchange of information among partners engaged in the development of project selection criteria and project applicants should be taken in consideration. It gives them clear and unique appreciation of the proposed project that would enforce their involvement in the selection process discussions.
- The project selection criteria development methodology should, among other things, include types of project selection criteria, criteria development approach (e.g., information needed to make a decision), scales that should be used to rate the level at which project application corresponds to criteria.
- Consideration of the capacity of final beneficiaries and the needs of target groups when developing project selection criteria is mandatory. Therefore the involvement of social and environmental partners in project selection criteria development should be enforced.
- A reasonable period of time for development of project selection criteria should be allocated. The period of time necessary for coordination and approval defined in Rules of Procedure of the partners should also be considered.
- The classification of project selection criteria in two groups: administrative assessment criteria and specific assessment criteria. Administrative assessment criteria could be defined specifically for large-scale and small-size projects; however specific assessment criteria could be defined separately for a specific activity.
- Different groups of project selection criteria depending on the scale of project (criteria for large-scale projects and criteria for small-size projects) should be considered.
- The selection should comply with organization objectives.
- The need to provide instructions on project selection criteria: these instructions would help project applicants and project application evaluators gain a better understanding on each project selection criterion.

All of the above are aids to improve the effectiveness and sustainability of the project selection process. However, it is also crucial to implement it the right way.

3.2. Steps

The aim of this section is to provide the basic steps to follow when implementing a project Selection process. The list of steps was built based on studies of some typical experiences in this f eld of activities. One of them was the Calls for proposals that have been published in the framework of the European Territorial Cooperation Program "Greece – Italy" 2007-2013. This is a typical example which can help to identify and con f rm the theoretical sequence of steps required by the project selection process.

The typical way to conduct the project selection process consists, mainly of a two-phase selection procedure. The potential benef ciaries prepare and submit the proposals to the Project Selection Committee. Each application will be subject to a selection process carried out by this Committee, based on a pre-established selection criteria list. In order to carry out the evaluation procedure, the Committee may be assisted by external experts.

In the **1st phase** projects are checked against their administrative compliance and eligibility criteria in order to ensure that they fulf ll the administrative and technical requirement s of the funding organization. Administrative compliance refers to meeting project submission deadlines, applying the template provided by the requirement authority/authorities and attaching all requested documents in the call for proposals. Eligibility criteria are described in terms of or ganization goals and the means by which projects submitted deem feasible to meet these.

The **2nd phase** is related to quality Only projects that demonstrate administrative compliance and satisfy the eligibility criteria will be subject to quality assessment. During this phase, proposals are evaluated using core selection criteria. The latter are divided into implementation-related criteria (the partnership, management and methodological approach, budget and f nance) and content-related criteria (relevance of the proposal, quality of results/ sustainability, innovation). These entail evaluating the nature of the proposal, its relevance with and contribution to or ganization overall objectives, its timeframe, viability and results and the management and evaluation methodology proposed. The quality assessment is based on a scoring system and results in a ranked list of all the applications.

It is clear that project decisions are diff cult to implement and need to be modeled precisely because of the plethora of detail in which the problem is embedded.

3.3. Models

The need for project selection models arises from the complex environment of nowadays 'organizations and the need to master it while making the right decision about priorities. Project selection models are generally divided in two categories: numeric and nonnumeric. These may be used at the same time, or as combinations. Nonnumeric models, as the name itself suggests, do not use numbers as inputs. Numeric models do, but the criteria being measured may be either objective or subjective.

This section aims to provide a better understanding of the way in which the tools are used. When an organization chooses a project selection model, the most important criteria to consider are (Verzuh, Eric:2003, 61-62):

- *Realism:* the model must mirror the reality of the decision making process within the organization with all its inherent constraints in terms of resources;
- *Capability:* the model needs to be complex enough to process multiple variable inputs like time periods, project related internal and external variation and thus enable an informed choice of the project that can overcome all of these factors.
- *Flexibility:* the model should give valid results despite changes in the organization's external environment;
- *Ease of Use:* the model must be easy enough to use in terms of data it uses, skills and equipment required and should not take a long time to yield expected results;
- *Cost:* these are the result of data gathering and modeling and should not exceed the benefits envisaged from implementing the projects the model is focused on selecting.
- *Easy Computerization:* it is related to the ease and convenience of the computer tools employed in gathering and storing information, as well as in transferring it to a given decision support system.

A model should evaluate potential projects by the degree to which they meet organization's objectives. To construct a selection model, therefore, it is necessary to develop a list of the organization's objectives. This list should be generated by the organization's top management.

In this respect, it is important to mention that the use of these models requires specific knowledge and training to ensure the efficiency of such an aiding decision tool.

There are two basic types of project selection models, numeric and nonnumeric. Both are widely used. Many organizations use both at the same time, or they use models that are combinations of the two. Nonnumeric models, as the name implies, do not use numbers as inputs. Numeric models do, but the criteria being measured may be either objective or subjective. It is important to remember that the qualities of a project may be represented by numbers, and that subjective measures are not necessarily less useful or reliable than objective measures.

The use of a specific kind of models within the two basic types requires to consider just what the model is supposed to do, never forgetting two critically important, but often overlooked facts:

- Models do not make decisions but people do: the organization top manager, not the model, bears responsibility for the decision.
- All models are only partial representations of the reality. Therefore, no model can yield an optimal decision except within its own framework.

The model can only assist organization top management in making project selection decisions. It should possess the characteristics discussed previously and should respect many principles when developing the selection criteria list.

Whenever the overall project selection process is well implemented, it helps the or ganization choose the best project that meets its strategic goals. So, it is only by this way that any organization can ensure that it will do the right project which will help to increase its chance of success.

4. PERSPECTIVES

Validity is a measure of the effectiveness of a given approach. A project selection process is valid if it helps an or ganization increase the chances of choosing the right project. Even if it seems to be relatively complex to implement, it has to be more and more considered by organization top management as a small mistake could be damaging to projects as a whole, and in the long run, the organization as well.

4.1. Impact

Project selection decisions incur strategic implications. The projects chosen for implementation by any organization impact its daily running, as well as its future as a result of the plethora of stakeholders whose requirements must be met and exquisitely balanced.

Projects are highly likely to be conducted over several budgeting cycles and to under go a "leaps and bounds" dynamics in this respect. Moreover, the tangible and intangible results of projects also incur time-varying f nancial costs and returns, as well as impacts over the years. Thus, project related decisions may have impacts on increasing revenues, decreasing costs, stakeholders' perceptions of the or ganization, organization's future in terms of new capabilities and learning. Consequently, project selection is not only about estimating the f nancial return on investment but also about all avenues by which projects can contribute their added value.

Thus, there is a strong need to account for all of the dif ferent types of potential impacts that project selection decisions can create.

Each project will have dif ferent costs, benef ts, and risks. Rarely are these known with certainty . The importance of a project risk depends on the nature of that risk and on the other risks that the organization is taking.

In the face of such dif ferences, the selection of one project out of a set is a diff cult task.

Obviously, the project selection process is to be considered and mastered through very performing techniques and tools.

All the previous mentioned factors related to the project selection process need to be taken in consideration in order to f nd out the best way to prevent their bad impacts on organization decisions and to ensure the right project selection.

4.2. Recommendations

Despite the previous cited impacts of the project selection process on the overall organization success, this process is still not really thoroughly considered by many or ganization top managers. It is often overlooked or skipped, particularly when the selection seems to be evident based on budget or other speci f c types of criteria. Too often, organizations rely on empirical evidence concerning their stakeholders' requirements.

Therefore, there is a strong need to promote the adoption and

use of good practices regarding the implementation of a project selection process which can help to avoid misevaluation in critical situation, particularly in some areas of activities such as the Communication and Information Technology f eld. Usually, in such areas of activities, environment as well as technology change rapidly and selection criteria are interdependent. For example, the budget criteria may depend on the quality aspects. So, only the compliance with the process principles and steps will permit to ask and answer the right questions and help to avoid misevaluation of projects. Also, the application of the entire project selection process will help to keep all the organization partners conf dent and motivated. So, they may endorse the implementation of the selected project based on a clear and professional approach.

To improve the ef fectiveness of a project selection process, it is advisable, for any or ganization manager, to plan and perform regular assessments of the overall process and especially the administrative, general and speci f c quality criteria regarding their ef fectiveness, their compliance with the or ganization's objectives and their sustainability . Then, the results of such evaluations should be documented in order to be considered by the next project selection committees.

Moreover, it is highly recommended to stress on the necessity to prepare the project selection process charter independently of the complexity of this process. This document will be f rst a proof of professionalism and then it will ensure the accountability of the project selection committee. Also, projects are selected for a variety of motivations and not all of them are overt. The project manager must understand why a project was selected over other proposals so that he or she can align the team toward justifying the choice that has been made.

Finally, it is imperative for the military organizations to acquire the capabilities for project selection process implementation, even when the project is be externalized. However, the project selection process should not be externalized for very good reasons because it uses very sensitive and classif ed inputs related to internal organization process. The mastery of the process will allow non-for-prof t organizations to be able to be independent in this sensitive f eld and then to preserve their external added value which meets exactly the main organization strategic goals.

5. CONCLUSIONS

In conclusion, it is clear that the project selection process is time-consuming, but it is absolutely essential for project management success. It is always best to have a good plan from the beginning, with a list of criteria to be considered. This guides the Senior Project Manager through the entire selection process and also ensures that the right choices are made.

Organizations will achieve their goals by conducting the right projects. But it is only through an eff cient selection process that they can choose and support those able to best contribute to the objectives of their strategy . So, the ef f cient selection of projects is decisive for organizations success.

Project decisions are often high-stakes, dynamic and with complex technical issues. These kinds of decisions are most diff cult to model because a successful model must capture every critical aspect of the decision, more complex decisions typically requiring more sophisticated models. That reminds of H. L. Mencken's quote *"For every complex problem there is an answer that is always neat, plausible and wrong"*.

In a perfect world, every organization would consider the project selection process and approach it in an objective way using the right criteria and techniques. In the real world, project selection is often carried out in a more or less intuitive way, which can compromise and affect negatively the entire management process.

Moreover, it is highly recommended that an or ganization should, continuously, review the overall project selection process and perform analysis looking for relevant recommendations to improve the effectiveness of project selection process. So, this process does have an added value that cannot be ignored.

REFERENCES

[1] http://enrd.ec.europa.eu/enrd-static/leader/leader/leader-tool-kit/the-strategy-design-and-implementation/the-strategy-implementation/fr/how-to-define-the-project-selection-criteria_fr.html, last retrieved 2015.

[2] European Territorial Cooperation Programme Greece – Italy 2007-2013 - Version 3.0 (PDF), Project Selection Criteria, online version last retrieved 2015.

[3] http://www.zeepedia.com/read.php?project_selection_modeling_the_operating_necessity_the_competitive_necessity_project_management&b=56&c=11, last retrieved 2015.

[4] http://enrd.ec.europa.eu/enrd-static/leader/leader/leader-tool-kit/the-strategy-design-and-implementation/the-strategy-implementation/fr/how-to-define-the-project-selection-criteria_fr.html, last retrieved 2015.

[5] http://www.tutorialspoint.com/management_concepts/project_selection_method.htm, last retrieved 2015.

[6] Thematic Evaluation of Selection Criteria for Projects Co- f nanced by the European Union Structural Funds SIA "PricewaterhouseCoopers"10.02.2006. – 11.07.2006. (PDF), available at http://www.esfondi.lv/upload/Petijumi_un_izvertejumi/summaries/18_Selection_Criteria_for_Projects.pdf, last retrieved 2015.

[7] Project Evaluation Guide For Nonprof t Organizations: Fundamental Methods and Steps For Conducting Project Evaluation. Imagine Canada (PDF), last retrieved 2015.

[8] http://ctb.ku.edu/en/table-of-contents/evaluate/evaluation/evaluation-plan/main, last retrieved 2015.

[9] http://managementhelp.org/evaluation/program-evaluation-guide.htm, last retrieved 2015.

[10] Verzuh Eric (ed.) (2003) The Portable MBA in Project Management, John Wiley and Sons.

ACKNOWLEDGEMENT

The present paper was written in the framework of the *Postgraduate Information Resources Management Course for Senior Officials* run by the Regional Department of Defense Resources Management Studies (DRESMARA) in 2015. The project selection process was among one of the most relevant concepts treated within this course.

MILITARY RETENTION. A COMPARATIVE OUTLOOK

Vasile SMINCHIŞE

Air Forces, Romania

One of the main goals for human resources management structures and for armed forces leaders is to maintain all necessary personnel, both qualitatively and quantitatively for operational needs or for full required capabilities. The retention of military personnel is essential to keep morale and unit readiness and to reduce the costs for recruiting, training, replacement of manpower. Retention rates depend not only on money or other social measures. The goal for retention is to keep in use the most valuable resource that belongs to an organization: the human beings and their knowledge. The aim pf this paper is to provide a comparative analysis of retention measures in various countries based on Research and Technology Organisation report released in 2007 and, thus, provide more examples of retention measures as far as the Romanian military system is concerned.

Key words: *military retention, recruitment & retention, retirement, pay, benefits, morale, military career.*

1. INTRODUCTION

Why are our best officers leaving the military? Why are so many of the most talented officers now abandoning military life? These two rhetorical questions are often heard in many armed forces around the globe and answers are various and more or less based on scientific studies. A short answer for these questions reveals a cruel truth: it's not just money. In this respect, it is astonishing to find out that 93% of West Point graduates [1] believe that half or more of "the best officers leave the military early rather than serving a full career". Misunderstanding of personal problems, promotion based on seniority rather than merit, lack or poorness of social measures, stressful climate, rigid or discriminatory attitudes of the high-ranked officers lead some of the best officers out of the military system before completing full term of service.

One of the main goals for human resources management structures and for the armed forces leaders is to maintain all necessary personnel, both qualitatively and quantitatively, for operational needs or for full required capabilities, without major deficits in force categories and military specialties. Thus, the replacement with recruits of the personnel leaving the armed forces by retirement or by their own will or the retention of existing personnel, trained and specialized to lead military structures or to exploit high-specialized equipment is compulsory. The retention of military personnel is essential to keep morale and unit readiness and to reduce the costs for recruiting, training, replacement of manpower.

A dictionary type definition of retention describes it as the action of keeping somebody rather losing it or stopping it to leave the system. Losing a member of organization is not only a blank in one box or a new vacant position. It means more: the loss

of knowledge and experience gained in years of work, and also wasting the material and intellectual efforts underpinning education and training.

The goal of this paper is to make a brief description of the phenomenon of retention in general and how high or low retention rates can be achieved using different solutions in armies around the world. The term of "military" used for this paper refers to all categories of personnel: professional soldiers (enlisted), NCOs, and officers. When some measures are targeted to a specific category of military personnel then the term used indicates that only a specific category is designated.

2. DEFINITIONS AND FORMULAS

Military retention is the term that refers to the measures taken in armed forces to maintain voluntarily the personnel during their mandatory term of service and after that. Military retention is measured in percentage by the rate of retention that could be defined by the ratio between the number of personnel that continues their service (n_1) and the number of personnel that started service (n_0) or by the ratio between the number of personnel that stopped their service during the time of contract (n_2) and the number of personnel that started their service (n_0).

$$R = 100 \times n_1/n_0 \quad (1)$$

or

$$R = 100 \times (1 - n_2/n_0) \quad (2)$$

$\rightarrow R_{max}=100\%$ and $R_{min}=0\%$

Another problem of human resource management strategy is to establish for medium or long terms retention desired rates, for each year, for the types of armed forces, category of personnel or military specialties. Setting retention rates must be based on the forecasted evolution of the estimated number of staff required annually or within a defined period of time, globally or for categories of personnel, using some formulas.

$$N_{max} = N_0 - N_{out} + N_{in} \quad (3)$$

N_{max}=upper limit of personnel (ceiling)

N_0=number of existing personnel

N_{out}=number of outputs

N_{in}=number of inputs (recruits)

or

$$N_{max} = N_0 - (N_{wout} + N_{pout}) + N_{in} \quad (4)$$

N_{max}= upper limit of personnel (ceiling)

N_0 = number of existing personnel

N_{wout} = number of outputs by own will

N_{in} = number of inputs (recruits & others)

N_{pout} = number of outputs without own will (retirement, medical cases, casualties)

or

$$N_{max} = N_{ret} - N_{pout} + N_{in} \quad (5)$$

N_{max}= upper limit of personnel (ceiling)

N_{ret} = number of retention

N_{in} = number of inputs (recruits & others)

N_{pout} = number of outputs without own willingness (retirement, medical cases, casualties)

Formulas (1), (2) and (5) are linked by a new relation

$$N_{ret} = R \cdot N_{exp} \quad (6)$$

Nexp = number of the personnel whose services expired in one year (or months, years, etc).

Of course, the number of personnel in the calculations will not consider militaries who could not meet the contractual terms relating to service period due to illness, injury or medical unfit declaration. In reality, the calculations take into account those seeking termination of a contract by their own will for various reasons and hence choose not to not sign a

new contract although the armed forces allow signing a new contract. In my opinion, a maximal retention rate of 100% is not desirable, nor a rate close to 0%.

Retention rate analyses should be done in close relationship with the rate of recruitment. A high recruitment and retention rate without clear criteria for further contracts in activity or lowering standards for the sake of maintaining a high retention can have undesirable effects, both on the number of candidates for recruitment, but also on the whole military system. Moreover, low retention can further influence the recruiting process. A low retention is generated by low wages or nonexistent social measures for the militaries. These things are usually known to young people who want to be recruited to the armed forces. How can it be attractive with low wages or without compensatory measures?

On the other hand, if many militaries choose to pursue their career/contracts, the number of new recruits will decrease, and the chances of promotion for existing staff will decrease or the military system will have too many experienced persons. This will have an effect in the future, when these militaries with experience and leadership skills leave the military system, creating a huge lack of personnel with the necessary experience. Sometimes, seniority and great confidence in this experience can cause failure, capping, and lack of interest in training or resistance to change.

When armed forces' goal is downsizing the number of people in the military system, it is clear that a simple solution is to obtain a reduced military retention rate or to decrease the number of recruitments. Obviously, a low retention rate is desirable because reducing the number of recruitments has negative influences also in short-term (reduction of training, number of staff in the centers of education and training) and long-term (creating a gap between generations, small number of people with low levels of experience, seniority promotion, etc.).

3. A SHORT ANALYSIS OF RETENTION

Retention analysis is quite complicated because there are many factors influencing retention and a lot of them are linked. Also, the retention of a military career concerns all part of a career: initial training, career and post-career phase. The relationship between retention and recruitment is very important, so that in many countries the solutions are established interdependent. This chapter tries to make a brief analysis of the factors influencing retention, relationship between recruitment and retention, and some aspects of retention in different periods of military career.

3.1. Military retention factors

The retention into many of NATO's armed forces can be attributed to one of following factors [1]:

- financial factors:
- pay and benefits;
- relatively higher private sector wages;
- social & psychological factors:
- mismatch between individual interests and job assignments;
- mismatch between social values and the military organizational culture;
- low unemployment rates in economy;
- misinformation during recruitment and selection;
- values research;
- individual differences and turnover;
- quality of life;
- gender and minority issues;
- military factors:
- military operational and personnel tempo;

- management of recruitment, selection, and classif cation;
- geographical location of military jobs;
- promotions systems based on seniority;

Any factor listed above can be solved in short-term or long-term. Any country has dif ferent issues to identify retention problems and the best solutions, also for short-term or long-term. Solutions are common across countries. But sometimes solutions for short-term can have negative long-term effects and costly consequences. For example, when rapid results are desired, as in the case of a low retention rates were reached in Romanian MoND between years 1998-2007 when bonuses for leaving Military worked very well. In the long-term, have appeared the lacks of certain categories of specialists who are diff cult to replace or educate.

Also, for long-term measures, armed forces need policies for human resources, stable laws, and well-def ned standards. If you want to keep same military personnel well trained, you cannot change annually the payment law or military pensions, because for militaries who began their careers made in their choice based on certain principles and prerequisites, and they will change negatively their perception and that situation can be perceived as a violation of the rights of militaries and therefore an important part of their system will leave Military.

Other studies [2] for retention have determined three major factors inf uencing retention:

- quality of work:
- job satisfaction;
- work enjoyment;
- a sense of pride in accomplishments;

- quality of life:
- pay;
- education opportunities;
- time at home;
- access to quality health care;
- a sense of f nancial security;

- quality of leadership:
- leadership of senior leaders;
- quality of leaders within their immediate chain of command.

Each factor must be examined individually and can be a subject to detailed or extended studies. Subjects of studies are most likely to leave Military because of a perception of high operational tempo, life balance, low service, declining pay and compensation, waning desire to hold senior leadership positions, and a widespread distrust of senior leadership.

Identifying the best solutions to a rate of retention is also complex, various measures aimed at solving the problem being already taken. In some countries, in the absence of applied studies, human resources structures and top-leaders of armed forces have taken measures based on experience, which applied progressively led to desired results for military retention.

Usually giving up military career is not because of just one of the factors from those enumerated above. The decision is taken because of gradual or simultaneous appearance of factors, just one acting as a trigger and usually that is the factor to manifest the last. This triggering factor forces the person to take a radical measure: leave Military for a new civilian life.

3.2. The relation between recruitment & retention

In many countries, recruitment and retention of personnel are considered and solved as part of a unique policy aiming at hiring new members and meanwhile maintaining existing personnel with already developed abilities, skills and knowledge. The personnel choose not to renew their contract with the military system for various reasons (a phenomenon also

known as attrition) can influence by their attitudes and dissemination of positive/negative/(un)real opinions in the public space, the number of recruits to the military system. Also, a small number of people who want to join the military system, reveals a reduced attractiveness of the military system to people (the reasons may fall in any of the following categories: low wages, deprivations inherent of the military system, relocation problems, gender and minority issues, etc.), leading in the future to reduced military retention. As mentioned earlier, lowering the standards of recruitment, education, evaluation, and retention increases the likelihood of using "less qualified" or less-motivated personnel.

Another case occurs when the low numbers in recruitment are aggravated by the fact that many military personnel attrite prior to the completion of their initial contracts. In this respect, many military personnel choose to return to civilian life later in their careers, attracted by private or public sector opportunities, with increasing wages or career opportunities. This happens frequently in specific specialties: pilots, IT specialists, some technical specialties. For civilian companies it is too expensive to recruit and train so they choose to "steal" well-trained and experienced workers from the armed forces.

Traditional recruiting, selection, classification and retention practices are no longer adequate to attract and retain the necessary military personnel to ensure the stability of readiness requirement. Thus, countries like Romania, Spain, Turkey who have relatively recently transitioned from a conscript to an all-volunteer force are seeking alternatives to the traditional approaches of recruiting and retention of personnel, especially in uncertain economic times or with low unemployment.

3.3. Retention problems during initial training and early career

Turnover of recruits and young militaries occurs for various reasons and most likely within the first term of service. It is obvious that early turnover is very costly to an organization. Firstly, there is no return on investment, so efficiency for education centers goes down. In addition, it is likely that turnover will have indirect and unintended effects on organizational outcomes. Disappointed militaries will disseminate their stories, real or unreal, and in doing so, probably repel others from recruiting or going on in service. Soon, this leads to some problems in organization's ability to retain newcomers and gain desired retention rates.

Disappointment leads to a decrease in job satisfaction and as a result to an increase in voluntary turnover. Also, the role of inflated expectations is generally accepted. Theoretically, this is an interesting construct to explain turnover intentions and behavior.

Another aggravating factor leading to a high rate of attrition is a promotion system based on seniority or cronyism. Some young personnel begin to lose their faith in the systems' fairness when only the length of service leads to the next rank or to a new assignment without realistic analysis, selection and evaluation. So, the evaluation and promotion activity should be based on standards established over a long period of time on accurate performance indicators, related to a specific work or job.

When asked why they left military service former military refer to concrete experiences and try to answer honestly: homesickness,

problems with the instructors/ leaders/colleagues, problems at home, a disappointing salary, losing the job he preferred, assigning to not-desired post, found a better job elsewhere, new opportunities outside Military. Hence, if all of the above are not properly taken care of through an integrated approach of human resource management, the military personnel as a group will be more dissatisfied, will be less committed to the organization, and will have higher turnover intentions.

3.4. Retention problems during career

Two major reasons lead people to leave the Military: the attractiveness of alternatives outside the Military and the dissatisfaction about the circumstances inside the Military. Of course, most decisions to leave are based on a combination of both reasons.

Pilots, IT-specialists, technicians and air traffic controllers are among the people leaving mainly because of the attractiveness of alternative employment opportunities. These highly qualified persons can easily find a new job in civilian life when the economy is good. The departure of these highly trained persons is a major problem for armed forces because they are very expensive to recruit and train.

Nevertheless, there are certain times when the reverse movement occurs in not leaving the military system due to economic downturn or low salaries outside the Military. For pilots and aircraft technicians, the Military experienced a temporary standstill of their departure due to the worldwide recession of air travel after 2001.

An important group consists of persons who were deployed several times. During the last decade, many armed forces contributed extensively in many operations abroad, especially in war zones on dangerous peace-keeping zone. Because of the age structure of personnel, many persons are considered too old and unfit to be deployed. As a consequence, the pool to draw from is rather small and the younger and mid-age persons fit to be sent abroad are deployed several times. In a number of cases, their family no longer accepts this and forces the person to leave the Military However, the refusal to assume the mission assigned may have negative consequences. For example, in the Romanian Armed Forces, non-acceptance of assignment in abroad mission organized by their unit means a mandatory and unilateral dissolution of the contract according to the law in peacetime or worst, a criminal conviction in wartime.

4. SOLUTIONS FOR HIGH RATES OF MILITARY RETENTION

The solutions to the problems of military retention are common across countries. One or more of the following measures and programs have been implemented across NATO countries [1]:

- increases in pay and benefits;
- family care and quality of life programs;
- improved selection and classification measures;
- guaranteed training programs;
- lowering standards;
- educational measures;
- retention bonus programs;
- varying contract length and so on.

Another classification of solutions can be made depending on the type of solution: financial, social, training, human resource management, material resources management.

Another classif cation can be made depending on the tar get population and the career level:
- general solutions, for long-term, during the entire career;
- early career solutions, including also for initial training;
- mid-career solutions;
- pre-retirement solutions, for the f nal period of military career;
- post-retirement solutions.

For each measure, some details and practical solutions applied by armed forces around the world, especially in Romania and other NATO's countries, are to be provided in the next subchapters.

4.1. Financial measures

These measures provide salaries or other f nancial benef ts for military personnel, so that leaving the military system becomes non-attractive and privations and diff culties of military life are counterbalanced by the f nancial gains. They are discussed below with their inherent advantages, disadvantages and by resorting to some specif c examples.

pay and benefits (pay rise, special service allowances, bonuses)

A balanced relationship between military salaries and civilian salaries (when looking comparatively at the defense and civilian sectors), and between off cers, NCOs and enlisted personnel (when focusing on how the military system is organized) must be set according to the labor market, so as to ensure the necessary personnel for the capabilities established by the national defense strategy . A major effort to improve both recruitment and retention should be a signi f cant pay raise for all military personnel to ref ect the overall evolution of the salaries in country or to highlight the role of armed forces on the labor market. Between 2001 and 2005, in Belgium [1] salaries were raised between 3.7%-33.5%, differently for enlisted, NCOs and off cers.

Between 1998-2010, to reduce the rate of retention and to force early retirements needed to reor ganize armed forces and to obtain half- decrease of personnel quickly , according to Romanian Government Ordinance no. 7/1998, Ministry of National Defense of fered the possibility of early retirement and generous bonuses proportional to the number of years of service remaining until retirement. Finally, the goal of simultaneously achieving a huge premature retirement and a low rate of retention was achieved in few years by money.

benefits for service time

In Spain [1], an extra compensation consisting of 3 extra monthly salary will be given all at a time in some units once they have completed 3, 5 and 7 years of service time and have been posted at least 12 or 18 following months in the same assignment (respectively those having served 3 and 5 years). This compensation is provided in addition to the regular extra compensation (also all at a time) every 4 and 6 years of service time.

In Romania, salaries of military personnel increase by 6% of the base salary after every 3 years of military service, up to a maximum of 42%.

retention bonuses for specialists

These measures are tar geted at IT-specialists, medical specialists, pilots, air-traff c controllers and others because their education is very expensive and lasts may years.

In Belgium [1], computer specialists were paid according to their military rank only , but lar ge numbers, especially the good ones, decided to leave. It was therefore decided to grant them a signi f cant retention bonus. This measure was not perfect. Thus, the question of

how to identify computer specialists appeared, because some of them were very good, but had had no formal training before and no formal proof of being a computer specialist in their personal file. Others were trained, but did no longer work as computer specialist (until they heard of the bonuses, of course). Finally, the persons who received the bonuses did not have to commit themselves to stay with the Military and no effect measurements were done.

In Romania, after 1 January 2015, the entire medical staff, including the military medical personnel, received bonuses of 25-30% from base salary to stop the exodus of medical personnel abroad.

In United Kingdom [1], a pilot retention scheme was used by the Royal Air Forces after 1999. It refunded pilots with the costs associated with obtaining an Airline Transport Pilots License or equivalent, in exchange for an undertaking to serve to at least the age of 38 or 16 years of service.That may mean that pilots are refunded up to £10000 of the costs associated with obtaining this license.

bonuses for deployment

Obviously, the willingness of being deployed would drop enormously if there were no bonuses. In Romania, bonuses for abroad deployed persons represent 50% up to 100% from basic salary and another additionally daily allowance. In Spain [1], the militaries posted in some specific locations, usually on islands or in far locations, are entitled to get some benefits, according to the posting.

compensation for studies and enlistment bonuses

In Spain [1] during the training stage, students earn a monthly pay (338 €). Once they have finished this training and signed the first contract, they get their salary (1100 €/month), plus a 564 € enlistment bonus.

In Romania, officers, NCOs, and enlisted personnel, after graduating their basic training and education, when they arrive in assigned unit receive one salary as a bonus.

house renting or buying allowance

In Spain [1], reserve officers and professional soldiers who have served over five years may earn a monthly house renting compensation. Although the impact of this measure is positive on retention, it could be stronger if the time required to get it were reduced to three years of service. Also, in Spain Armed Forces, every member may apply for a compensation to buy a house. This compensation consists of a fixed amount delivered by the Armed Forces Social Institute.

In Romania, according to Romanian Government Ordinance no. 1567/2005, Ministry of National Defense offered the possibility of monthly paying for a properly residence rent, if the person submitting for such an allowance is not a homeowner in the deployment area of the unit. The amount of this allowance is the rent price, but no more than 50% of base salary.

4.2. Social measures

These measures provide non-financial benefits for military personnel or for their families:

- personnel and family support offices and programs

In Pakistan, military personnel benefits are a house belonging to military facilities and a support office. This office offers a civilian worker to help him or his family for personal mobility aid, shopping and other domestic issues [as said by COL. Kamran SATTI].

providing daycare for small children

Belgium Military had a problem in f nding adequate daycare facilities for young mothers. In this respect, the Military Forces of Belgium [1] decided to open daycare centers in the lar ger garrisons. This solution has limits: daycare centers are only open from 7 AM till 6 PM, so mothers who have night shifts or are called up for exercises still have to look for other solutions.

In Romania, the Ministry Of National Defense has in use kindergarten for children of military personnel, but this measure is applied only in large or garrisons.

providing psychological support

Since it gradually became clear that deploying persons could be stressful both for them and for their family, a comprehensive system1 of psychological support for the member of the Military Forces of Belgium as well as for his family was set up. This was primarily done as responsible employer behavior, but undoubtedly has benef cial effect upon the retention of the deployed personnel.

In Romania, every unit has its own psychologist or some small units are assigned to a psychologist. The main duty of that specialist is to evaluate personnel and to provide for leaders any kind of necessary information about problems encountered by the counselled personnel during working hours, family related, informal relations inside the group.

operational trauma and stress support centers

In Romania, after the war experiences in Iraq and Afghanistan, it was created Social and Behavioral Research Center of theArmed Forces. This Center performs activities as evaluation of the specif c risk factors in abroad missions or operations and dysfunctional behaviors that can occur within them. This Center has also the duty to plan, or ganize, coordinate, monitor and enforce activitiesas psychological preparation of personnel, management of critical incidents, and prevention and control activities of operational stress.

post-retirement measures

In Belgium [1], retired personnel have the possibility to return after leaving the military . One of the possibilities a member of the Military has after leaving the or ganization is simply to come back, but within one year. This is useful and it allows re-engaging a person who did decide to leave, but found out that the other side of the Military is no longer black.

In Romanian MoND, Department of life's quality was established in 2009 by reor ganization of existing structures. Its motto is *"The armed forces cannot afford to ignore the social dimension of service relations for its current or former personnel"*. This structure reports directly to the Secretary of State for Relations with Parliament, Public Information and Welfare and provides:

- assistance to veterans, invalids widows of war veterans;
- conversion of personnel to civilian jobs;
- post-retirement assistance to retired personnel;
- quality of life of military personnel (salary, pension scheme, health care, feeding, housing, environment, equality, recognition of merit in service, recreation and restoring work ability , problem of veterans from war theatres, family support, and social issues.

For the f rst 3 tasks, the Department of life quality is the only structure involved. For the last one, it ensures only the transmission of the collected data to the Minister.

4.3. Human resource measures

These measures are tar geted to ensure legal rights for personnel, but only within provisions of laws.

promotion to next category of personnel (NCO, officer)

In Belgium [1], most of air traffic controllers were recruited and trained as NCO. They were paid according to their rank only, but attrition was high because of the length and difficulty level of their training. Meanwhile, the opportunity to work for the civilian authority as air-traffic controller was high because the wage for civilian air-traffic controller with 13 years of experience was bigger than the wage of the Chief Head of Defence of the Belgian Forces. So, it was decided to upgrade the function of air -traffic controller to the category of officer.

In Spain [1], 80% of vacancies are kept for professional soldiers (enlisted personnel) over 3 years of service time. Candidates must be secondary education graduated and not being over 33 years old. Candidates who are selected will join the corresponding training center. Also, NCO can be promoted officer after 2 years of training.

In Romania, most NCO are selected from professional soldier's category. Candidates must have high-school diploma (baccalaureate) and not being over 30 years old. Also, after 5 years of service at maximum age of 35, NCO can be promoted officer but after regular years of training. Also, in the case of high-deficit of specialized personnel, NCO can be promoted as officers if he has a bachelor's degree and after a short training (4 months).

flexible length of service or career schedule

As a sample for terms of service, in Romanian Armed Forces, the obligated term of service for officers and NCOs determined by the law for the initial contract is 8 years (10 years for pilots). After that, until they reached 15 years of service, the term is 4 years. After 15 years of service, the contract is signed until retirement age. For enlisted personnel, the term of service for first contract is 4 years and the next terms no more than 3 years.

In Belgium [1] it was decided to introduce short-term contracts to maintain an acceptable age structure within the Military. These contracts are available for the three personnel categories: volunteers, NCOs, and officers. At the outset, applicants had to sign a two years contract. They could extend their contract three times for one year, if they hadn't reached the age of 25. In order to make these contracts a bit more attractive and to allow more people to apply, it was decided to allow the applicants to apply until the age of 30 with the possibility to extend their contract for a total of seven years, if they hadn't reached the age of 34.

In Netherlands [1], Military aimed at eventually reaching an average length of service for fixed-term contractors of 7 years in 2009. The completion of this objective had been delayed as a result of the various measures taken to avoid exceeding the personnel strength. Before 2009, the length of service of military personnel on fixed-term contracts was between 4 and 6 years.

In Spain [1], career schedule helps soldiers to decide the number of terms suitable for them according to their expectations, abilities and opportunities. Also, they have the opportunity to work as permanent troop, until they reached the reserve age of 58.

using preferences when assigning to vacancies/assignment

Military personnel aren't universal soldiers or robots: they have changes in attitudes, expectations, aspirations and behaviour which an individual undergoes during his or her

service. For example, an unmarried soldier, NCO or officer may desire interesting operational postings, but once married, the same individual may feel reluctant to leave home for long periods or for same amount of money. Reasons for staying in the service change as these transitions take place.

In Belgium [1], during the classification process of the applicants, one has to balance the relative weight of the applicants' aptitudes for the different trades and their preference for these trades. During the last few years the importance of the preferences has been increased. This results in having more applicants to be assigned to the trade they prefer. It is assumed that this will lower early turnover.

In Romania, in peace time, for NCOs and officers, when vacancies occur, whole selection process is based on freewill requests according to provisions and regulations of MoND. These rules are changed in war -time, when entire selection process is based on orders and needs.

4.4. Measures for accommodation, feeding and duties

These measures aim to improve the conditions of accommodation, food and work inside the unit to fulfil duties in the best conditions.

improving lodging and feeding conditions

In Spain [1], especially on board Navy ships and in training centers lodging conditions aren't so good. To improve this, The Ministry of Defence will provide facilities within barracks for cultural, social, sport and leisure activities. In units with less than 150 soldiers there will be at least a cafeteria, a library and a soldier information office. Units with more than 600 soldiers will be provided with a soldiers' mess hall and a socio-cultural center (cafeteria, game room, gym and video room, library, computer room, language laboratory and multi-purpose room).

service outsourcing

Outsourcing aims at freeing militaries from a number of duties which are not their business.

In the United Kingdom [3], after 1983, as part of its aims of improving efficiency, MoD introduced a new competitive procurement policy, embracing competition for equipment and for support services. After 1991, MoD was reporting the use of contractors for catering, cleaning, laundry, security guarding and maintenance, engineering, supply, and support functions at Military Colleges and target simulation and electronic warfare training.

In Romania, after 2003, after discharging conscription, it was a huge trend to move a lot of needed basic services in Military towards to public of private companies. Tasks completed before 2003 by conscript militaries, such as cooking, laundry, cleaning, infrastructure maintenance, tailoring, even security were made by private companies. Because some services are quite expensive or very hard to be delivered in war -time or in large operations, after 2010, some specific services are fulfilled only by militaries, as a part of new logistic support system.

housing relocation service

In the United States [4], as part of the general policy to help militaries from one assignment to the next, usually far-away, the Department of Defence has Military and Family Support Center. The Relocation Assistance Program is designated to move resources to make militaries next

move easier. They offer individual move planning when experts guide one person through the relocation process. Military relocation services include consultations, workshops and brief ngs that can cover anything from housing to pets, even a help for purchasing a home.

4.5. Education and training measures

equivalence of diplomas

In Spain [2], 47 diplomas of military technician are validated by the Education Ministry.

According to the Law of National Education number 1/201 1, in Romania, military education is public education and part of the national education system. Professional specialties, high-school programs, university programs, curriculum and number of students are proposed by MoND to Ministry of Education. As a consequence, all diplomas and certif cates of education issued by military institutions are recognized by the Ministry of Education and are equivalent to those of civil education institution.

youth camps and pre-enlistment camps

In Belgium [2], one of the major reasons for early turnover resides in non-realistic expectations. To solve this were made youth camps and pre-enlistment camps. Youth camps are for youngster around 15-16 years old. During these camps, they lived in military units and follow a military program intended to learn them more about military life. The pre-enlistment camps were held one week before enlistment and were a very realistic preview of what they would experience once they signed their contract. So, one possible recruit could see if that his expectations are close to military duties.

using older instructors

One of causes of early turnover is the hard approach of the recruits and students by drill ser geants, because these drill sergeants are quite young and sometimes they have macho or harsh behavior . Therefore, in Belgium [2] an experiment was conducted in which older instructors trained recruits only . Their attitude seemed to have been quite dif ferent, because years of experience for the instructors could be easily the age of recruits. As a result much less turnover occurred during that experiment.

4.6. Matrix of measures during career

The measures listed and explained above are of course only some of the potential measures suitable to be applied and only some of those identif ed as being applied in military systems.

In my opinion, some measures can be applied at any time during career. On the other hand, measures like the use of experience in education and training is more suitable for the f nal part of career. Assigning to each measure a period during career, it results next matrix.

Many other measures can of course be found and analyzed. Any taken measures are important to obtain desired retention rates in the tar geted time period. As explained above, not all measures involve expenditures. Any measure has small or lar ge expenditure, so Military have to use measures under budget limits, provisions of the law, human resources strategies and defense policy.

Table 1. Matrix of measures related to career

Measure	Recruit & early career	Mid-career	Late career	Post-retirement
pay and benef ts	●	●	●	●
benef ts for service time		●	●	
retention bonuses for specialists		●	●	
bonuses for deployment		●	●	
house renting or buying allowance		●	●	
personnel and family support off ces and programs	●	●	●	●
providing daycare for small children	●	●		
providing psychological support	●	●	●	
operational trauma and stress support centers	●	●	●	
post-retirement measures				●
promotion to next category of personnel (NCO, off cer)	●	●		
f exible length of service or career schedule	●	●		
using preferences when assigning to vacancies/ assignment		●	●	
improving lodging and feeding conditions	●	●	●	
service outsourcing	●	●	●	
housing relocation service	●	●	●	●
equivalence of diplomas	●	●	●	●
youth camps and pre-enlistment camps	●		●	
using older instructors			●	

5. CONCLUSIONS

Retention is a continuous effort to maintain the strength of Military and to obtain the best results in retention rates. The leaders of Ministries of Defense around the world should develop strategies and policies targeted to human behavior and personnel needs.

To ensure its goals, the Military will:

- develop f exible terms of service;
- use contemporary work practices;
- attract and retain skilled workers;
- enhance career f exibility through transition assistance and choice;
- enable the rotation of personnel;
- improve career decisions by personal aspirations and employment needs;
- develop promotion system based on a meritocracy;
- apply fair and ef fective performance evaluation procedures;
- maintain two-way communication system between personnel and leaders;

- provide militaries and their families with social support measures in times of war and peace;
- develop policies for psychological support;
- recognize the value and performance through a system of honors and awards;
- make Military credible and visible in public life to ensure respect for military personnel.

Retention is recognized as being important in helping to maintain manning and there are some measures that have been taken to try to increase the retention of personnel. Of course, another concern should be the application of policy in the individual case. In many situations decisions and actions are constrained by laws, provisions, rules and regulations. Sometimes, there are also lots of situations when leaders and human resources managers should be considerably creative in f nding the right solution to individual problems. Leaders and human resources structures should establish and maintain a culture in personnel activities that makes all military personnel that they will receive the best treatment and advices that an employer deserved: honest, prompt and useful. When a decision that affects an individual member of armed forces is being considered, a f nal check on the rightness of the decision should be given in the form of the following question: "What would an person want in future from his employer?".

Finally, the goal of retention is to keep in use the most valuable resource that belongs to any or ganization: human being with his knowledge.

REFERENCES

[1] ***, R TO technical report for recruiting and retention of military personnel TR-HFM-107, available at http://www.nato.int/issues/women_nato/Recruiting&RetentionOfMilPersonnel.pdf, last retrieved November 9th, 2015.

[2] Guy Snodgrass, Ben Kohlmann, 2014 Navy Retention Study , available at www.dodretention.org/result, last retrieved November 9th, 2015.

[3] Keith Hartley , Military outsourcing: UK experience, available at http://web.cenet.org.cn/upf le/53057.pdf, last retrieved November 9th, 2015.

[4] www.militaryonesource.mil, last retrieved November 9th, 2015.

[5] Tim Kane, Why our best of f cers are leaving early , available at http://www.csmonitor.com/Business/Growthology/2011/0105/West-Point-graduates-Why-our-best-officers-are-leaving-early, last retrieved November 9th, 2015.

[6] Lawrence Kapp, Recruiting and Retention: An Overview of FY2011 and FY2012, available at https://www .fas.org/sgp/crs/natsec/RL32965.pdf

[7] Amy Shafer, Want To Fix Retention? Start by Making the Military a Real Meritocracy, available at http://blogs.cfr.org/davidson/2014/07/14/want-to-fix-retention-start-by-making-the-military-a-real-meritocracy, last retrieved November 9th, 2015.

[8] Skelton Ike, Military Retention Intangibles: Esprit, Morale and Cohesion, available at https://www .questia.com/library/journal/1P3-46119350/military-retention-intangibles-esprit-morale, last retrieved November 9th, 2015.

[9] www.rto.nato.int, last retrieved November 9th, 2015.

[10] www.rand.org/news/press/2010/06, last retrieved November 9th, 2015.

[11]www.ausa.org/publications/ausanews/archives/2015/08/Pages, last retrieved November 9th, 2015.

[12] Codreanu A. (2014) Gestionarea si dezvoltarea resursei umane (Personnel Management and Human Resource Development), "Carol I" Publishing House, Bucharest.

HUMAN RESOURCE MANAGEMENT (HRM) ASPECTS IN THE MILITARY MEDICAL SYSTEM. A CRITICAL VIEW

Adrian Valentin PANDELACHE

National Institute for Aeronautical and Space Medicine, Bucharest, Romania

According to research in the field, the fundamental element of every health system is represented by the institutional framework. The malfunction of the latter may be determined by either the political, or by the social and economic context. The decisions at the political level sometimes harshly affect health policies and their pace of progress. The HR support of the health sector during crisis has been affected as a consequence of arbitrary changes of the rules made by those who provide policies. This fact has determined a sudden and major reduction and a massive flee of personnel from the health sector, with negative effects on the health status of Romanians. With a view to all this, the aim of this paper is to provide an insight into the military health system.

Key words: *health sector, military health system, recruitment and selection, individual career management, health strategy, health financing, reform.*

1. INTRODUCTION

In recent years, deep changes have occurred in Romania. On one hand, there have been the political, economic and social changes undergone by the country in the overall reform process as a result of redef ning its position in Europe. On the other hand, there was the country's f rm option towards integration in a regional and global security system that satisf es its security needs. All of this led to the need for the military system to change, to adapt to new realities, transforming into an entity that is fully supple, f exible, and able to be a reliable and active partner in the process of interoperability and joint operations with NATO.

The need to create an army to better meet the new requirements to ensure the sovereignty, independence, territorial integrity and constitutional democracy and the compatibility and interoperability with NATO structures imposed a scienti f c approach to the theoretical bases of the or ganization of the military system, taking also into account the experience gained in this respect by modern armies.

Thus, an important aspect of this approach has constituted the analyses of f nancial, material and human resources available to Romania in this period and the extent to which these resources can be a real support for the redesign and implementation of one new military body to respond to security needs.

In this context, an important part of these major changes in the armed forces was the strategy of reforming and adapting to the current requirements of the military medical system with profound implications not only for the Romanian Armed Forces but for the health system in general, and for patients that need this system, even if they may come from the national defense, public order and national security system or from any part of the Romanian civil society.

In Romania the right to health is guaranteed by the Constitution as follows: "the State shall take measures to ensure hygiene and public health and organization of the healthcare and insurance system for illness, accidents, maternity and recovery , control the exercise of medical professions and paramedical activities, and other measures to protect physical and mental health of person shall be established by law" [1].

Moreover, the World Health Organization has established clear accountability of governments to their health systems it oversees, it offers a conceptual framework useful for starting outlining tar gets for health systems and emphasizes the need to elucidate the impact that indisputably health systems have on citizens' health: "all the activities whose primary purpose is to promote, restore or maintain health" [2]. Thus, the essential objective of a health system is health insurance. A health system must meet the expectations of the population, which implies respect for the individual (autonomy and conf dentiality) and client orientation (prompt and quality provided).

An important part of a health system is, as mentioned before, the military health system. In Romania, it is under the authority of the National Defense Minister and in the central structures it is represented by the Medical Directorate.

When reviewing the main tasks of the Medical Directorate, one of the biggest challenges of the latter is ensuring competent human resources, namely highly professional knowledge and skills along with inherent military values and traditions.

This challenge is not so easily tackled in a system where, because of many shortcomings such as underfunding, unfair competition, placing medical personnel among the most poorly paid in the public sector, lack of respect and trust from other social groups and government, corruption issue, it sometimes becomes almost impossible to attract more staff and to retain it.

Understandably, in such a context, designing a human resource management strategy and implementing viable human resource policies or designing an articulated system focused on raising medical care to the demands of patients that would allow the state system to compete with the private one can sometimes be impossible. Additionally, there are not too many palpable arguments to convince a doctor or nurse to also assume a military career given that the military status comes with restriction of rights and freedoms for which no compensation system can par. It might be worth mentioning that wage policies, used usually as an argument to motivate the staff, came to be so badly implemented that for equal conditions of employment, a civilian doctor in the military system

is better paid than a military one. That led to the creation of a precipice between civilian and military personnel, the first being paid much better, even if, working conditions and job descriptions include the same requirements.

Finally, the private system, which has adapted much quicker and faster than the state one to market requirements, continually recruits personnel from highly and multidisciplinary prepared military medical personnel, and provides them with far better than decent work conditions and reasonable wages. Accordingly, we are constantly in front of an exodus of medical personnel to private systems and lack of palpable solid retention tools.

What is more, a greater danger is the foreign medical market that is far more attractive even than the private system in Romania. And this entire phenomenon concerns in particular young staff, formed in the state system but with special skills and training above average. The result is that the military medical system constantly loses its human resources given its increasing retirement rates and the decreasing number of replacing personnel.

All of the above challenges fall mainly under the authority and competence of the Medical Directorate,and the Human Resources Management Directorate, as well as of other factors responsible from MoD. They have been constantly working on new strategies, policies and concepts to recruit, develop, train and retain well educated and trained staff to carry forward the tradition of the Romanian military medical system and raise health standards and level of medical services at a competitive level with other elements of the national health system.

In order to present these efforts, the following chapters will provide a broad overview of the system of human resources management in the medical field, including all system elements such as: structures and interdependencies, recruitment system, selection system and organization, composition, selection boards' power and operation, individual career management and its design, career development, medical and military training courses or by obtaining specific skills, continued employment or reserve and retreat domains. All these processes have particular aspects of the medical field and will be approached broadly, each at the appropriate time.

2. THE MILITARY HEALTH SYSTEM. STRUCTURES AND RESPONSIBILITIES

1.1. The Medical Directorate

The Medical Directorate of the Romanian MoD is the main structure of the military health system and, according to the Regulation on the organization and functioning of the ministry , it has the following main responsibilities:

- policy and regulations on healthcare, veterinary and veterinary health inspection and sanitation state;
- planning, scheduling and coordination of operational medical support and evaluations in the theaters of operations;
- assisting pharmaceutical and medical logistics;
- providing statistics and medical informatics;

- providing medical expertise on military skills to military service.

The Medical Directorate conducts and coordinates the following structures:

- Central University Military Emergency Hospital "Carol Davila" Bucharest;
- Military Emergency Hospital "Regina Maria", Braşov;
- Military Emergency Hospital "Dr. Constantin Papilian" Cluj-Napoca;
- Military Emergency Hospital "Dr. Alexandru Gafencu" Constanța;
- Military Emergency Hospital Militar "Dr. Ştefan Odobleja" Craiova;
- Military Emergency Hospital "Dr. Alexandru Popescu" Focşani;
- Military Emergency Hospital "Dr. Aristide Serf oti " Galați;
- Clinical Military Emer gency Hospital "Dr. Iacob Czihac" Iaşi;
- Military Emergency Hospital "Dr. Ion Jianu" Piteşti;
- Military Emergency Hospital "Dr. Alexandru Augustin" Sibiu;
- Clinical Military Emergency Hospital "Dr. Victor Popescu" Timişoara;
- Emergency Clinic Center for Cardiovascular Diseases "Academician Vasile Cândea" Bucharest;
- Balneophysiotherapy and Medical Rehabilitation Sanatorium, "Dr. Dimitrie Cantemir" Bălțăteşti;
- Medical Center Outpatient Diagnostic and Treatment, "Academician Ştefan Milcu" Bucharest;
- Military Scientif c Research Center for Health;
- Military Health Institute;
- Center for Preventive Medicine;
- Blood Transfusion Center of MoD;
- Zonal Pharmaceutical Center Bucharest;
- Zonal Pharmaceutical Center Sebeş-Alba.

Apart of these we have to take in consideration all the other medicals structures, part of MoD, starting from f eld units to Medical directorate structure.

If we talk about their activitysome statistics from 2014 are as follows:

- in primary care over 178,259 consultations and 1,045,000 medical treatments were provided;
- there were over 1,330,000 consultations and treatments in specialized medicine;
- regular medical control for over 85% of the armed forces was provided;
- in 12 military hospitals with 3,229 beds were conducted a total of 126,861 hospitalizations totaling 727,501 hospitalization days;
- over 138,000 peoples were hospitalized: 80% were insured and benef ciaries of Law no. 80/1995 out of which 35% were active military personnel;
- 85% of cases registered at the emergency units were civilian personnel outside the military system.

1.2. The National Institute for Aeronautical and Space Medicine "General Doctor Aviator Victor Anastasiu" (NIASM)

The National Institute for Aeronautical and Space Medicine "General Doctor Aviator Victor Anastasiu"is a public institution with legal personality established by the Government Emergency Ordinance no. 4 of 2000, approved by Law no. 279/2001, under the authority and directly subordinated to the Minister of National Defense and is part of the military medical system.

It was founded in 1920 and is the IVth aeronautical medical institution in Europe.

NIASM has the following responsibilities:

- providing medical and psychological selection and expertise of military and civilian aviation personnel;
- investigating the civil and military aviation bad events, upon request;
- providing scientif c research in aeronautical medicine;
- developing detailed technical expert medical rules and psychological capacity to ful f ll tasks in aeronautical and space activities safely and effectively;
- organize courses and exams competence in Aeronautical and Spatial Medicine;
- primary care and specialty health assistance;
- providing pharmaceuticals to the insured CASAOPSNAJ;
- represent Romania in international relations involving aerospace medicine.

To get an insight into the impressive volume of work of an institution with about 165 employees, below I will detail some statistical data from 2014:

- selection and medical expertise to approximately 7,000 military and 1,000 civilian aeronautical personnel;
- regular medical examination for a total of 8,800 people, military and civilians, and executed more than 1,000 psychological evaluations for no aeronautical personnel;
- in primary care they were given 38,746 consultations and medical treatment of nearly 13,000 patients;
- in specialized medicine were provided over 158,626 consultations and more than 15634 medical services and over 9,000 samples and functional investigations were carried out.

1.3. The Health Insurance House for Defense, Public Order, National Safety and Legal Authority (CASAOPSNAJ)

Another important factor in the system is the Health Insurance House for ministries and institutions in the defense, public order, national security and judicial authority f elds with an internal health system and its name is, by law, the Health Insurance House for Defense, Public Order , National Safety and Legal Authority, hereinafter CASAOPSNAJ.

CASAOPSNAJ is a public institution with legal personality and its own budget, subordinated to National Health Insurance House (CNAS).

CASAOPSNAJ is organized and functions based on its status, which respects the statute - approved by the Board of Directors setting the CNAS.

CASAOPSNAJ operates on the principle of or ganization and operation of the county health insurance funds in the health insurance system and concludes contracts for the provision of health services to the health institutions from Defense, Public Order, National Safety and Legal Authority f elds.

At national level, CASAOPSNAJ has around 1,150,000 insured people.

2. RECRUITMENT, SELECTION, EDUCATION, TRAINING AND DEVELOPMENTINTHE MILITARY MEDICAL SYSTEM

2.1. Recruitment and selection

In terms of the recruitment and selection system in the f eld, this is

ensured by Military Centers in every county and three Zonal Selection Centers. The data necessary for carrying out their professional recruitment for the military medical system are provided by the Human Resources Management Directorate and Medical Directorate and refers mainly to the number of places that the Medico - Military Institute provides for the annual competition for medical students and requirements necessary to apply. Otherwise, specif c activities are the same. College graduates who want to become students at the Medico - Military Institute follow the same selection stages as the other candidates for Military Academies, who must pass skills, mental, physical and medical evaluations and then, of course to be admitted by the military institutions of higher education. This is the direct pathway of recruitment.

The indirect pathway refers to calling in military activity and conferring appropriate ranks in military for civilian doctors or nurse, appointed corresponding to their training.

This activity is regulated by the minister of National Defense order . In accordance with its provisions, for a candidate to be called in a specialized medical activity which cannot be covered in the direct pathway, there must be a staf f shortage in this specialty and the candidate meets the conditions set by the law on age and training. Also, the candidate must pass the same physical, psychological and medical tests as the candidates following the direct pathway and, of course, to win the competition for f lling vacancies organized under the law.

2.2. Education, training and development

If we discuss about education, development and training, in fact, the Medico - Military Institute is the only military education institution that provides all types of training for the military medical f eld, and these are the following:

- university medical studies in collaboration with the University of Medicine and Pharmacy " C. Davila " Bucharest, which provides academic education and Medico - Military Institute supplemented by providing military training;
- residential preparation for medical university graduates in university clinics of Central University Military Emer gency Hospital Bucharest or from civilian medical system;
- training courses required for career advancement and promotion to the rank for medical off cers. In this area, Medico - Military Institute or ganizes the following courses:
  - course for medics assigned in military units, required referral to the rank of captain or appointment to positions set out in the or ganizational chart with the rank of captain;
  - course for medics assigned in large military units, needed to the rank of major or appointment to positions set out in the or ganizational chart with the rank of major;
  - postgraduate medico-military course for lieutenant-colonels necessary for lieutenant-colonel rank or appointment to positions set out in the rule of organizing with the rank of lieutenant-colonel;

- postgraduate course leading health services needed to be promoted colonel or appointment to positions set out in the or ganizational chart with colonel rank.

As regards advance to general and appointments referred to in the rule of or ganizing the rank of general, medical of f cers with the rank of colonel can attend the Strategic College courses of fered by the National Defense University or specif c courses of fered by the National Military College, if they meet selection conditions set out in the Order of the Minister of National Defense.

- training courses required for career advancement and promotion to the rank for sanitary NCOs. In this domain, the Medico - Military Institute organizes the following courses:
  - health instructor course, necessary to advance in sergeant rank or organizational functions within the positions with the rank of sergeant;
  - staff course for referral to the appropriate health chief sergeant -major rank or appointment to positions in the organizational chart provided by the sergeant -major rank;
  - management and administration being necessary health referral to the ser geant
  - adjutant rank or level of appointment to state functions within the or ganization with the sergeant - adjutant rank;

As regards the advancement to the next rank of NCOs, the Military Career Guide provides no ongoing military career as necessary.

- other courses related with medical or military training.

For military doctors, like for civilian ones, professional training is the most important is, since it is essential to medical career progression and that is divided into two main branches.

The f rst part of professional training consists of obtaining professional qualif cations. It is well known that after graduation, students become military doctors of general medicine and they are assigned in their f rst position.

To obtain a medical specialization, they need to enroll in 3-5-years residency program. The type of medical specialties and their number is decided by the Medical Directorate to the needs arising from the military health institutions and are published in the newsletter of the army . The exam can enroll graduates of general medicine who fulf ll others conditions stipulated by law.

At the end of the residency , the resident may enroll exam or competition in the specialty and obtain conf rmation as a specialist.

They can participate also in competition for f lling vacancies published by the Medical Directorate for specialist positions in their specialty.

After 5 more years they can participate and pass the exam for principal in their specialties.

Of course there is the possibility to get more medical specialties and that is common in the medical environment.

Moreover, in the medical specialties further training competent and high areas already exist or may be obtained, such as, for example, competence in cardiac ultrasound,

in ecHodoppler and further training such as aeronautics medicine or hyperbaric medicine.

Another form of training is the doctorate, which, after a period of at least 5 years of study and guidance, the doctors who qualify and enroll in the doctorate program can support the thesis to the committee responsible and can get their Ph.D. in Health Sciences.

The second part of personal training is the continuous professional training. This mandatorily involves yearly participation in various medical congresses, conferences, scientif c meetings and seminars organized both at home and abroad and that each is included in a score set by the Ministry of Health.

For every doctor a minimum score is also set and the points are cumulated during annual scienti f c meetings and congresses attended.

This is one of the important criteria that take into account the issuance of the free practice of the College of Physicians. If a physician has gathered the minimum score in a year, he cannot issue a certi f cate of free practice.

2.3. The activity of selection commissions

In the Romanian Armed Forces, the activity is regulated by the Minister of National Defense Order no. M. 69/2015, approving the *"Norms regarding the organization and functioning of ranking and selection system for career military personnel"*. Here are de f ned the relevant committees at the ministry level, their attributions duties, staf f structures, technical secretariats which maintain the commissions, the commanders at all levels duties, aiding the rights, obligations and criteria that must be ful f lled by those wanting to participate in the selection.

Thus, for the medical f eld, the most important selection commissions are:

- Commission for senior positions (generals);
- Commission for senior positions (colonels) ;
- Commission for central structures of MoD (from lt.col.-NCO's);
- Commission's for services – Land, Air Forces, Navy , Joint Logistic Command (from lt.col.-NCO's);
- Others.

The order also sets nominal membership of all commissions of selection. These are composed of off cers with higher ranks or at least equal to the maximum level of those who apply , and who occupy important positions at every level of decision to commissions work.

In order to ensure a transparent and fair selection system, activities in the selection process would be, in short, the following:

Military units send, hierarchically their vacant positions, in order to be published.

Vacancies are published in the monthly newsletter of the Armed Forces, with all the relevant function details: name, rank, military specialty, ranking coef f cient and other details deemed important, such as interview or request the approval of the competition, which is very important for doctors for example.

After a certain period of time, those who wish to participate for selection, prepare personal report stating for which position they want to apply.

The personnel structures of the units where the reports were made

are required to send the personal documents of the candidates required by the selection commissions.

The personnel structure of the units that published the vacancies is required to submit job descriptions to the technical secretariats.

The technical secretariats of the selection commissions select the candidates according to the legal content of the Order and proposing the selection of the entry meeting the selection criteria and reject those that do not meet requirements.

Also, taking in account criteria established in the same order , the technical secretariats calculate a score for each candidate and prepare summary tables with all candidates and their scores.

Tables with proposed military to participate in the selection, of nominees to be rejected, tables with scores of candidates and personal documents are working documents for selection commissions members, that meet, usually, once a month and establish the hierarchy of candidates.

The decisions of the selection commissions are sent to the military units from where the candidates came, the military units and commanders who have advertised positions and competent commanders appointing candidates on post.

The decisions are enforceable. The competent commanders are required to issue the order appointing the candidate who came in f rst.

For the vacancies requiring an interview as part of the recruitment process, the military unit who published has the obligation to organize interviews with the candidates communicated by the technical secretariats and to communicate the result of interviews to technical secretariats.

The result is a score from 1 to 10 for each candidate. If candidates fail to take 6 minimum to interview they are declared rejected.

For specif c functions such as doctor, or teacher , for whom the post employment competition is governed by national framework, selection commissions are only endorses participation, making sure that those who run for to meet the military criteria.

After that, the responsibility of organizing the contest for f lling the vacancy, according to the law is exclusively the attribute of the military unit. The latter will communicate after the contest the result to both commanders of which is to issue orders for appointment to positions and selection commissions.

3. INDIVIDUAL CAREER MANAGEMENT

In the design of individual military career, the most important structures and their responsibilities are as follows:

- Specialized departments – prognosis, planning, programming, organizing, coordinating and controlling, and participate in military personnel's individual career management;
- Specially established working groups – selection commissions with duties in legal documents, to facilitate consistent application of the principles contained in Military Career Guide (promotion of values according with competence, hierarchy of candidates of similar levels, decision – making regarding promotion, retention or retirement);

- Authorized personnel – commander counseled military personnel and career manager.

The main duties for Commander are the following:

- periodical dialogues with subordinates (development opportunities, suggest career path);
- monitoring subordinates during the training process, applications and missions;
- annual appraisals, proposal for regarding their further career development;
- counsels subordinates by exchanging ideas, in f uence in their character and values while professionally guiding them
- monitors subordinates;
- forwards employment needs to superior echelons.

The main duties for Counseled military personnel at individual level are:

- self – assessment of personal skills, needs and expectations;
- analysis of individual career options;
- communication of individual training needs;
- utilization of training and development opportunities;
- adherence to individual career path.

The main duties for a Career manager are:

- counseled group data base;
- ensure clear understanding of standards and performance criteria;
- permanent consultation;
- knowledge of vacancies with requirements and specif cations;
- draws up career plans;
- monitors the appointees' integration;
- Identif es training and education needs
- forward selection proposals;
- examines proposals related to prioritized f lling in of some vacancies;
- guides individuals.

Individual career management for military doctors is quite complicated. That is because, over the rules of military system, in order to be promoted, they have to meet also the civilian requirements, regarding specialty, continuous training, seniority and specif c exams.

3.1. Individual career management for military medics deployed in the military f eld

To provide a full outlook on the progress of a medical of f cer in his entire career, we must turn to the graduation time and assignment to the f rst function of a second lieutenant.

From here the choices depending on ambitions, personal opinions, and motivations and values start. An individual can stay in a medical unit and can choose to advance career on this track, aiming eventually at getting specialization in family medicine and working as a family physician for military unit personnel and their relatives and for other insurers have CASAOPSNAJ in the area.

Thus, with time for grade placement and promotion, career courses are required to graduate Ranks, military positions and the required courses for each are detailed in **Chapter 2.**

3.2. Individual career management for military medics deployed in military sanitary institutions

At this level it is assumed that the doctor followed the residency program, passed his specialty , was conf rmed by the Ministry of Health or

professional degree and is the holder of a post of specialist. Hereinafter, to advance in rank, to be promoted in a superior or in a position to superior management must meet both conditions result in job description military and specialized.

For example, in rank he will have to undergo compulsory military courses mentioned in Chapter 2.

For promotion to the position (on a higher post) it must meet the legal criteria set by the Ministry of National Defense to enter the race. For this it is validated by the competent selection committee from the ministry , which will determine if it meets conditions related to degree, experience, and other hierarchical level.

If approval for participation in the competition is favorable, he can join the contest for vacancies, if it meets the criteria set by the Ministry of Health related to their specialty years of experience, quality of services provided before their participation, rewards and sanctions and more. If the dossier submitted is validated, he can participate in the contest in conditions provided by the health ministry order.

3.3. Individual career management for NCOs

For NCOs who work in the medical f eld, career path it is largely similar to other categories. They are advanced to and forwarded rank depending on the period stipulated by law and whether properly f tted graduated course.

In addition, however , for those working in health institutions, they are approved annually by the professional association of nurses and midwives in Romania that issues certif cates for practice. For this endorsement it is required, as for doctors, to meet a minimum score on the annual continuing education. For this, they attend classes, seminars and conferences and other forms of expertise.

4. PROSPECTIVE SOLUTIONS UNDERLYING SOME CONSTRUCTIVE CRITICISM

Sometimes the easiest, instead of doing something practical and valuable, is to criticize.

Yet this is not the easiest part of my paper work but it is actually a summary of the problems that I faced in the recent years since I have been working in human resources in the military medical system. Some may criticize the character of generality and the entire system would be applicable to the military, but I want to dwell only on those that have a major impact on the medical system.

After 15 years of human resources and staff I would say that the biggest problem in the military medical system in human resources domain is the lack of an applicable and comprehensive strategy. Of course, as I mentioned in the introduction, it is almost impossible to have it. Social, economic, political environment, the whole Romanian society is changing very rapidly. What you think is valid today may no longer be applicable as of tomorrow and for something that should be applied as soon as possible, bureaucracy and resistance to change delay upgrading efforts. Of course, we need a vision but in such environments who may have it?

Who can predict how quickly medicine will change, what the new types of medical services and types of resources are, what kind of doctor you will need, what will be the future of medical specialties, how will

future medical structures look, how many of those attending school will depart, how many are coming in, how many you will need, what funds are there available, what is the impact of factors such as political decisions, social pressures, lack of transparency low funding and others.

4.1. Lack of a comprehensive and applicable strategy

One thing is for sure, no matter how many questions and unknown area we have, a comprehensive and applicable strategy in the f eld is required, f exible and reliable policies should be born from it and one of the political agreements should be that on human resources, because all the specialists know but many managers for get that the human resource is the best and most important resource. It also needs leaders, managers and HR specialists who know and can apply these policies, who can eliminate losses and that can streamline operations, which help guide or ganizations towards performance.

And especially, we need to learn from the experiences that we have, and transform them in knowledge to build the future. And here I give some examples.

4.2. Civilian transition to military doctors

It is well known that one of the methods of recruitment in the military system is the indirect pathway , as I presented earlier in the paper . The big problem is that civil legislation in the f eld is not harmonized with the military one.

And I say this because a doctor called in activity is available to the military unit to be placed, because the doctor can occupy the vacancies only after the competition or exam. The provision is valid for a period of 3 months with the possibility to extend it for 3 more months with the approval of the Minister. If after 6 months of making available an off cer this is not appointed it is passed according to law, in reserve.

The problem is the time at disposal to organize the competition. The vacancy must be published in the monthly newsletter of the armed forces; approval for participation in the competition must be obtained from selection commission and these entire activities can last up to three months, during which the f rst disposal expires and the military unit is obliged to report to the minister to come for the extension of three months. Not to mention the fact that sometimes, if a position is civil, its transformation into a military one is to take at least two months.

Inparallel, the issuance of approval to the commission may trigger other activities on the or ganization of contests and competition for vacancy in the public system, as stipulated by civil legislation.

In case the participant did not appeal or contest or the contest is postponed for objective reasons, the second period of extension expires and the doctor becomes a reserve off cer with no position to f lle, as stipulated by the law . True bureaucracy!

From what I know the Human Resource Management Directorate is working on a ministerial order to regulate such kind of situations by organizing the contest before calling the person in activity and grant the status of medical of f cer after winning the contest, which has much more logical. But it is still just a project...

4.3. The continuous training issue

Although for civilian personnel this issue is regulated by Law no. 53/2003-Labor Code, for military doctors it becomes a real problem when they have to participate in various forms of continuous training. That is because, for military personnel, in accordance with Law no. 85/1995, they can only receive permits, holidays, sick leave or study leave, under the terms listed in the Orders of the Minister of National Defense. And these forms of training are completely ignored and cannot be the reason to get study leave, while they participate in continuous training forms. Thus, they are put in a position to request days from annual leave to attend these forms of training which is completely incorrect. The situation is even more complicated when these forms of training take place abroad. Again the bureaucracy shows off its beauty! That is because ammending or supplementing the military law is so complicated that it can take years and in the permitting process, many changes that are considered less necessary, are simply forgotten to hasten the progress of documents.

4.4. Uneven and unfair remuneration

Remuneration is uneven, poorly applied and leads to aberrant differences in the system between people of the same kind that operate in the same working conditions.

In this domain examples are so many that, as I mentioned in the introduction part, instead of being an instrument of recognition of the hard work and motivation, remuneration has become a matter of dispute, misunderstanding and tensions between groups of employees, with direct impact on their professional performance.

But how did it get here?

In the military system two pay systems operate in accordance with the laws in force, one applicable for civilian staff and other applicable to military personnel. Over these two major systems wage regulations in the medical f eld, which isare applied differently for these two categories of employees, overlap,

Or rather, some apply to some and not to others, and always, because militaries are the most disciplined, often are for gotten when it comes to applying all wage increases in healthcare.

For these reasons, inside the health system it is possible to meet the following situations:

- a civilian doctor 's salary is signif cantly higher than a military doctor's, even if the education, training, age, medical specialty or work conditions are the same. The same happens with civilian nurses who are much better paid than NCOs;
- nurses with higher education are better paid than NCOs with higher education in the medical f eld, even if the eduction, training,, age, medical specialty and work conditions are the same;
- somenurses with higher education earn more than some members of the Committee Board, such as Administrative Director and CFO accountant, which are senior military positions.

Such examples can continue and it is obvious that they demotivate people and as I said, create tensions.

That is because the law is applied correctly but is done badly.

5. CONCLUSIONS

This paper is not meant to achieve more than it can.

It was meant to be a sneak peek into aspects of human resources in the medical field, and hence I tried an objectively present the processes and mechanisms of human resources system and the main problems arising during the development of my work and that seem to have a major impact on the field. It is also an opportunity to familiarize other specialists in the human resources domain with its particularities and to convince them why this system is somewhat different and perhaps more complicated.

It can also complement, and be knowledgeably adjacent for constructing an overview of the field of human resources in the armed forces and can stimulate the interest of specialists, at all levels, in learning more and more concretely the issues within the area, before starting the long road incurred by the construction of strategies and policies in the field.

I hope that not only us but also future generations of specialists in human resources will quickly understand the phenomena, will be more active, decisive and even incisive in the area of the new theoretical approaches and will become real transformational leaders of organizations that they will lead.

REFERENCES

[1] CONSTITUTION OF ROMANIA, TITLE II - Fundamental rights, freedoms and duties, CHAPTER II - Fundamental rights and freedoms, Article 34 -Right to protection of health, http://www.cdep.ro/pls/dic/site.page?id=371, last retrieved 2015.

[2] http://www.who.int/healthsystems/hss_glossary/en/index5.html, last retrieved 2015.

[3] Romanian Parliament, *Law no. 95/2006 on healthcare reform, as amended and supplemented*, Romanian Official Gazette no. 372/28 April. 2006.

[4] Romanian Government, *Decision no. 106 of 09 February 2011 on the approval of the Military Career Guide*, Romanian Official Gazette no. 125 / 18.02.2011.

[5] Romanian Government, *Decision no. 286 of 23 March 2011 approving the regulation framework establishing general principles for filling a vacancy or temporary vacancy corresponding functions of contract and the criteria for promotion degrees or professional stages immediately above the staff with the public sector paid from public funds*, Romanian Official Gazette no. 221 / 31.03.2015.

[6] Minister of National Defense, *Order no. M 105 from 26.08.2002 approving M.R.U. 1 Rules on human resources management system in the Romanian Army*.

[7] Minister of National Defense, *Order no. M 68 of 07.24.2015 approving the Regulation on competition or exam filling a vacancy or temporarily vacant civilian personnel of the Ministry of National Defense and the procedure for organizing and conducting promotion examination civilian staff contractual degrees or steps higher professional immediately or in a function with a higher level of education in the Ministry of National Defense*, Romanian Official Gazette no. 553 / 24.07.2015.

[8] Minister of National Defense, *Order nr. M 69 of 07/08/2015 approving the Norms regarding the organization and operation of ranking and selection system in order to increase career military personnel*, Romanian Official Gazette no. 596 / 07.08.2015.

[9] Ministry of Health, *Order no. 869 of 9 July 2015 approving the Methodology for organizing and conducting competitions vacancy physician, dentist, pharmacist, biologist, biochemist and chemist public health facilities, and the functions of head of department, head of laboratory chief department of health units without beds or function chief pharmacist in public health facilities with beds*, Romanian Official Gazette no. 524/14.07. 2015.

INCREASING THE EFFICIENCY OF EDUCATION SYSTEMS BY IMPROVING HUMAN RESOURCE MANAGEMENT

George BUCATA*
Alexandru Marius RIZESCU**

* Lucian Blaga" University, Sibiu, Romania
** Land Forces Academy, Sibiu, Romania

In today's economies, investment in education and in the training employees are at least as important as investments in heritage. We live increasingly longer in an economy based on information, technology and production, in which methods are changed rapidly and constantly. Human capital formation should be approached at least as good as physical capital formation and the reform in education should strive to treat the former obviously.

Key words: *Human resources, human resources management, education systems, education efficiency.*

1. INTRODUCTION

We can say without too much that error that contemporary society is an educational society - a society in which a man is educated from a formal point of view in a much higher proportion. Comparative analyses of the various educational systems highlights current strong bond that exists between the degree of social development, economic and cultural undertakings of a certain system's viability. In other words, we should note that a valuable educational system contribute to the overwhelming socio-economic and cultural society, through appropriate education of the members of the respective communities. With any doubt, the more a society is developed, the more it will have a better educational system. This mutual dependence requires doubling the need for rigorous research about the possibilities of contemporary educational systems, as well as linking these educational systems with changes that occur in the socio-economic sphere.

2. LITERATURE REVIEW

Researchers such as Simatwa 2013 [1]; Kelly & Odden 2008;Wang, Chich-Jeng & MeiLing 2010; Jane, Mattew & Bedi 2010; Raccah 2012 [2] suggests that the study of HRMD implies a combination of theories dealing with the social, psychological and economic dimensions of the leadership and employees. The major role of human resource management in such a context is to promote alternative ways of controlling behavior to reduce the effects of such conf icts and minimize the cost to the organization. This includes the two approaches of monitoring and incentive giving (Act of Managing Institutes, UK, 2009). While HRMD can be de f ned as the utilization of

individuals to achieve organizational goals, effective HRMD is required in organizations to get things done (Koc' 2010) [5]. Individuals dealing with HRMD matters face a multitude of challenges, ranging from a changing work force to government regulations, technological revolution and the recent global competition.

Those engaged in its management must develop and work through an integrated HRMD system comprising such functions as staf f ng, human resource development [6], compensation and safety and employee labor relations (Mondy 2009). B adri and Mourad (2012) stated that HRMD strategies enhance productivity and the effectiveness of the organization.

Dessler and Varkkey (2011) highlighted the importance of HRMD for any or ganization to work and prosper. They hold that the paradigm shift in HRMD from the corporate sector to the education sector is a result of rapid globalization in the f eld of knowledge and education, increased competition in the education market, reduced f nancial budgets for the education sector and changing economic downturn.

McClelland (2008) claimed that effective HRMD revolves around three major categories: achievement, aff liation and power. In an educational organization, the leaders use effective HRMD to build a framework where employees with dif ferent needs are motivated differently. To manage the employees suitably , high achievers in the or ganization should be given challenging projects with reachable goals and be provided frequent feedback. It is expected that the employees with a high aff liation need, perform best in a cooperative environment, hence HRMD managers strive to develop a collaborative environment in their respective or ganizations. Furthermore, the potential leaders within the educational or ganization should be picked and assigned with tasks and opportunities to manage others. In this way an ef fective system of management would be developed and the process of goal seeking would be made relatively easy (Mabin: 2007). HRMD mainly works to promote the productivity , performance and eff ciency of the staf for the achievement of organizational objectives and progress.

Human resources are critical for effective educational functioning. Human resources were once relegated to second-class status, but its importance has grown dramatically in the last two decade. Again, its new importance stem from adequately recruited, selected and supervised, inducted and adequately rewarded, provided for, properly develop, appraised and promoted on the job. They will be committed to the job, remain dedicated and productive in the education system. It also represents a signif cant investment of the educational ef forts. If managed well, human resources can be a source of competitive [3] strength for the education. Strategically , human resources must be viewed in the same context as the f nancial, technological and other resources that are managed in any organization (Onah: 2008) [4].

3. HUMAN CAPITAL IN AN EDUCATIONAL GLOBALIZED WORLD

At present, at the global level is increasingly observed that society as a whole is moving towards an era whose future essentially will be determined

by the ability of individuals to effectively use the knowledge and skills to adapt to changing economic and social environment. Economists of the twentieth century have shown the importance of investment in capital and infrastructure to gain competitiveness. However, the failure of a few countries to achieve signif cant growth despite lar ge investments in infrastructure and capital, has led to the granting of an increased attention to other categories of factors. Scientists have subsequently turned their attention mainly towards other factors that generate wealth, and therefore determines the level of competitiveness, such as: human capital, technical progress, macroeconomic stability, corporate governance, legislation, effective and transparent functioning of the institutions, the absence of corruption, bringing to the market, modernisation of f rms, demand conditions, market size, etc. [7]

In the new economic context characterized by instability , crisis and competitive pressures, human capital thus turns into an essential pillar leading to economic growth and development, being recognized as on of the engines of economic development, both at the social and community level and at the individual level. Closely related to human capital is made available in the academic world, and not only the importance of education, being well known that educational systems carried on through the ages have sought to adapt to the imperatives of economic change, to cause those transformations which ensured social cooperation.

Today, more than ever, education makes the dif ference, and general interest policy appears increasingly centred on the power of education in general, the higher, particularly in increasing the level of well-being and competitiveness of a nation. Famous economists have shown that between time and the level of development of a nation and education, there is a close interdependence. Moreover, under the conditions of globalization, drawing all the international institutions, along with a suite of scientists and policy makers, highlights the role of universities and graduates in the processes of innovation, so necessary to achieve the objectives of an economic nature.

Furthermore, the education and the division of knowledge guide individuals towards saving and investing in human capital, turning it into a vehicle of social inclusion policy; powers that individuals acquire and permit them to participate meaningfully in social and economic development (R.: 2010). At EU level, progress is more than visible; and over time was observed along with the increasing number of students and the increasing number of institutions, which is understandable if we consider the fact that we live in a knowledge-based economy and the demand for it is normal to record an uptrend. [8]

4. POLICIES OF QUALITY IN THE FIELD OF EDUCATION AT THE EUROPEAN LEVEL

Today, in Europe, there is a risk of weakening social cohesion from several causes, among which the most important are a considerable part of the unemployment population and in particular of young people's mistrust of democratic institutions, nationalism, corruption, violent

conf icts taking place in some parts of the continent and the growing gap between rich and poor . Therefore, the question arises to reinforce social cohesion is needed at different levels, in particular in order to guarantee the equality of all citizens as regards access to education, social dialogue between different groups and nations, the active participation of all citizens in the social, economic and cultural, as well as in decision-making processes. In Europe, companies are very different due to the presence of various ethnic and cultural minorities and immigrant communities, as well as a growing mobility of people.This increasing diversity is not risk free, because life becomes more complex social relationships become more diverse, and the school is faced with the presence of foreign pupils and students, and with an increase in violent demonstrations.

Education and vocational training is carried out in conditions when mobility is increasing at an international scale of pupils, students and employees, when it felt more and more the impact of new technologies, when it causes a radical change with the emergence of labour market and employment of multinational enterprises, when training is no longer can limit only at certain periods in the life of the individual but must be carried out throughout their lives, when education cannot be achieved without the participation of the local community. All these have resulted in the fact that, at present, European educational policies and strategies are geared primarily towards education in the spirit of democratic citizenship and social cohesion. [9]

Educational systems must face various challenges, developments and issues related to both the education and society as a whole. Under these circumstances, there is an increase role of education as a factor contributing dramatically to social cohesion. National and international competition requires quality approach in higher education, and performance can be achieved only where quality policy in essence becomes the life of the university . These policies are structured institutional goals and objectives of the or ganizational culture. In the f rst case it is pursuing, structures and procedures while in the second case it is pursuing value systems, evaluation metrics and creating new behavioural attitudes.

5. HUMAN RESOURCES DEVELOPMENT - PLANNING OF EDUCATION - TRAINING OF TEACHING STAFF

The development plans of the educational institutions are supported by well trained teaching staf f, involved in professional development and personal training through specf c arrangements. Continuous training ensures the updating and development of the competences of the teachers, including the acquisition of new competencies in the light of changing needs of education, the curriculum, and in the light of the requirements relating to the powers of adaptation to changes in the teaching staf f structures/processes of education.

Continuing training of teachers:

a) updating and development through training programs/ training, competence in the f eld

of specialization corresponding/ didactic function obtained through initial training in skills development for

b) evolution in teaching career through training system and the teacher's degrees;

c) the acquisition or development of skills of leadership, guidance, control, and evaluation structures of organizations of education;

d) acquiring new competencies, through programs of rehabilitation of the professional skill retraining/ for new specializations and/or new functions, other than those obtained through the initial training;

e) acquiring additiona l or competent extension which broaden the range of activities and functions that can be provided by teaching staff, namely teaching E-learning, teaching in foreign languages, educational counselling and career guidance in adult education, etc.;

(f) the development and extension of competences) cross-relating to social roles and personal and professional development, interaction and communication with the social environment and pedagogic environment. [10]

Continuous training is carried out in accordance with the provisions of the methodology of continuous formation of teachers from pre-university education mainly through:
a) the programs and activities of training scientif c training, psycho-pedagogical and teaching or in the areas of leadership, guidance and evaluation of education;
b) training and courses examinations for obtaining education and debate in the teaching grades II and I;
c) conversion programs.

6. CONCLUSIONS

The fact is that, at present, education must respond to several major challenges: to achieve a level of quality that would pass the test of comparison internationally , to improve management and accountability, to increase funding and to diversify funding sources.

These major goals involve changes in education, since we are in a pretty dif f cult situation: either we admit that the time has come for some vigorous action to identify and enhance the quality of education, where they exist, and sanction, direction and quality improvement, where needed.

REFERENCES

[1] Aloo, J O, Simatwa, E M W, & Nyang, R A 2011, *Impact of the School Based Teacher Recruitment Policy on the Distribution and Retention of Teachers in Public Secondary Schools in Kenya, A case study of Nyando District*, 2(March), 1006 - 1020.

[2] Achua, F C, & Lussier, R N 2007, *Leadership: Theory, application and skill development, 3rd edition, Cengage Learning, Canada. afza, T, & Nazir, M S 2007, Economic Competitiveness And Human Resource Development an Fdi Perspective*, 45(2), 167 - 180.

[3] Badea, L. (2012). „ *Educaţia competitivă – pilon al calităţii vieţii”*, a doua conferinţă a Şcolii Postdoctorale, Provocările crizei şi răspunsul ştiinţei economice, contract nr POSDRU/89/1.5/ S/59184, Secţiunea I – Mutaţii teoretico-metodologice în ştiinţa economică, 16 - 17 martie 2012, ASE.

[4] Barro, R. (1991). *„Economic growth in a cross section of countries”*, The Quarterly Journal of Economics, 106(2), pp. 407 - 443.

[5] Franekel, J R, Wallen, N E, & Yuhan 2012, *How to design and evaluate research in education, 6th edition*, McGraw Hills Publication, New York.

[6] *Human Resource Management Strategies and Teacher's Efficiency within Schools of Pakistan: A Co Relational Study Kiran Hashmi, Notre Dame Institute of Education (NDIE)*, Pakistan 0185 The European Conference on Education 2013 Of f cial Conference Proceedings 2013.

[7] Koç, G E 201, *Educational Research and Evaluation : An International Journal on Theory and Practice An investigation of student teachers ' study strategies with respect to certain variables*, (March 2013), 37 - 41. doi,10.1080/13803611.2011.587607.

[8] Onah, F .O. (2008). *Human Resource Management.* John Jacob' s Classic Publisher Ltd Plot 7 Fmr ESUT Road, Nkpokiti Junction Enugu.

[9] Ramoniene, L., Lanskoronskis, M. (2011). *„Reflection of higher education aspects in the conception of national competitiveness"*, Baltic Journal of Management, Vol. 6, Issue 1, pp. 124 - 139.

[10] Wang, F, Chich-jen, S, &Mei-ling, T 2010, *Effect of leadership style on organizational performance as viewed from Human Resource Management strategy*, 4(18), 3924 - 3936.

"A CHANGE OF PARADIGM" IN DEVELOPING LAND FORCES OFFICERS' PROFESSIONAL SKILLS IN ACCORDANCE WITH HYBRID WARFARE TASK-REQUIREMENTS

Alexandru RIZESCU
Florian CIOCAN

Application School for Combat Support Units "General Eremia Grigorescu", Sibiu, Romania

In future conflicts, not only traditional or asymmetric actions will be used, but also a combination of the two in order to solve the disputes involving national and international actors, materialized today in different manifestation forms called hybrid war. The hybrid threats tell about the evolution of the contemporary and future threats, about the necessity of a national effort concerted towards providing an immediate effective response to these threats. From a different perspective, the diversity and the complexity of the issues raised by the hybrid threats prove that it is necessary to go beyond the technical or sequential nowadays answers. It results first that it is required to develop an appropriate security strategy which will make possible the efficient action against hybrid risks and threats, in an effective, operational and unitary manner. Therefore, the present article aims at sequentially highlighting the aspects supporting the need to correlate the coordinates of the national security strategy to the planning, conduct and quality assessment of the process of training officers from the "change of paradigm" perspective, in order to acquire the professional skills conforming to the task-requirements specific to the hybrid war. Nothing more natural, more necessary and at the same time more current in this perspective than modernizing the military continuous education system in accordance with the strategic norm of competence.

Key words: *threat, competence, asymmetric war, hybrid war, paradigm, security strategy, task-requirement, professional.*

1. INTRODUCTION

The beginning of the 3rd millennium has been characterized by a high level of *"strategic fluidity"* and by a recon f guration of the power relations both at a global and a regional level. This *"strategic fluidity"* represents determinations that the political and military analysts, the head of state's leadership, various organizations and other international actors must take into account when reshaping the vision on the national security and defense issues.

In this context, Romania is concerned about increasing its capacity to plan a viable national security strategy, able to support the preservation of its national interests. Based on that and taking into consideration the realities of the Romanian society, a *"change of paradigm"* is required in developing

the professional skills of the army officers according to the task-requirements specific to the "*hybrid*" war, as a result of the different types of direct or indirect aggressions.

2. CONCEPT

Presently, we are witnessing the change of paradigm in the traditional war, determined by the fluidization, the gradually fading of the distinction between violence and non-violence, the interference between the terms, witnessing also phenomena and trends of replacing the latter. More accurately, the objectives traditionally promoted through instruments of violence are insinuated and supported by non-violent means (or, if not non-violent, at least non-armed).

"*The contemporary wars* – in Alvin and Heidi Toffler's opinion – *rise or lower the price of gasoline at the pump, of food in the store, of shares at the stock exchange. They cause ecological disasters. They erupt in our homes by means of the TV set screen. (…) Actually, what we watch was aimed at directions that the global public does not comprehend even today, a transformation of the military power which is intelligible only as we discover (…) the remarkable parallels between the emergent economy of the future and the rapidly changing nature of war itself, each accelerating the change within the other. Simply put into words: as we proceed with the transition from the brute force economies to brain force economies, we also necessarily invent what cannot be called but «war through brain power»*"[1]

The well-known authors, spouses Alvin and Heidi Toffler, highlighted the changes at the end of the millennium, characterized by the revolution in military affairs which was more profound than most of the military analysts and specialists could have imagined which tends to become reality. The entire society is changing and with it, the army is required to "*also change simultaneously at all levels – from technology to culture, to organization, strategy, tactics, training, doctrine and logistics.*"[2]

Currently, new risks and vulnerabilities have been identified in regard to the national, regional and global security. Among these risks and vulnerabilities we must carefully analyze those that the specialists call asymmetric threats.

The asymmetry "*means refusing to obey the rules of battle imposed by the opponent, thus making all operations unpredictable.*"[3]

This involves the use of force concurrently with the use of the unpredictable forces and weapons for which the defensive means are not always adjusted, methods which refuse the conventional war and are based on surprising and disorienting the opponent. Their purpose is to exploit the opponent's weaknesses in order to maximize one's effects.

On the other hand, analyzing the recent conflicts, the specialists unanimously consider that the threats that generate wars can be divided into conventional, unconventional and hybrid, the last ones being considered preponderant in the near future. Taking into account the cause-effect binomial, we shall see that *hybrid threats* are the ones that generate *hybrid wars.*

This concept of *hybrid war* has been developed in the military thinking in the US during the last decade, as a response to the necessity to adapt the military strategy to the realities of the new contemporary operational environment.

The term *hybrid war* [4] was defined by the research team from the Marine Corps of the United States led by Frank G. Hoffman and James N. Mattis. The concept was launched in the academic world in 2005 with the publishing of an article named *Future Warfare: The Rise of Hybrid Wars.* [5] In the authors' opinion, the conflicts in Afghanistan and Iraq have influenced the process of rethinking the military strategy in order to adapt it to these particular conditions.

On the other hand, in relation to hybrid war, one should mandatorily analyze the concept of *hybrid threat.* Hybrid threats develop rapidly, taking advantage of the conventional and hybrid opportunities, suitably combined with the opponent's weaknesses and the pursued objectives. At the same time, these types of threats take into account the perceived weaknesses and vulnerabilities of the opponent. Also, the hybrid threats aim at striking the adversary by using both conventional and non-conventional actions, asymmetric and symmetric means. Moreover, the phrase *"hybrid threat"* is expressed in connection with the conceptualization of a realistic description of the threat which pictures the way in which potential opponents use their capabilities to counteract the symmetrical advantages, in order to achieve their strategic objectives.

At the same time, the term *"hybrid threat"* is a sophisticated amalgam of unrestricted activities. A hybrid threat is characterized by decentralized command, military and non-military actions conducted simultaneously, combining the traditional, the asymmetric, the terrorist actions and disruptive lethal means, the specific operational environment conditions, all with the intent to take into consideration time and space to make the best decision according to the situation. [6] The concept of hybrid threat, once adopted, will persist and will expand through the entire spectrum of conflicts.

In Frank Hoffman's opinion, the concept of *"hybrid threat"* is appropriate because it is:

- a concept which describes the evolution of the nature of the conflict;
- a concept that challenges the current conventional military thinking and the intellectual binary classifications which presently define the debates in this field;
- a concept which emphasizes and confirms the width of the human conflict spectrum;
- a concept which amplifies the awareness of the potential risks and fuels the continuous debate related to the operational threat structure. [7]

The critics of the term of *"hybrid threat"* argue that this phrase actually defines a common asymmetric war put into practice through conventional operations. Some view this concept as a particular type of asymmetric war and not as a unique threat in an operational continuum. [8]

"Hybrid threats, accepted as representation at the level of the NATO Allied Command Transformation / ACT, are defined within the margin of an ability of one or more state actors, or a group of non-state actors to use a mix of actions (conventional and unconventional) in the battle space and beyond it, with negative effects on the opponent's decision-making cycle, towards achieving the pursued objectives." [9]

In order to be more speci f c, the best example that illustrates the concept and features of the hybrid threat is the 2014 conf ict in Ukraine.

2.DEVELOPING LAND FORCES OFFICERS'PROFESSIONAL SKILLS IN ACCORDANCE WITH HYBRID WARFARE TASK-REQUIREMENTS

Developing and training the military personnel in general, and the off cers, in particular, is one of the priority directions in the process of transforming and af f liating the Romanian military or ganization to the conceptual and operational evolutions both in the national and European military educational environment. The principles substantiating this orientation are essentially the following:

- the military educational system is part of the national educational system;
- the educational process must satisfy, through its product, the operational needs of the army and the necessity of achieving the interoperability with the NATO member states' armed forces and, at the same time, and must be connected with the training and the functional responsibilities;
- the objective is represented by achieving the competences of the military leader, established by the benef ciary (the units of the army).

Thereby, it is guaranteed that, through the professional level, the cultural level and the social behavior of the military personnel, the army will become an elite group of the Romanian society.

2.1. Curricular determinations

The design of the military educational system was based on the analytical and diagnostic procedures provided by the education sciences and closely connected to the general transformations of the society and the Romanian army.

To this end, the internal and external pressures of the comprising environments were taken into consideration, as well as their perceivable trends, resulting in:

- the irreversible option of Romania to join the Euro Atlantic structures;
- the general reor ganization of the armed forces on services simultaneously with its considerable size reduction;
- the reorganization of the national educational system;
- the academic education of off cers focused on their training as a military leader.

At the same time, the transformation of the military educational system started from the premises that, in the reason of the Euro-Atlantic integration, the integration through education is one of the f rst steps.

Considering these determinations, f ve essential actions were undertaken:

- the thorough documentation on the western military educational

systems, developing an inventory of models identifying the trends for the next millennia;
- the assessment of the status and the performance capability of the Romanian military educational system;
- the definition of the new philosophies of the system, in accordance with the evolutions and the developments in the army, the society and the world;
- the identification of the main challenges from the comprising environments (military, social-national, international) which compel the system to adapt;
- the design of the fundamental options and the operational directions in order to simultaneously achieve the two objectives: modernizing the education and achieving compatibility with the western military education systems.

In this way, the two objectives were simultaneously achieved:
- the design of a system which meets the actual and future interests of the Romanian army;
- the development of a system which is compatible with those of the NATO countries.

Since an elementary rule of the effective action involves the identification of priorities, we started with thinking the philosophy of the system, where the fundamental options and *"the model of the final product"* have been included.

2.2. The educational design through the set of graduate requirements

The national security strategy and the task-requirements specific to the modern war (including the hybrid war) determine the fundamental orientations of the process for the military personnel education. The set of requirements for the process of training the Land Forces officer is materialized in *the graduate model*, an expression of the task-requirements specific to the modern war (including the hybrid one). Certain theoretical and methodological considerations are captured, in regard to the application of the requirements of the national security strategy to molding the graduate profile, desirable from an organizational perspective.

This model was designed according to the skills (warrior, leader, trainer and citizen – all subordinated to its projection as future military leader) and depending on 3 dimensions: to be, to know and to do, based on maximal standards unanimously accepted by NATO. We shall briefly present a few theoretical references which laid the foundation of the design approach.

The educational design involves organizing (structuring) *"the actions and the operations which ensure the functionality of the system and the educational process at a general level, specific/intermediary and real/operational according to the objectives developed in terms of the educational policy"*. [10]

From a systemic perspective, this activity implies anticipatorily defining the objectives, contents, strategies of learning, the evaluation and identifying the relations between them.

The postmodern approach on education suggests the model of the curricular planning of the educational system which implies, as compared to the traditional model, going from the organizational structure founded

on explicitly defined contents to the organizational structure oriented by explicit and implicit objectives and methodologies. The principles of this educational design model [11] are:

- the principle of analyzing the needs of the society;
- the principle of analyzing the needs of the trainee;
- the principle of analyzing the content of the training.

In developing the officer's profile, it is required to identify initially the existent competences, actually practiced and, in connection, the structure of the set of specific functions. It is necessary and useful that the analytical approach to be extended through:

- the historical analysis: questions in past tense which should operate in key moments of the military action;
- the prospective analysis: questions in future tense on the possible and probably evolutions of the plans, vital for exercising the profession;
- evolutions in the global and regional geopolitical context;
- evolutions in the features and nature of warfare (military action);
- combined analysis of the military profession (historical and prospective praxiology).

Following the identification of the characteristic competences and functions institutionally assigned to the officer, a socio-professional model is sequentially built. The officer's template (a resultant of correlating the human model to the social model and the professional model) consists of the roles and functions specific to the military action, materialized in the competences defining the officer, these representing the strategic norm both in designing the graduate's profile and the training educational system.

The competences express types of actions (functions) and can be divided in groups, the equivalent of the classes of actions grouped in social roles. The first issue in detecting competences (therefore in *"planning"* them) is, as a result, that of identifying roles.

Specifying the abilities as such within the groups of competences methodologically sends us to specifying the functions within the roles. The functions are mainly generated under the impact of tasks, of operational requirements, of actual military challenges that must be faced by the agent of the professional action.

"The architecture of the professional model"[12] presents, in a plausible manner, a composition which contains:

- general-human competences (by expressing, we repeat the genetic capability of the professional agent, not in *"diffuse embodiments"* of *"opaque background"*, but of combinations appropriate to the specificity and purposes of each professional category);
- social-historical competences, identified by the imperative of adjusting the professions to the social-historical context of the professional action (with the same observation that it is necessary to insist according to the nature of each professional category);
- actual professional competences, directly connected to the *"specificity of detail"* of the professional action.

At this last level, the architecture of the professional model requires and includes the deepening of specifying in the following ways:

- since there are no *"isolated professions"*, each profession being included in a *"category of professions"*, *"the first"* professional competence will aim exactly at the horizon of the professional category , the knowledge and the abilities common to all the professional agents, irrespective of the actual particular profession;
- the particularity of the profession is ultimately *"its hard core"*; the vectorial homogenization of tasks supports the particular constituency (sometimes, even singular of the professions); the professional model will include, mandatorily, a particular-professional competence with a high content of operational specialization;
- as much as it may be centered on tools (physical, technical), the profession is not singularly human; the professions are assumed by groups of professional action, situation which involves the ability appropriate to an individual professional agent to relate and to inf uence the other individual agents and the entire group (the personal inf uence ability).

The complexity of the of f cer's professional prof le is actually in the order of evidence. Certainly , the off cer, as opposed to other agents of the professionalized human action and as compared to them (action agents in the classical f elds such as engineering, education, economical structures and processes management and so on), is required to professionally form and express his prof le according to the highly stressed specif city of the military action, of the structures and the collectivities in the army. Last but not least, are required the capacities of the historical and political-strategic analysis, of active social integration, of apprehending the global horizon of the national, continental and global security. At the crossroads of all these educational factors, of these professionalization routes, the core of the competences is articulated, their distinct quali f cation is being built, which can only be one based on specif c standards.

The validation of the social-professional model of the military personnel is done depending on the criteria of completeness, essentiality and perenniality. Thus, it is generally accepted to articulate the professional prof le of the off cer by the syner gic correlation of the following def ning skills:

- the warrior skill;
- the trainer skill;
- the military leader skill;
- the off cer-Romanian citizen skill;
- the army specialist skill.

Explaining the skills through competences provides the methodological framework of ref ecting the security strategy at the level of the set of educationalf nalities by operationalizing the competences in educational objectives and contents.

3. REFLECTING THE TASK REQUIREMENTS SPECIFIC TO THE HYBRID WAR IN THE TRAINING CURRICULUM FOR LAND FORCES OFFICERS

"In the horizon of the holistic approach of the officer profession and of the evolution in his career,

a special significance is acquired by the entire training process, the formative continuum on which he is focused. Therefore, we assign to the continuous training of the officer the sense of a set of theoretical and practical activities institutionalized at a system level which implies their direct and organized participation in order to develop their professional competences and the optimizations in relation to the specific functional requirements."[13]

The educational curriculum, according to the general and specific standards of academic evaluation and validation, is centered on developing competences and abilities and not on the content itself. Curricular design is based on the socio-professional model of the officer, developed by the Land Forces Staff.

Substantiating the training according to the competences (which will be developed), meaning to rationalize and optimize the entire training-educational system was gradually done as it follows:[14]

- designing the capabilities specific to competences;
- designing the educational curriculum;
- designing the knowledge, the skills, the behaviors;
- designing the educational subjects (according to competences and abilities).

The analysis based on the areas of generating the capabilities results in the inventory of the capabilities. Relating to this inventory, the academic curriculum specialists design the necessary and sufficient content for forming each capability. Designing the learning content is done after identifying (designing) the abilities of the military personnel, because:

- the capabilities define, characterize the actual actions and practices of the officer in each of his competences;
- the capabilities create the direct "openness" towards knowledge, since it must be "covered" with the necessary and sufficient content, instructionally developed, supplemented and improved throughout the military career.

Of course, the content which circulates the conceptual elements in regard to the national security, as well as those meeting the requirements to cover the orientations and the openness formulated in the security strategy, is materialized in training modules or subject matters organized and structured according to the modern educational requirements, equally adapted to psycho-physiological particularities specific to the human resources involved in the training process.

4. FINAL CONSIDERATIONS

The framework defined by the topic imposed as a starting point the new paradigms of the national and Euro-Atlantic security. It is now possible to identify the substantiations that the security strategy is inducing on the military body in general and, in particular, on training the officers of the Land Forces.

We concluded, with relevant arguments and illustrations, that the training process, through the assigned and assumed educational end-states, through the content and organization and through the ways

in which it is managed, is actually the product and the expression of the fundamental strategic orientations in accordance with the national security and the expression of the task-requirements specif c to the modern war (including the hybrid one). Also, the ar gumentation necessarily included the comparative relation to the materialization of the studied issues of similar systems in the other NATO member states.

We consider viable and useful the constant and timely application of the correlative approaches which aim at:

- reassessing the educational curriculum designed for training the off cers in concordance with the conceptual transformations regarding the national security; any subsequent modi f cation determines a new reassessment;
- redesigning the of f cer's competences according to the mutations occurred in the spectrum of Land Forces missions;
- matching the requirements regarding the compatibility within NATO structures which should not exceed, but, on the contrary, complement the national security needs.

In this context, it results that the curricular design becomes ef f cient when it covers, from the perspective of the continuous training, the evolution in the of f cers' career, it provides specialization according to the function and/or mission and gives the possibility to dif ferentiate based on competences and social needs.

Another conclusion refers to changing the methods, the means, the processes, in one word *"the training philosophy"* vital for the present and the future of all the structures of the Romanian armed forces. Transforming the Romanian armed forces, in general, and the Land Forces, in particular , is not a purpose in itself, but the right, timely and decided response to the evolution of the contemporary operational environment, to the transformation of NATO and the commitments that Romania has assumed within EU and within other security and European cooperation organizations.

REFERENCES

[1] Alvin and Heidi Toff er, *Razboi si anti-razboi. Supravietuirea in zorii secolului XXI (War and Anti-War. Survival at the Dawn of the 21st Century)*, Bucharest, Antet Publishing House, 1995, pp.15-16,22.

[2] *Ibidem*, p.45.

[3] *Strategia nationala de aparare (National Defense Strategy)*, http://www.presidency.ro/static/ordine/SNAp/SNAP.pdf, p. 17.

[4] Mattis James, in 2005, had the rank of lieutenant general and was the commander of the US Marine Corps *Development Command Department* in Quantico-Virginia, and Frank Hoffman had the rank of lieutenant colonel (r) and worked at the *Center for Emerging Threats and Opportunities* in the same location.

[5] James N. Mattis & Frank Hof fman, *Future Warfare: The Rise of Hybrid Wars*, U.S. Naval Institute, Proceedings Magazine, November 2005.

[6] GLENN, *Proceeding from the 2009 Hybrid Warfare Conference*, p.7.

[7] Frank G. Hofman, "Further Thoughts on Hybrid Threats", *Small Wars Journal* (March 3, 2009), http://smallwarsjournal.com/blog/2009/03/further-thoughts-on-hybrid-thr/, pp.1-2.

[8] Brian P. Fleming, *The Hybrid Threat Concept: Contemporary War, Military Planning and the Advent of Unrestricted*

Operational Art, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ada545789, p.5.

[9] Gabriel ANGHEL, *Particularitati ale conflictelor viitoare. Amenintarile hibride. Razboi/conflict hybrid (Particularities of the Future Conflicts. Hybrid Threats. Hybrid War/Conflict,* http://www.mapn.ro/publicatii/1_2011, pdf, p.58.

[10] Sorin Cristea (1998), *Dictionar de termeni pedagogici (Pedagogical Terms Dictionary)*, Bucharest, Didactic and Pedagogical Publishing House, p. 385.

[11] R.W.Tyler (1950), *Basics Principles of Curriculum and Instruction*, Chicago, University Press, p.88.

[12] Iacob Dumitru, *Competenta si schimbare. O perspective politico-militara si educational (Competence and Change. A Political Military and Educational Perspective)*, Bucharest. High Military Studies Academy Publishing House, 1996, pp.161-165.

[13] COL Alexandru Babos, Ph.D., *Academiile categoriilor de forte armate – etapa fundamentala in procesul de "formare continua" a ofiterilor (Service Academies – an important stage in the Officers' Continuous Training Process),* Gandirea Militara Romaneasca, issue 2/2001, p.99.

[14] Iacob Dumitru, Op. cit., pp.161-173.

PHISHING AND E-COMMERCE: AN INFORMATION SECURITY MANAGEMENT PROBLEM

Mircea Constantin SCHEAU*
Adrian-Liviu ARSENE**
Gerald DINCA***

*Romanian Commercial Bank, Romania
** Bitdefender, Romania
***Romanian Banking Association, Romania

Phishing and E -commerce have at least two things in common - cyberspace and money, and the intersection of the two is often built around services and products offered by banking institutions and investment trusts. Nowadays, fraud economy and fraud methods that have been known to be particularly prolific for cybercriminals are hot issues. Attacks have become refined, with time and profit as determining factors. The risks of being discovered are significantly lower as the analysis preceding offenses is more comprehensive. Inside pawns or accomplices increase the chances of success for fraudulent actions. Cyberspace offers boundless possibilities. Technology is accessible to all. Innovation supports developments in all areas. The same device can be used in various areas. Imagination is the final frontier.

Key words: phishing, e-commerce, vulnerabilities, f nancial institution, browser

1. INTRODUCTION

Phishing is one of the most popular forms of fraud by which an attacker tries to f nd conf dential information specif c to an average user, such as authentication credentials or information on login to public infrastructure, through communication channels (e.g. e-mail services Instant messaging, SMS, etc.).

It is an extremely popular tool within communities of cyber criminals because it is easier to try and cheat a ”target” by sending an apparently legitimate e-mail with a link to a resource controlled by the attacker , than attempting to break into a remote and most often advanced protection system. Successfully addressing such an attack is necessary. However, sophisticated marketing techniques are used to identify the most effective types of messages with which one can grab attention, like an account about to expire or an immediate update due to the emergence of a vulnerability.

Thus, true phishing strategies are often built around leading companies, major events, or "News of the Day" topics, all of which can be both true and f ctional. For emails to seem credible, they are packaged and presented as coming from a well-known source, including logos and identi f cation information

copied directly from that company' s website. The links contained in the message body are designed to create the impression that they're coming from the company . In reality they lead to "a node" controlled by the offender. Similarly, the use of sub very similar domains and URLs is a fairly common trick, just like masking URLs using different logical characters. Some phishing attacks use sophisticated JavaScript code to place a picture of a legitimate URL on top of a browser's address bar.

Another form of fraud is the use of botnet networks to generate prof t for attackers. Hackers use infected computers that they directly control in order to access advertising services, to which they are actually aff liated, and thus generate pro f t from illegitimate clicks.

The aim of this article is to bring some of the economic implications of cybercrime-based phishing and e-commerce to the attention of the specialists and the general public. To control the risk of compromising their image, companies may not report the exact values of their damages. In Romania, the f nancial segment is not declared a critical infrastructure and state agencies can hardly conduct audits in this f eld. Furthermore, the article substantiates the theoretical approaches via a few cases that could become the subject of re f ection, while also outlining several proposals for incident response.

2. CONCEPTUAL FRAMEWORK

Phishing is a form of cheating in an online environment by using techniques for handling the identity of people/or ganizations to obtain material or con f dential [21] information. By extending the def nition above, phishing can be considered a method for obtaining card data by creating fake websites that mimic legitimate banking websites or government institutions. The information thus obtained can be transferred back into the banking circuit by aff xing other cards that can be used to either make transactions over the internet or that can be transferred/sold to third parties [21].

Even if it seems hard to believe, according to a specialized study [16], two thirds of domestic attacks are based on sending infected emails, apparently legitimate and as coming from institutions that ask users to renew passwords, download attachments, or change other features, as in **Figure 1.** They consequently exploit misinformation and lack of attention, achieving the desired effect. There are also cases where the malware is installed during the second phase of the attack. The recipient answers so-called business proposals from an unknown sender , providing access to the resources of its computer system.

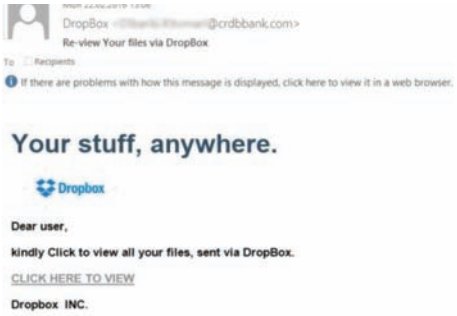


Fig. no. 1. Email example of redirecting victims to phishing websites [8]

Most intrusion procedures are initiated by criminals motivated by greed or by the desire to demonstrate their skills. However, it has become quite diff cult lately to make a clear distinction between criminal organized groups and state-sponsored terrorist attacks. In the latter case, phishing actions are in conjunction with money laundering and attacks on critical infrastructure. A criminal group's activity may take place in two ways: redirect a victim to a phishing site - controlled by them - or take control of a legitimate site without its owners' knowledge and collect information from trustworthy buyers. After prof ling the latter based on the criminals' own goals, both companies and individuals can become victims.

All this is possible due to the diversity of threats, and existing differences in institutional culture. For example, in Romania in 2014 there were over 710,000 domains registered and over ten million unique IPs allocated to or ganizations. Out of all these, more than two million reported a cyber security alert [2].

When it is dif f cult to attack a company directly, vulnerabilities, most of which are the result of human nature, become the tar get. Even though, as www .cert-ro.eu reveals for 2014, about 54% systems are not properly conf gured and are thus turned into vulnerabilities - f lters can be installed to block daily "robot" assails. Nonetheless, as Kevin Mitnick [5] says, they can only partly prevent negligence or "in-house" criminality. On the other hand, a vulnerability may cause immediate or future damages within the targeted or adjacent systems, depending on the intended victim. Personnel training and public awareness, in conjunction with a signi f cant increase in IT budget used to rapidly detect and respond to incidents, may represent a future solution. According to a Gartner prediction, until 2020 there will be a raise of up to 75% in the IT budgets and that will be reserved for investments in detection and rapid reaction systems.

All of the above considered, the article aims at narrowing down the scope of phishing to the field of electronic commerce, also known as e-commerce.

Consequently, the operational def nition provided for this purpose runs as follows: e-commerce is the procedure of buying and selling products and services via the Internet. Asimple, fast and convenient payment for goods and services from online stores is represented by the banking card. In this respect, the international security standard 3D-Secure is designed to protect transactions. Card payment acceptance is decided mainly by the owner of the online store and not by the f nancial institution issuing the card. There are sites that do not accept all types cards, even if issued by an international brand, just as there are instances when sellers decline the transaction or require additional information if they have doubts about the authenticity of the payer. Similarly, purchases are recommended only on secure virtual stores, from traders known for their good reputation and privacy practices. This practice has been widespread, especially after publicizing cases of fraud, one of the most common being the non-delivery of goods, selling stolen goods/counterfeit/prohibited,

fake offers "second chance of fers", unauthorized access, phishing, spoof ng, etc. Although promoter efforts have increased exponentially since the debut of online trading service, the rise of fraudulent transactions and risks has led to an increase in payment denials and disputes, leading to low pro f tability and a low utilization rate. The main cause was the lack of secure methods of authentication in conjunction with card forgery. Currently, companies regularly invest in developing new and ef fective mechanisms for detecting and combating fraud, and the stability of processing platforms is just as important as the security of online trading. Each merchant-supported system is validated under Visa and MasterCard regulations, transactions are processed in 3D secure environment, and each transition is associated with a security level that is decided based on a risk level assessment. When a customer wants to purchase a product and enters data onto a secure platform, the f nancial institution, following anti-fraud validation, authenticates and authorizes payment, and it is only then that the online store is noti f ed on transaction validity.

3. TYPES OF PHISHING ATTACKS

To understand the scale of the phenomenon, the f ndings of a report are truly conclusive. Thus, according to this, the damages caused by retailer fraud were estimated [1 1] at 32 billion dollars in 2014, while in 2015 it was estimated [12] that the same retailers lost about 1.32 % of revenues, which is almost the double of the previous year . As shown in **Figure 2**, the increase recorded for fraudulent transactions in just over two quarters in the area of e-commerce is almost by two and a half of the total transactions, from 0.8% to 2.1%.

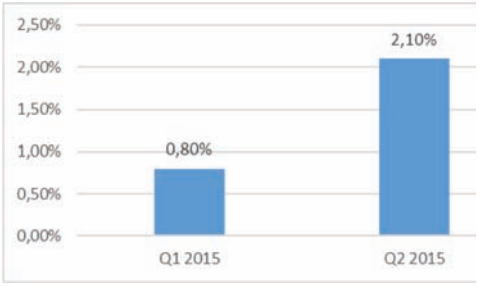


Fig. no. 2. Fraudulent attacks (% from the total number of transactions) [10]

This phenomenon is becoming increasingly worrying to online merchants, even if not all e-commerce segments are equally attacked by hackers. They only target areas of interest that are extremely popular in the online environment, aiming luxury goods (e.g. jewelry , brand products, etc.). Its dynamics is complex and even if there are times when the costs per fraudulent transaction drop, on a general level the losses are signi f cant (see **Figure 3.**).

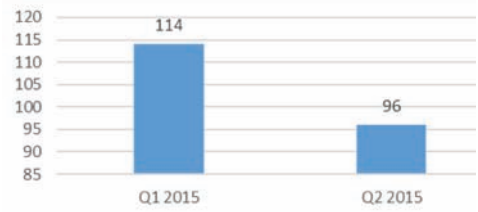


Fig. no. 3. Costs generated by attacks ($ per transaction) [10]

For Romania, **Figure 4** shows an attack distribution, highlighting the peaks and troughs relating to developments in crime.

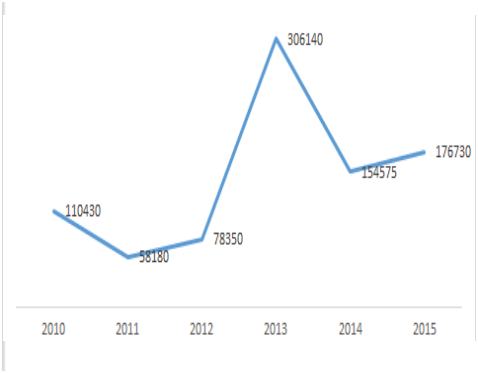


Fig. no. 4. Damages in Romania [5]

According to a survey conducted in Q1 2016 by a security company , and displayed in **Figure number 5**, large companies are among the most affected online service merchants and are particularly impacted by phishing campaigns.

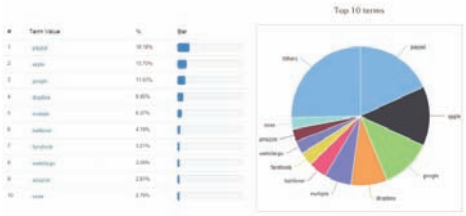


Fig. no. 5. The most affected brands in phishing "campaigns" [8]

So far, many dif ferent types of attacks that can be labeled as phishing have been identi f ed. The most relevant can be grouped into the list below.

"Classic" phishing is a term originally referring to stealing data specif c to a private account by using instant messaging services that suggested the need for checking account information, unauthorized account modif cations, new free services which required quick action, etc. Messages were (and are) broadcasted to a wide group of recipients with the hope that unwary ones will respond by accessing the link to a fake website, where their conf dential information can be collected by the offender.

Key loggers and Screen loggers are special varieties of malware that pursue and capture any entry made on the keypad, and send relevant information to the attacker via Internet connection available at that station. They can be incorporated both in users' browsers in the form of small utility programs that run automatically when the browser is started, or as system files and device drivers.

Session hijacking describes an attack in which user activities are monitored. When the latter are connected to a tar get account or transactional application the malware takes control of the session and performs unauthorized actions, the most commonly encountered one being the transfer of funds without the user's knowledge.

Data handling by installing a Trojan [18] which acts as an invisible pop-up when users try to connect to various resources of interest to criminals (e.g. f nancial institutions websites). They collect user credentials locally and submit them to the attacker via an active connection to the Internet.

Address list contamination is based on the fact that a user accessing

a URL to visit a website must first associate it with an IP address before the application is submitted via the Internet. Most users run Microsoft Windows, which assumes a mapping between the "hostname" and the IP addresses of the sites. This is the basic functionality of a DNS [19]. By "contaminating" the host's file, attackers associate false addresses to a real website, redirecting users to a website controlled by the attacker.

Phishing using malware [20] refers to misleading users to run a special software on their endpoint. Malware can be introduced via an email attachment, as a file downloaded from a website, or by exploiting security vulnerabilities in the operating system. Statistically, companies are more exposed to this type of attack, as it is very difficult to keep all applications up to date with their latest versions.

As shown in **Figure 6,** according to Q1 2016 statistics from a security company, some of the most used phishing campaigns exploit the file sharing industry (19.70%), retail (19.29%), and online payments (18.79%) and banking industry (18.00%).

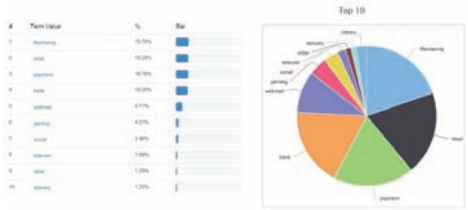


Fig. no. 6. The top 10 most targeted industry sectors for internet phishing [8]

Not even organizations whose security systems are different from those of the financial-banking institutions are protected against computer assaults. The CFO of a company received a mail sent from an address that was already under the control of a hacker. The result was defrauding 5000 Bitcoin, equivalent of 1.85 million dollars and triggering a conflict with the insurer [6].

Attacks that involve reconfiguring the target system are aimed at changing the settings on a user's PC. Favorite URLs stored locally could be modified to direct users to fake websites or false addresses, such as electronic banking applications. For example, instead of "banktest.com" it can lead to "banctest.com".

Injecting content into real sites targets public websites that manage confidential information of interest to attackers. It exploits vulnerabilities in the programming code of the website in question and replaces some of the content segments designed to mislead the user, in order to disclose certain confidential information. For example, attackers can insert malicious code or overlay additional content on the page to capture user credentials.

Man-in-the-middle is the most difficult to detect of all forms of phishing. The attackers manage to position themselves between the user and the legitimate website. Initially, they record network information and even transactions, but without the intention of affecting users. Because of that, man-in-the-middle attacks are very difficult to detect.

Attacks by creating attractive sites involve creating websites that search engines index legitimately. Digital

certif cates usually offer a measure of trust on the Internet, but they often end up being used to sign malicious web applications. Such websites appear to be signed by a root certi f cate authority and are seen as "trusted" by browsers. Hence, more malware variants have begun to use false or stolen digital certi f cates [1] from different certif cation authorities. Users access these sites by looking for information needed in certain context (e.g. travel of fers). Filling out the required f elds (e.g. email, password, data cards, etc.) actually ends up delivering the information to the attackers. A far more dangerous example of such an attack is when fake banking websites display lower than regular credit costs and interest rates. Victims "interested" in the offering are encouraged to transfer their accounts to these "banks", the end result being fairly easy to predict.

4. IDENTIFYING A PHISHING ATTACK

There have been many statistics that reference the matter . People are often curious to know what percentage of Internet users are the target of attacks, especially how many fall prey to these, but one of the most credible sources in this area [13] detailed a study showing that such information is counterproductive. However, another company [9] says that 97% of people around the world were unable to correctly identify phishing emails. The sources for these statistics were the results of an online questionnaire testing over 19,000 people from 144 countries.

Since only 3% of respondents correctly identif ed all 10 phishing emails presented to them, by way of contrast it can be concluded that 97% of people cannot identify phishing attacks. The issue is quite questionable as most people detect a potential attack from the analysis of the context and not the technical elements. Should these statistics represent a warning to companies? Absolutely yes! But are people really so gullible and incompetent in identifying phishing emails? We believe there is suf f cient evidence to doubt such a statistic. Even if many emails appear to come from a source trusted or familiar to the user, these attacks often betray themselves by using a dif ferent language than the real sender . An email from the personnel administration department, which began with "Dear Mr . X", is immediately suspect because HR never uses this tone to address employees. Cultural elements are equally important in identifying phishing attempts. For example, if the recipient receives an email with data relevant to the f nancing department but s/he works in IT , or information about the weather in a country when s/he lives in another one, or useful information for parenthood when s/he has no children, identifying such attacks becomes simple. On the other hand, the ability to distinguish legitimate URLs will not necessarily prevent a phishing attack. Numerous cases of attackers who took control of legitimate websites, using them to host malware, have been investigated.

The 97% statistic was classi f ed as controversial. If a user correctly identif es 8 or 9 out of 10 emails, it is

thought to be wrong, if not biased to consider 97% of cases as a "failed" qualitative. When evaluating the effectiveness of a technical solution, we expect it to detect 100% of threats. A person who can correctly identify the majority of phishing attacks is an important resource for the general security of a company or a financial institution in particular, and awareness can help the company protect itself from future threats. Based on the experience of those studying the phenomenon, there have emerged a number of methods by which an attack can properly be identified and its effects mitigated/canceled:

a) Checking the displayed name

A favorite tactic among phishing attacks is to fake the displayed name of the one sending the e-mail. Many fake e-mail threats display the name incorrectly. The only effective method is to check the "real" address from which the mail comes, and if it is unknown, the message should not be opened.

b) Reading the message without opening it

It is recommended to hover the mouse over any embedded links in the message. If the address of the link looks odd or suspicious, it is not recommended to "click" on it. To test the link, a new window can be opened and thus the address can be checked. Most often, the domain is unknown, and its authenticity cannot be verified.

c) Checking for spelling errors

Large companies care about the content of the messages they send to clients. They cannot afford major grammar or spelling mistakes. Reading e-mails carefully and checking that everything looks proper in terms of grammar or semantics, may relieve the user of much misery.

d) Analyzing how the e-mail is addressed

Is the message addressed generically, such as "Dear Customer"? Companies often prefer directly addressing the customer by including a personalized name and surname.

e) Privacy of personal information

Most companies will not ask to email confidential data related to credentials or credit card/debit card information. Any such request deserves maximum attention from the recipient.

f) Usage of the words "urgent" or "danger" in the subject line

Creating a sense of fear is a fairly common tactic for phishing. E-mails having subject lines claiming that the "account has been suspended" or that there was "an unauthorized login attempt" should be treated with caution.

g) Examining the signature of the one who sent the email

The lack of detail about how to contact the one who sent the e-mail might suggest a phishing attempt. Companies always provide real contact details.

h) Analyzing attachments

Attachments are commonly used for disseminating threats. These can damage computer files and even steal passwords or other confidential data. It is not recommended opening any e-mail attachment if it has not been correctly identified.

i) Verifying the header information of an e-mail

Attackers falsify not only display names, but also the email addresses placed in the message header .

According to statistics almost 30% out of 760,000 emails contain changes to the email address in the message header [3] [14].

j) "Don't believe everything you see!"

In most cases, attackers are highly trained in what they do. Just because an email has convincing logos of a well-known company, it is written in a valid way , and comes from an apparently valid e-mail address, which does not mean it is legitimate.

5. MEASURES FOR COUNTERACTING PHISHING ATTACKS

Security management aims to prevent crisis situations, minimize losses, and ensure the safety and stability of a company' s activity. It also consists of a complex set of legal, organizational, economic, physical and information technologies capable of preventing the action of destructive factors threatening activity, and thus of weakening or annihilating their consequences by:

- securing access routes by implementing f rewall solutions, using strong passwords and certif cate authentication, and periodically renewing them; limiting access only to authorized locations;
- VPN (Virtual Private Network) solutions for securing information transfer between multiple locations or remote connections within the IT infrastructure;
- Applying access rights to sensitive company information;
- Establishing employees' access levels to company documents;
- Encrypting conf dential data;
- Using Anti-Virus and Anti-Spam security solutions for data security;
- Allocation of responsibilities;
- Ensuring continuity of provided support;
- Increasing the capacity for incident response;
- Periodic security audit and review;
- Staff training in ICT and sub-domain security;
- Investigating staff activities;
- Installing a licensing and re-licensing system;
- Implementing a system of risk assessment.

Depending on each specific phishing attack, as well as on the resource it employees to reach its goal (i.e. the user or centralized infrastructure that processes confidential information), there are several safeguards that can be adopted, each with advantages and disadvantages. The list below is not exhaustive and can be updated at any time.

a) Automatically generating passwords for each domain

Specif c mechanisms have been developed lately, by which any typed credentials are altered with the domain name, through a transparent method. The basic idea is to obtain a password hash with a secret key, along with the domain name of the website. That is very important because it tells the user that the entered password is for accessing that domain. Even if the user employs the same password for every account, it will be changed due to the mechanism in question, making it very dif f cult for the attacker to obtain the password for a particular area. It is a user-friendly method and

works well in theory, but its practical application is quite dif f cult because companies use multiple domains and sub domains;

b) Maintaining a database with dynamic passwords

In this case, random passwords are generated and stored in the user's browser. For example, if the password for the www.banktest.com website are saved, the credentials will be considered valid only if that URL is displayed. If anything is changed in the URL, credentials will not be validated. There are engines that have this option available (e.g. Firefox), storing passwords by encrypting them, but this feature is not enabled by default.

c) Using virtual keyboards

This procedure was preferred in the 1990s. Instead of a traditional hardware keyboard, users use a virtual keyboard that appears on the screen, assuming that attackers will not be able to capture their activity. Currently, the method was abandoned because of several "effective" variants of intercepting a screen and a virtual keyboard.

d) Educating staff

Most companies carry seminars and workshops with specif c security issues, in order to increase the educational level of employees. It can be a step towards a culture of security awareness, even if some employees do not treat seriously such a step. In response to criminals having begun writing in almost perfect English, a method of education should consist of teaching instructions in English. Knowledge testing frequency is is a key factor in raising employees' education and security levels.

e) Building website extension

Several companies (e.g. Internet Explorer, Mozilla, Chrome, and Opera) have built toolbars for browsers to determine if a URL is fake or not. When a visited website is reported as "phishing", the user is warned about this risk on a red background. If the site is only under suspicion, yellow is the warning color. Currently some sites use so-called "extended validation" which implies a new type of certif cate sold only after the information is checked very carefully. If a toolbar in the browser f nds this type of website, the color is green.

f) 2FA-two factor authentication

This method requires a two fold authentication: identifying the name with a password, and using information that only the user knows. This can be generated by a physical token as unique codes that are valid only for a short period of time and non-reusable. In Europe, most banks use this technology to authenticate customers for online services. To connect to an online account, a username and a code generated by the device, which in its turn is protected by a PIN, are required. Authorizing the payment is also handled by introducing a code that is based on transaction details. Lately , token hardware has been replaced by software versions available on mobile operating systems. (e.g. Andoid, iOS, Blackberry sau Microsoft Windows) Although it is a very secure authentication and authorization method, users may f nd tedious and time-consuming.

However, there are banks that invest in security to increase their customer's trust in online

transactions. For example, a pilot [7] project intends to replace the card' s allocated CVV area required for online payments, with a small screen that provides a security code that can automatically change with some frequency - dynamic CVV.

g) Exchange of encryption keys to prevent dictionary-based attacks

Many researchers have proposed as a solution to the avalanche of attacks a new authentication protocol for exchanging keys, involving combining common public keys. This process occurs in such a way that, if the attacker is the middle man s/he cannot guess the information being exchanged. However , these protocols are dif f cult to implement and are considered time consuming.

6. CONCLUSIONS

Attackers are becoming more intelligent and versatile, using information from social media. They know who to tar get, what the weak links are, which elements are missing, and how to ef fectively set a trap. They have demonstrated that there is always an alternative. In a Salesforce case study from November 2007 [15], the attacked received the password from a staf f member. Subsequently, customers began to receive bills and false bills. Consequently , if an attack on a tar get may fail, it can be redirected towards the latter 's stakeholders, in the example above - the company's suppliers.

How does the future look like when such attacks are taken into consideration? It is diff cult and very dangerous to make such predictions without a solid background and understanding of how such threats behave and without understanding the attackers' psychology. It is clear that attackers will generate never ending ways to get the information they need. Unfortunately, countermeasures generating industry will always be forced to take defensive measures and hence adopt a reactive stand. The best approach is to communicate clearly the premises of such an attack and the risks associated without the use of technical terms, so that everyone can understand. But what is the economic and social impact? What are the "real" losses registered by institutions, what is the number of aggregated attacks against users? What are the measures that must be implemented to limit them? Could the involvement of relevant bodies that could declare the f nancial and banking sector a critical infrastructure bring added value to the f ght against crime and what would be the effects of such a decision? What other solutions are intended to be adopted? How to harmonize domestic proposals with European law? These are questions that require a very thorough analysis since they can seriously affect several of the current practices. Diver gent points of view may converge or may provide alternative solutions and that is the way ahead in future research and studies on the f eld.

NOTES AND REFERENCES

I. Books, articles

[1] Ghid Amenințări generice la adresa securității cibernetice (Romanian for *Guide on Generic Threats to Cyber Security)*, www.cert-ro.eu/ecsm.php;

[2] Raport cu privire la alertele de securitate cibernetică procesate de CER T-RO în anul 2014 (Romanian for *Report on*

Cyber Security Allerts Processed by CERT-RO in 2014),www.cert-ro.eu;

[3] The Travel Guide to Email Fraud, returnpath.com;

[4] Adaptation after Bogdan Adrian Turliu's presentation,Cards Investigations Team, Investigations Department, 2015;

[5] Analysis made by Mircea Constantin Scheau and Bogdan Adrian Turliu for the period Q1 2010 – Q3 2015;

II. Internet Resources

[6] http://www.f nextra.com/news/fullstory.aspx?newsitemid=27865&topic=security, last retrieved January 2016;

[7] http://www.f nextra.com/news/fullstory.aspx?newsitemid=27917 last retrieved January 2016;

[8] http://www.hotforsecurity.com/blog/phishing-surges-f le-sharing-takes-lead-as-most-targeted-industry-of-q1-13472.html, last retrieved March 2016;

[9] http://newsroom.mcafee.com/press-release/97-people-globally-unable-correctly-identify-phishing-emails - Intel Security, last retrieved February 2016;

[10] www.pymnts.com, last retrieved March 2016;

[11] Pymnts, 2014 Fraud Spike Cost US Retailers $32 Billion, 2015, http://www . pymnts.com/news/2015/2014-fraud-spike-cost-u-s-retailers-32-billion/, last retrieved March 2016;

[12] Pymnts, "Global Fraud Attack Index",2016, http://www.pymnts.com/fraud-prevention/2016/benchmarking-hackers-and-their-attack-methods/, last retrieved March 2016;

[13] http://phishme.com/the-danger-of-sensationalizing-phishing-statistics/, last retrieved February 2016;

[14] https://returnpath.com/webinars/how-cybercriminals-cheat-email-authentication/, last retrieved February 2016;

[15] www.salesforce.com, last retrieved February 2016;

[16]Verizon,,,2015 Data Breach Investigations Report", 2015, last retrieved 2016;

http://www.verizonenterprise.com/resources/reports/rp_data-breach-investigation-report-2015_en_xg.pdf, last retrieved January 2016;

[17] https://en.wikipedia.org/wiki/Kevin_Mitnick, last retrieved January 2016;

[18] https://en.wikipedia.org/wiki/Trojan_horse_(computing), last retrieved February 2016;

[19] https://en.wikipedia.org/wiki/Name_server, last retrieved February 2016;

[20] https://en.wikipedia.org/wiki/Internet_safety#Malware, last retrieved February 2016;

[21] www.cert.ro, last retrieved January 2016.

A RELATIONAL APPROACH TO THE ACQUISITION DECISION-MAKING PROCESS IN THE MILITARY ORGANIZATION

Gheorghe MINCULETE*
Luiza KRAFT**

* Colonel, PhD in Military Sciences,
Professor, Logistics, Finance and Accounting Department,
"Carol I" National Defence University, Bucharest, Romania

** PhD, Associate Professor, Naval Forces Department,
"Carol I" National Defence University, Bucharest, Romania

The market relations of military organizations focus on the acquisition of material goods and/or services. Nonetheless, the importance of the decisions related to the supply process is sometimes minimized. This attitude is so harmful for the efficacy and efficiency of the activities conducted by the military structure that at times it can have a negative impact on the management staff too. Problems may occur because the acquisition process must unfold performance-oriented; its main objective is the purchasing of material goods and/or services meant to ensure the smooth operation of the activities of the military organization. In case this cannot be achieved, it is highly probable that the mission of the organization itself is compromised. The present article explores the constitutive elements of the acquisition decision-making situation, certainty, uncertainty and risk connected to the purchasing mechanism, as well as the stages of the acquisition decision-making process.

Key words: *situational decision for acquisition; decisions for acquisition under uncertainty circumstances; acquisition decisions under risk circumstances; the acquisition decision-making process; preparation of the logistical acquisition decision; adoption of the logistical acquisition decision; application of the logistical acquisition decision.*

1. INTRODUCTORY ELEMENTS

The challenge of trade relationships brought about by market relations f uctuations necessarily causes a dynamics of the purchasing military or ganizations both in the micro- and macro-environment elements speci f c for the supplying f rms. This interference of the military bene f ciaries with micro-environmental factors (i.e., goods suppliers, service providers, customers, competitors, public organizations), as well as with macro-environmental ones (i.e., economic, technological, political, institutional,

cultural, natural) requires that logistics off cers have real skills in order to carry out their duties and responsibilities regarding supply planning, acquisition management, marketing of purchases, stock management, distribution management, etc.

The development of the strategy related to the supply management-marketing activity requires the controlled orientation of the information extracted from the military organization and the market unto acquisition decisions to be made inside the proper decision-making processes. This is due to the fact that the decision is associated to a relatively short time or a specif c moment (seconds, minutes), whereas the process presupposes a relatively long time (days, weeks) with reference to the decision itself [1]. Therefore, in the case of the acquisition of goods by military units, decision is a component, an operation inside a process, which relates it to time. In this way the strategy is made – which includes a set of processes and decisions, due to its reference to a longer period dedicated to supply (trimester, semester, year, sometimes even more).

The decision-making action set on by the development of each acquisition procedure makes it necessary to use IT decision-making tools in order to increase the eff ciency and ef f cacy of decisions [2], and thereby to allow acquisition logistical decision-makers to further proceed to the selection of the most convenient product and/or service suppliers. Under these circumstances, among the acquisition decision-making elements all the legal guaranteeing details (stipulated in contracts, conventions, orders, agreements) must be included to avoid uncertainty and risk situations which may occur during acquisition (post contract) [3].

The investigations made so far have shown that the most important constitutive elements of the decision-making situation in the sphere of military acquisitions are:

- The decision-making factor (organism) or the logistical decision-maker; the logistical decision-making environment.
- The acquisition logistical decision-making factor or the logistical decision-maker is a logistical manager (the chief of logistics; a subordinated chief of department or of f ce) or a legally established board (such as the board appointed to conduct an acquisition procedure) which, in virtue of its derived objectives, tasks, competencies and responsibilities, makes the decision in the respective situation.
- The decision-making environment consists in the sum of endogenous and exogenous elements of the respective military organization which make up the logistical decision-making situation, characterized by the manifestation of signi f cant direct and indirect in f uences on both the contents and results of the logistical management decision

related to the organizational acquisition.

The prevailing tendency at the decision-makers' level in the area of military logistics is to increase their decision-making capacity, as a consequence of their increased professional knowledge in the related management domain, in order to make them able to successfully guide complex logistical acquisition activities; this involves significant human, material, financial and information resources, implying the preparation of the economy and territory for defense [4].

The endogenous elements related to a certain logistical structure mainly refer to: a higher level of general and specialized military training, the IT support of logistical activities, a better knowledge of the professional potential of subordinates and continuous collaboration with them, guidance of the actions unto meeting the objectives, efficient use of resources, etc.

Among the aspects falling under the exogenous elements the following are noteworthy: the shorter life-cycle of the knowledge regarding the specific acquisitions in the military logistics domain, of the military equipment, products and materials and, additionally, the faster pace of moral wear and tear, the higher amount of scientific, technical and economic knowledge and its fast obsolescence, inflation, monetary instability, etc.

Within the logistical acquisition decision-making process, the primary factors of the logistical acquisition decision become interdependent, which is reflected in the specific features of the logistical decision-making situations that they create [5].As in any economic environment in general, in the military logistics area three situations may occur in peacetime; the latter influence the logistical acquisition actions' timeliness and efficiency and are as follows: certainty, uncertainty and risk.

2. CERTAINTY, UNCERTAINTY AND RISK IN THE ACQUISITION PROCESS

In order to understand the complex decision-making process which must be conducted to perform acquisitions timely and efficiently we will explain the concepts of certainty, uncertainty and risk as decision support tools for the acquisition of goods and/or services. Therefore, the decisions made under certainty circumstances presuppose situations in which the effect of the decision (the supplier chosen for the product, price, way of payment, etc.) can be found in advance. In this case, it is certain that the decision-making action to identify and select the most convenient supplier will coincide with a certain model based on anticipated information [6]. Thereby, the beneficiary will certainly purchase the product with the lowest price and best quality, according to the data comprised in the task book of the auction or the selection of bids.

The acquisition decisions for products and materials under uncertainty presuppose situations

in which the possible outcomes are unknown. From the viewpoint of the purchasing military or ganization, such decisions are oriented to signing contracts of sale to provide the products and materials without respecting all the legal provisions in force regarding the information collection, analysis, processing, interpretation and assessment as to the bidders' capacity to meet the specif c requirement [6]. Additionally, from the supplying economic agents' perspective, uncertainty appears when the results of the actions performed to sign the acquisition contacts are unknown. The causes of instability are: weather uncertainty, which as a rule has a short-term inf uence, mainly on the crops (early and summer vegetables, winter products, etc.); economic uncertainty (the unpredictable change of the delivery price for products and materials, bankruptcy , illegal and disloyal trade actions, etc.); technical uncertainty (the inf uence of the technical level, of some devices and technologies on market, upon the agricultural or industrial output, etc.); political uncertainty (change in the national policy at national or world scale, of the economic legislation policy , etc.); social uncertainty (changes of the social habits, varied consumption of agricultural products, i.e., fresh, dehydrated, preserved, etc.) [7].

To avoid the situations which might call for decisions under uncertainty, we consider that the legal provisions must be fully observed as far as the public acquisition of goods is concerned; on the other hand, it is equally important to study the market (the bids), to have all the information available about the real and potential bidders.

The acquisition decisions under risk are those resulting in the contracts of sale signed by the military units and lar ge units, following the legal acquisition procedures, when losses or other mishaps are likely to occur in the economic activity of the selected f rm [7]. In such cases, risk dif fers from uncertainty in the sense that the likeliness of foreseeing a mishap can lead to taking precautions. The latter are the auction documents or other acts drafted upon the selection of bids or the procurement of cheap goods.

From the bidder 's perspective, risk can be caused by a series of objective and subjective factors, such as: the change of economic conditions in time; the fast technological changes; the invalidation of the previous experience; the technical and economic analysis errors; the intervention of the state; the instantaneous changes of prices, etc. These causes may trigger changes with positive or negative ef fects on the expected economic results. As a consequence, risk is about the possibility that an unfavorable event occurs, which changes the expected gains [8]. In conclusion, the acquisition decision of the military benef ciary is based on both objective and subjective reasons,

among which the former prevail. Therefore, the rationality criteria such as price and quality – with all their parameters – are carefully considered. The preparation of the acquisition decision presupposes precise answers as to the existing need, the necessity of the purchase, the preferred supplier , the related costs and pro f ts. Additionally, the decision-maker (the military organization buyer), represented by the auction board or the board of analysis of the bids, through the decision they make as to the most convenient supplier, causes the onset and implementation of the acquisition decision, following the settlement of economic contracts of sale and of delivery of the amounts (mutually) agreed on, according to the delivery schedule [9].

3. STAGES OF THE ACQUISITION DECISION-MAKING PROCESS

In the f eld of procurement, the marketing decision is the core act of management of this process, put into practice by choosing – out of several possible variants (supplier economic agents) – the one which makes it possible the rational use of the f nancial, material and human resources in order to reach the intended goal, with high economic eff ciency. Such a choice requires from the decision-making bodies a specif c marketing perspective, knowledge, experience, expertise and availability in the respective domain, as well as detailed information on the suppliers, processed and provided on a daily basis by the information system of the logistics of military units and large units.

To do all this, the logistical acquisition decision requires from the decision-maker to consider the following elements: the clear identif cation of the logistical missions (objectives); the selection of several variants meant to reach the objectives; the choice of the best, logistically feasible variant.

With this in mind, the acquisition decision-making process conducted by the habilitated military organizations is def ned as the whole set of acts preceding and following the moment of acquisition of a product on market [7].

The selection decision of the most convenient supplier is the result of a chain of activities which can be considered stages, phases or elements of the decision-making process, the implementation of the decision showing the nature of the process itself (**Figure 1**).

The preparation of the logistical acquisition decision necessarily involves:

- the identif cation and def nition of the logistical issue which is the object of purchase by the organization, keeping in mind the objectives to meet, the perceived risks, the degrees of involvement of the stakeholders, etc.;
- the necessary information collection, selection and processing (on the potential suppliers and the pref guration of variants);

• the drafting of action variants and of the operational plans (programs) related to the organization and the development of the public acquisition process.

Some examples of logistical acquisition decision might include: the organization of the public acquisition procedures for goods and services; the preparation of the logistical support for f eld exercises, etc.

The adoption of the logistical acquisition decision includes the following sub-stages:

• the analysis (assessment) and comparison of the alternative decisions (i.e., the potential suppliers and their bids) as to the advantages and disadvantages of each variant (solution);

• the choice (selection) of the most advantageous variant (the most convenient supplier and the settlement and development of the contract of sale).

Fig. no. 1. A dynamic model of logistical decision-making

To exemplify, here we may consider: the potential supplying economic agents and service providers; the shipment and maintenance variants, etc.

The implementation of the logistical acquisition decision by the organization involves a series of activities, or ganizational and motivational in nature:

- informing the people in char ge about the decision by explaining and providing reasons for it in order to create the motivational environment;
- scheduling the practical action ASAP (the initiation of the contract of sale with the economic operator);
- controlling the decision and adjusting the action when deviations from the plan agreed on occur;
- adopting adjustment decisions for the initial plan (when necessary);
- assessing the f nal results after acquisition and setting the compatibility with the identif ed issue (with reference to acquisition).

The f rst stage is the most important, considering the fact that any management-marketing expert in the f eld of logistics, in order to be as less vulnerable as possible, must analyze thoroughly the various aspects of the issue under discussion and diagnose it accurately . To rely solely on intuition at this moment is harmful, for the decision made in this way cannot solve the problem with certainty. For the decentralized supply of the various types of products, the regulations in force nominate the logistical products and materials to be ordered, contracted, supplied and discounted by the units and large units. In this sense, each military organization must draft a

supply plan and an annual program of public acquisition, correlated with the data included in "The notebook of indicators and support calculations" which will comprise all the products and services to be acquired, based on budget articles. The documents will further be submitted for approval to the commander of the respective echelon. The funds necessary to accomplish the supply plan and the annual program of public acquisition will be applied for on the chain of command to the authorizing officers.

Periodically (every 3 months) the stakeholders will analyze the stage of accomplishment of the requirements written down in the aforementioned documents at each unit (large unit) level; concrete measures will be set to carry them out entirely. Following this analysis, the required credits will be diminished or increased, which causes a correct allocation of the necessary funds, in keeping with the evolution of prices and of the specific acquisition procedures conditions.

We also think that at this stage the risk and uncertainty providing situations are added, such as: the risk of not assessing the whole amount of needed supplies, due to the omission of the asset dynamic; the risk of not applying in due time and in sufficient amount for the money needed to pay the products to be purchased; the weather uncertainty; the economic uncertainty (inflation, bankruptcy, strikes, etc.) [7].

The adoption of the logistical acquisition decision is a stage which takes into account the information amount assessment, its character, the acquisition sources and the identification of the possible variants. The information thus obtained must be accurate and complete, and its collection must focus exclusively on what is of utmost importance to reach a logical decision; this requires a high analytical and synthetic capacity, as well as risk-taking. In this sense, the military experts in the area must: draft the documents according to the legal provisions, in order to ask for all the necessary information on the suppliers, needed to further conduct the scheduled acquisition procedures; do local, regional or national market research in order to get all the information they need on the bidders.

To avoid the risk situations typical for this stage we consider the following prerequisites must be kept in mind: asking for all the needed information through the acquisition procedures documents; rejecting the bids which do not meet the stipulations contained in the acquisition data file and the task book, etc. By doing this, we ensure the rejection from competition and from the very beginning of the bidders with limited potential as well as of the intermediates. Moreover, the conditions are met to perform a normal selection of the most convenient supplier for the required product (material).

It is also at this stage that the assessment of the alternatives is made; it is a sub-stage which involves the assessment of the supplying economic agents and of their bids

alongside with the comparative study of the previously collected information and the design of a hierarchy as to the preference order, by considering the advantages and disadvantages of each variant. To do this, the checklist of assessment criteria must be objective, by granting each supplier, according to their specif city, measurable values, in keeping with the legislation in force [10].

The objective analysis of the bidders' calls for speci f c management-marketing methods, which allow for the correct assessment of their performance features submitted to the comparative economic analysis. At this stage, the acquiring military or ganization compares the required information so that, in case of uncertainty situations specif c for the stages preceding the acquisition decision, they are able to assess the risk involved.

Generally speaking, in the case of product and material acquisition too, risk may appear as:

- risk as to the expected performance, considering the quality of the bidders participating in the auction (open tender), the contents of their bids, the product samples, the price offered, etc.;
- f nancial risk, whether or not the bidders have the required f nancial capacity within the minimally accepted limits as to the social capital, turnover, creditworthiness, credits and debts to pay, the immediate intention to increase the selling price of the contracted product or the prospect of signi f cant maintenance and repair costs for the purchased goods (as it were, for instance, f xed assets and inventory objects with variable period of use);
- risk as to the managerial capacity and relations mainly caused by the operational-organizational structure of the economic agents under analysis, management experience, f nancial stability;
- risk as to the time wasted on the meetings of the board of bid and acquired product/service assessment – due to the non-correlation of the necessary activities and documents for the acquisition procedures, to the diff cult shipments following the acquisition decision, damage or decay of the product beyond the accepted food perishing norms, product malfunctions (in case of long-term use goods, etc.);
- image (psycho-social) risk which ref ects the disappointment of the logistical bodies of the military units and lar ge units as to themselves, their mates, bosses, the higher echelon, as a consequence of non-observance of the legal provisions regarding acquisitions, triggering signif cant material liability and disciplinary measures [11].

It is noteworthy that the perceived risk is not identical with the real one, existing at a certain moment. The difference between them is related

to the specif city of the products and suppliers, as well as to the capacity of the specialized boards to assess correctly the suppliers and the bids, against the perceived versus real risk criteria.

Selecting the most convenient supplier and signing the sales contract are the most signi f cant sub-stage as regards responsibility. Completion of the comparative analysis of suppliers and their bids leads to the drafting and signing by the acquisition procedure board of the decision regarding the bid assessment.

Within the process of comparing the different bidders participating in the public acquisition procedures in order to choose the best solution, in our viewpoint some aspects will occur which reveal the complexity of this process:

- the goods or services as part of the acquisition process must comply to the competencies dictated by the regulations in force;
- the public acquisition procedure type will re f ect the value threshold to reach and not to exceed, as well as the quantitative amount of the product/service to be purchased;
- irrespective of the acquisition procedure, the quality-price ratio is a major objective of the benef ciary involved as an organizer of the purchasing decision-making process of the respective product/service;
- the documentation for each acquisition procedure under preparation must be correctly made by the designated staf f, so that it follows all the requirements and conditions imposed by the legislation in force;
- the staff involved in the public acquisition mechanism must have the experience, knowledge and skills that will allow them to choose the best bidder and to get an adequate mar ginal use for the subsequent buying and selling process.

Next, after the result of the acquisition procedure is made public, the military or ganization will provide the contract form to the winning bidder , which the latter dates and returns within the legal term (i.e., the number of days decided on since noti f cation). To avoid any risk during the contract development, the winning bidder – upon endorsement of the contract – will send the military benef ciary the performance guarantee letter which is a compensation for the possible losses, following non-ful f lment by the latter of the contractual obligations [7].

The last stage of the decision-making process is the implementation of the logistical or ganizational acquisition decision, which objectf es the need of the military or ganization and essentially expresses the process of assessing the dif ference between the military purchasers' expectations and the perceived preferences on the economic operator; the result is seen in dif ferent satisfaction or dissatisfaction degrees of the logistical experts involved. If translated into information, the degrees feed a positive feed-back circuit when

satisfaction of the purchasing unit or large unit is repeated after utilization, or a negative one, when there is dissatisfaction as to the results of the choice [7].

According to the above and considering the efficiency of the decision-making process, we can talk about the psychology of decisions, insofar as the process of making them depends not only on the amount of information and their accuracy, but also on the behavior of the people participating in it, and on the relationships between de decision-makers and the performers asked to implement the acquisition decisions [12].

Proportionate to the degree of participation in choosing the best variant (decision making) and the amount and accuracy of the information needed to support decisions, there are several types of decision-makers (**Figure 2**).

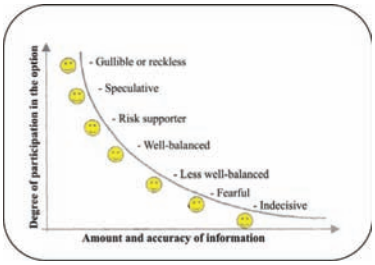


Fig. no. 2. Types of decision-makers

The challenge of the performant conduct of the proper decision-making processes for public acquisitions requires higher management skills, which can be acquired by the on-going training and development system for the military logistics personnel involved in such activities. Therefore, the psychological value and the efficiency of the decision-making authority in the public acquisitions domain is given by the clarity of the documents revealing the legality, transparency and practical character of the acquisition decision-making process, expressed by the effective and performant development of the sales mechanism [13].

All things considered, the acquisition conduct of the military organizations depends upon the skills, knowledge and experience of the experts involved; this also calls for significant IT literacy, considering the need to properly use the electronic system specific for public acquisitions [14].

Currently, the complexity of military actions at peacetime both on the national territory and on the theaters of operations implies the proper involvement of the logistical bodies; the latter should observe the right regulations for each situation. When necessary, they should suggest complex logistic support solutions engaging the economic operators functioning on the national territory or abroad [15].

4. CONCLUSIONS

A logistical decision-making process in the field of product/service acquisitions requires from the logistical factors a specific

Journal of Defense Resources Management Vol. 7, Issue 1 (12) 2016

management-marketing perspective, knowledge of the domain, experience, skills and availability to take certain risks as to the development of the logistical actions, as well as (detailed and updated) information provided timely by the speci f c information system.

Moreover, the quality of the logistical decision must prove, on the one hand, ef f cacy – i.e., the result of the latter's implementations (the effect is equal to the ef fort), and, on the other , eff ciency (e), highlighted by the ratio between the practical logistical ef fort (Efc) and the logistical ef fort made (Efo), following decision support, making and implementation, which must be greater than 1:

$$e = \frac{Efc}{Efo} \rangle 1$$

Among the main aspects contributing to the justi f cation of decision in this domain we may include: the wise intertwining in the analysis of both objective and subjective elements; the use of experts' thinking and experience; the way of valorizing information and the continuous promotion of a highly receptive sense of what the economic sciences of fer: management and marketing.

The logistical management in the military or ganizations in peacetime asks for very well-prepared and motivated logisticians, who will adopt appropriate leadership styles in the acquisition process and develop ef f cient decision-making capabilities, well-supported professional relations, obvious communication skills, high resistance to stress in order to solve the many job-related tasks, often overtime, etc.

REFERENCES

[1] Bogdan Bacanu (1997) *Management strategic (Strategic Management*), Teora, Bucureşti, p. 148.

[2] Susnea, Elena, "Decision Support Systems – Current State and Development Trends", Bulletin of "Carol I" National Defense University Publishing House, 01/2013, p. 124.

[3] Kotler, Philip Jain, Dipak, Maesincee Suvit (2009) Marketingul în era digital ă. O nouă viziune despre prof t, creştere şi înnoire, Meteor Business, Bucuresti, p.45.

[4] Enache, I. (2015) Pregătirea economiei şi teritoriului pentru ap ărare, "Carol I" National Defense University Publishing House, Bucureşti, p.15.

[5] Gattorna, John, L. (1999) The Gower Handbook of Logistics and Distribution Management, 4th edition, p.130.

[6] Nicolescu, Ovidiu, Ion, Verboncu (2008), Fundamentele managementului organizației, Economică, Bucureşti, p.69.

[7] Minculete, Gheorghe (2007), Marketing, "Carol I" National Defense University Publishing House, Bucureşti, p.148.

[8] Minculete, Gheorghe (2015), Abordări moderne ale managementului logistic, 2nd edition, "Carol I" National Defense University, Bucuresti, p.183.

[9] Kotler, Philip, Keller , Kevin, Lane (2008), Managementul marketingului, Vth Edition, Teora, Bucuresti, p.127.

[10] Catoiu, Iacob, Teodorescu Nicolae (2004), Comportamentul consumatorului, Edi ția a II-a revăzută şi adăugită, Uranus, Bucuresti, p.49.

[11] Rodica Boier (1994), Comportamentul consumatorului, Graphix, Iasi, p.102

[12] Baily Peter , Farmer David Jessop, David Jones David (2004), Principiile şi managementul achiziţiilor, Ediția a VIII-a, Editura ARC, Bucureşti, pp.129-130; Studiul comportamentului consumatorului, Suport de curs, http://www .ucdctm.ro/wp-content/uploads/ 2012/01/SCC_2012.pdf, last retrieved February 2016.

[13] Stoean, Tania Ioana (2013), Profesionalizarea resurselor umane (Human Resource Professionalization), "Carol I" National Defense University Publishing House, Bucureşti, p. 116; 118.

[14] Alexandrescu, Constantin, Boaru, Gheorghe, Alexandrescu, Gelu, Bazele teoretice ale sistemelor informa ționale, Editura Universității Naționale, "Carol I", 2014, p. 235.

[15] Moroşan, Marilena, Planning the logistic support at operational level for NATO operations. In: Proceedings. The 10th International Conference Strategies XXI. "Technologies, Military Applications, Simulations and Resources", Bucharest, November 13-14, 2014, p. 95.

CURRENT ASPECTS OF BULGARIAN PARTICIPATION IN PEACE SUPPORT OPERATIONS

Petar MARINOV

LTC Dr., Head assistant professor in National Defence College – Sofa, Bulgaria

Today's world events mandate a need to project all available and legitimate methods to enable our war-fighters and leaders to effectively deal with a host of traditional as well as nontraditional threats and the newest challenges. The success of each Security Forces Assistance mission, during the period of post-conflict restoration, depends on their capabilities, particularly on the Homeland Security Forces, to overtake the challenges to guarantee the security and stability in their own territory.

Key words: *Peace Support Operations, Resolute support, application of force, advising, mentoring.*

1. INTRODUCTION

Today's world events require a need to project all available and legitimate methods to enable war-fighters and leaders to effectively deal with traditional as well as nontraditional threats and the newest challenges. Now, more than ever, the minimal level of tolerance for collateral damage and loss of human life, coupled with the tendency for the typical adversary to exploit the rules of engagement (ROE) to his benefit, necessitates an effective and flexible application of force.

2. LAW FOUNDATIONS

Law foundations are based on two general principles of Peace Support Operations (PSO):

a. All military operations must comply with the principles of distinction, prohibition of unnecessary suffering, and humane treatment;

b. Military necessity has already been taken into account in the formulation of these rules. Therefore, where not mentioned explicitly as an exception in the rules, military necessity cannot serve as a justification for their violation.

These principles are based on customary international law. They are derived from the fundamental tenet that the right of belligerents to choose methods or means of warfare is not unlimited. This tenet was expressed in the 1874 Brussels declaration and the 1880 Oxford Manual. It was first formally codified in the 1899 Hague Regulations, and reaffirmed in the 1907 version thereof. It subsequently appeared in additional protocol I as well as other instruments, such as the 1980 Conventional Weapons Convention. Convention is of particular relevance in light of the 2001 extension of the entire agreement to non-international armed conflicts. Thus, it represents the first treaty acknowledgement of the tenet in the context of such conflicts [1].

According to these principles the following capstone documents, which established the framework for the conduct of PSO, have been created:

- 1949 Geneva convention relative to the protection of civilian persons in time of war;
- 1980 Protocol III on prohibitions or restrictions on the use of incendiary weapons to the un convention on prohibitions or restrictions on the use of certain conventional weapons which may be deemed to be excessively injurious or to have indiscriminate effects;
- 1980 Protocol II on prohibitions or restrictions on the use of mines, booby-traps and other devices to the UN convention on prohibitions or restrictions on the use of certain conventional weapons which CCW PII may be deemed to be excessively injurious or to have indiscriminate effects;
- 1989 Convention on the rights of the child;
- 1993 Convention on the prohibition of the development, production, stockpiling and use of chemical weapons and on their destruction;
- 1995 Protocol IVon blinding laser weapons to the un convention on prohibitions or restrictions on the use of certain conventional weapons which may be deemed to be excessively injurious or to have indiscriminate effects;
- 1996 Amended Protocol II on prohibitions or restrictions on the use of mines, booby-traps and other devices to the UN convention on prohibitions or restrictions on the use of certain conventional weapons which may be deemed to be excessively injurious or to have indiscriminate effects;
- 1997 Ottawa Convention on the prohibition of the use, stockpiling, production and transfer of anti-personnel mines and on their destruction.

Documentary analysis gives us the opportunity to develop a short list of generally prohibited weapons. Using the following weapons is absolutely forbidden:

a) Poison and poisoned weapons;

b) Biological and bacteriological weapons;

c) Gas, and other chemical weapons, including riot control agents when such agents are used as a method of warfare;

d) Exploding anti-personnel bullets;

e) Weapons that mainly injure by fragments which escape detection by x-rays;

f) Laser weapons designed to cause permanent blindness.

Additional restrictions on the use of specif c weapons are established also [2]:

1) Booby traps

It is forbidden to use booby-traps in connection with objects entitled to special protection or with certain other objects likely toattract civilians. It is also prohibited to use booby traps in any city , town, village, or other area containing a concentration of civilians in which combat between ground forces is not taking place or does not appear imminent, unless they are placed on or in the close vicinity of a military objective or measures are taken to protect civilians from their effects [3].

2) Land mines

All feasible precautions must be taken to protect civilians from the effects of land mines, especially anti-personnel land mines [4].

3) Incendiary weapons

In the use of incendiary weapons, particular care must be taken to avoid, and in any event to minimize, incidental loss of civilian life, injury to civilians, and damage to civilian objects [5].

All of these limitations and specif cs for the PSO make them

separate area of military knowledge. It demands not only finding new approaches of conducting operations but also it enforces implementation of new methods of individual and unit preparation, creation of new tactics, techniques and procedures, including new equipment and non-lethal weapons (NLW). Much like a rheostat switch in which power can be dialed up or down as desired, NLW provide tools to allow a commander to employ sufficient force to accomplish an objective without requiring the destruction of the enemy or the habitat. The intent of employing NLW is not to add another step in the progression of escalation with an adversary, but to add another tool to use anywhere along that continuum [6].

This new area of responsibilities and tasks requires also a new level of relationship between government and non-government players on the global stage of research, development, production and trade of knowledge and products of military and security industry.

3. SPECIFICS OF PSO

They are NATO's Non-article Five operations, on a territory devoid of fully functioning civil institutions which can contribute to effective conflict prevention and to engage actively in crisis management, including crisis response operations [7].

The Alliance Strategic Concept goals have been focused on the interaction between forces and the civil environment (both governmental and non-governmental), in which they operate, is crucial to the success of operations.

Coordination and cooperation, in support of the mission, between the NATO Commander and civil actors, including national population and local authorities, as well as international, national and non-governmental organizations and agencies include:

- *Support to the mission forces* - any activity designed to create support for the military force from within the indigenous population.
- *Civil-military liaison* - coordination and joint planning with civilian agencies in support of the mission.
- *Support to the civil environment* - the provision of any of a variety of forms of assistance (expertise, information, security, infrastructure, capacity-building, etc.) to the local population in support of the military mission.

Comprehensive peace agreements and assistance in laying the foundations for sustainable peace require a wide variety of complex tasks, from helping to build sustainable institutions of governance to a stable security system. All of these specifics make PSO *"multi-dimensional"*. It means a necessity to include administrators, economists, police officers, legal experts, electoral observers, human rights monitors, etc. Extraneous experts' participation in PSO is a new challenge not only for commanders, planning groups and executors, but it is also a challenge for MoD sections and entire security system, because of: differences between civil and military systems and organizational culture; differences between procedures; differences between communication capabilities and abilities; differences between equipment; differences between personnel preparations; OPSEC requirements; Force protection requirements.

The accomplishment of effectiveness and efficiency on

that "multi-dimensional" level of operation could be impossible without a new level of government multi-sectorial cooperation. Furthermore, it requires a new level of government-business attitudes.

We have to try to establish net-centric principles in our organizational structure and culture, based on flexibility, real-time information sharing and exchange, high-speed transformation capability, command authority transfer from the core to any periphery element (and restoration), without any functional problems.

At the same time we should accept new models of preparation, as well as join experts from civil and business sphere.

If we accept that the PSO timeline starts from the mission beginning and ends to the real transfer of authority to the local security forces, we may separate three main phases: Active phase; Passive phase; Transition phase.

During the *active phase*, peace keeper's activities are offensive. In accordance with the necessity of establishing the control in the area of responsibility, PSO forces should take an active position and all measures to ease the tension. This phase may include [8]:

- *Establishing and managing a cease-fire* - Cease-fires normally depend on a clear geographical delineation and an agreed time scale for their implementation. However, in more volatile circumstances, and when forces are intermingled, the best that may be achieved could be a cessation of hostilities and a withdrawal to camp.
- *Interposition operations* - A PSO force can be deployed as an inter-positional force as a form of trip-wire, either when consent exists or when consent is fragile. Troops deployed in interposition operations are generally deployed to pre-empt conflict-Difficult due to size of forces needed.
- *Disarmament, demobilization and anti-mine actions* - This may include securing of disarmament and cantonment sites; and/or the collection and destruction of weapons, ammunition and other materiel surrendered by the former combatants. Includes emergency mine action assistance, as well as developing medium- and long-term mine action plans.

During the *passive phase,* the peace-keepers' activities are defensive. Applying the force has to be provoked by any of the opposite forces, law or agreement violators, etc.

- *Supervision of truces and oppression of fire* - Military forces may be deployed to supervise any commitments agreed to the parties as part of a truce, cease-fire or other peace plan. This may include operational level joint force deployments. Tasks will generally be agreed and specified in the detail of the agreement or treaty.
- *Restoration of law and order* - Operations designed to restore or to maintain the peace will generally be necessary in the circumstances of chaos associated with a conflict and when there are no coherent parties, or the parties are ill-disciplined and indistinguishable from the criminal elements of the local society.
- *Observation and monitoring (continues in transition phase)* - May be conducted by strategic and operational maritime and air assets, including satellites, but ultimately will rely heavily on the human factor, i.e. observers on the ground. Typically used when forces are limited.

- *Humanitarian relief* - Humanitarian relief is conducted to alleviate human suf fering, especially in circumstances where responsible authorities in the area are unable or possibly unwilling, to provide adequate support to the population.

During *transitional phase* the main goal is the ef fective transfer of authority and responsibility to local security system and its independent functioning. The phase may include activities below. At the same time any functions started in previous phase may continue.

- *Protection of humanitarian operations and human rights* - The foremost task for the military force may be to restore the peace and create a stable and secure environment in which aid can run freely and human rights abuses are curtailed [9].
- *Transition assistance* - It refers to all forms of military assistance for a civil authority or community which are rendered as a part of a wider diplomatic, humanitarian and economic strategy to support a return or a transition to peace and stability.

4. THE NEW OPERATION "RESOLUTE SUPPORT" IN THE MAIN PSO TIMELINE

According to the above mentioned timeline, monitoring and transition assistance are located around the end of the passive phase and during all transition phase.

One of the main activities is military assistance to homeland security forces. In accordance with the specif cs of tasks and the character of the activities, three sub-periods could be deduced, too: Observation, mentoring and liaison period - OMLT (active); Advising period (passive); High-level expert advisory (transfer of authority).

OMLT Tasks as a part of ISAF are:

a. Coach, teach, and mentor all functional areas of Corps staf f, including battle staf f procedures, Military Decision making process and Command and Control Tasks in line with unit Mission Essential Task List (METL);

b. Facilitate cooperation and liaison with partner units and RCs;

c. Assist units in planning and executing combat operation;

d. Mentor and liaise with commanders and command groups.

The conditions of an operational picture and the transition to the next phase, causes the relevant changes in Bulgarian National strategy for the participation in the ISAF , paragraph 2.4 states [10]:

"Rational national contribution to the satisfaction of new priority needs of military assistance in training, assistance and support to Afghanistan National Security Forces, in the period after 2014".

5. NATIONAL DEFENSE COLLEGE CONTRIBUTION

National Defense College contribution, as a main institution, which is responsible for education and training the senior leaders of Bulgarian armed forces is focused on the following f elds:

- *Research and analysis* - in that sphere of ef forts more than ten themes, bringing real contribution to military theory and practice, have been successfully completed and the results from them are in use. Very deep analysis and research, using the lessons learned and the experience of already accomplished missions, are in progress in the Academy's Defense Advanced Research Institute, as well; NDC achieved a

notable success in different, relevant to security and counteraction-to-terrorism projects, such as:

- "Development of tools needed to coordinate inter-sectorial power and transport CIP activities at a situation of multilateral terrorist threat. Increase of the protection capacity of key CIP objects in Bulgaria" – accomplished in 2013, managed by *European Commission-Directorate-General Home Affairs*
- Permanent work on dif ferent projects and in think tanks managed by NATO Science and Technology Organization.
- *Development of textbooks, handbooks, training aids and relevant capstone documents;*
- *Master and doctoral degree programs management;*
- *Organizing professional courses in the PSO field;*
- *Providing lectors for the preparation of national contingents;*
- *Taking part in PSO* with mentor and advisers.

The success of each Security Forces Assistance mission, during the period of post-conf ict restoration, depends on their capabilities, particularly on the Homeland Security Forces, to overtake the challenges to guarantee the security and stability in their own territory . The transfer of authority and NA TO Forces withdrawal is a serious test for the new homeland forces to meet the challenges in their own country . At the same time that will also be the most serious evaluation for the success of the different programs for local national forces post-con f ict recovery assistance.

That would not be possible without an effective cooperation between the government, the business and the NGOs through joining their ef forts and capabilities in one modern and effective Net Centric Architecture.

REFERENCES

[1] Michael N. SCHMITT , Charles H.B. GARRAWAY, Yoram DINSTEIN, *The Manual on the Law of Non-International Armed Conflict with Commentary*, 2006, p. 8, retrieved from http://www .iihl.org/wp-content/uploads/2015/12/Manual-on-the-Law-of-NIAC.pdf.

[2] Jean-Marie HENCKAER TS and Louise DOSWALD-BECK, *Study on customary international humanitarian law*, International Committee of the Red Cross (ICRC), Cambridge University Press, retrieved from https://www .icrc.org/eng/assets/f les/other/customary-international-humanitarian-law-i-icrc-eng.pdf.

[3] Jean-Marie HENCKAER TS and Louise DOSWALD-BECK, *Study on customary international humanitarian law*, idem, p. 278.

[4] Jean-Marie HENCKAER TS and Louise DOSWALD-BECK, *Study on customary international humanitarian law*, idem, p. 281.

[5] Jean-Marie HENCKAER TS and Louise DOSWALD-BECK, *Study on customary international humanitarian law*, idem, p. 287.

[6] *Tactical employment of non-lethal weapons*, FM 3-22.40, FM 90-40, Military manual.

[7] AJP-9, *NATO Civil-military co-operation (CIMIC) doctrine*, retrieved from http://www.nato.int/ims/docu/ajp-9.pdf.

[8] *Peace Support Operations: A working Draft Manual for African Military Practitioners*, DWM 1-2000, February 2000, retrieved from https://www.issafrica.org/uploads/Handbooks-1999-PeaceSupportOperations.pdf.

[9] *Peace Support Operations: A working Draft Manual for African Military Practitioners*, idem, chapter 5.

[10] Strategy for transformation of Bulgarian armed forces participation in operation of NA TO-led International Security Forces in Afghanistan.

[11] International Security Assistance Force, *RS Security Force Assistance Guide 3.1*, p. 1 1, 2014, retrieved from https://ronna.apan.org/SFAGuide/Documents/20140927_NIU_CJ7_TREX_SFA%20guide%203.1.pdf.

THE IMPORTANCE OF VOCAL PARAMETERS CORRELATION FOR INFORMATION PROCESSES MODELLING

Valentin GHISA*
Nicoleta GHISA**

*Transylvania University, Department of Electrical Engineering and Computer Science, Romania
**Radio Romania Cluj, Chief Editor, Department Of News and Broadcasting Production, Romania

To analyze communication we need to study the main parameters that describe the vocal sounds from the point of view of information content transfer efficiency. In this paper we analyze the physical quality of the "on air" information transfer, according to the audio streaming parameters and from the particular phonetic nature of the human factor. Applying this statistical analysis we aim to identify and record the correlation level of the acoustical parameters with the vocal ones and the impact which the presence of this cross-correlation can have on communication structures' improvement.

Key words: correlation analysis, vocal parameters, SPSS

1. INTRODUCTION

The data transfer between different systems, processes, social and economic entities or subsystems creates a large f eld for analysis, the so called the communication problem.

The interactive information f ow model needs new possibilities of improving communication capabilities and the rise of the quantitative and qualitative level of useful information. This fact drives to a better dynamic of the communication process.

The practical ef f ciency of a message does not consist in reaching a high information level, but in the visible effects of the message form and content through the listeners. What is very important in this respect is message semantics and the probability of understanding its content, along with the integration of these salient features with the effectiveness and form of the utterance itself.

There are three ways of operating on information content: morpho-syntactic (strongly tied with rigorous abidance by linguistic norms and rules), pragmatic (a nature of the utility of information for the receivers) and semantic (the signi f cance which is shaped and submitted by the formal language).

As an acoustic phenomenon, language is a set of phonetic continuous sequences which are

separated by intervals. Beyond the deterministic tackling of signals processing, in which the signal is studied as a local manifestation, statistical analysis considers that the voice sign is an information keeper identified and strictly classified after some parameters related to stochastic variables [1].

The deviation from the values of the parameters from a mean value are quantified for a set of information components, through simple indicators (amplitude, median, mode), but more than that, through synthetic indicators, such as dispersion (σ^2), mean square deviation (σ), the variation coefficient or the linear mean deviation ($\bar{d}$).

All these descriptive indicators show the level of the variables for each information component, and the way in which all these present deviation from the mean value. At the same time, the coefficient of variation shows the spread in a direct relationship with the average.

Its nature (which does not depend on the value of indicators) recommends such an indicator for the analysis of parametric convergence. Generally speaking, through the dependence of implied variables in a communication process, we understand just one type of dependence, total or deterministic.

On the other hand, there are some situations in which two stochastic variables x and y are connected through a probabilistic relationship, when, for example, we know that the probability of x, and y depends on the repartition law, being dependent by x.

In a strong relationship with the stochastic variables, the dependence can be determined through regression or correlation.

The correlation is a descriptive statistic method because it shows what happens in a group of results. The concept of correlation shows the concomitant variation of two variables, allowing a reciprocal prediction procedure of the evolution of those variables.

That means there may be no relationship between some stochastic variables. The coefficient of correlation (r) shows the degree/intensity of a relationship between two variables.

In the correlational highest point, all the values from the graphic of both variables are on the right part of the regression. In the case of the lowest point of correlation, the distance between these points and the right part of the regression shows the error between the associations of the variables [2].

The estimation of the cross-correlation between the different stochastic variables - the parameters of the information system, plays a very important role in the analysis of the features of the communication process in its physical form.

Through the application of some statistical analysis methods, we try to identify and quantify the level of the correlation of some acoustic and voice parameters and the impact of this cross-correlation on the optimization of the communication structures.

2. SOFT & WORK TECHNIQUES

Previous experiments in the f eld of voice recognition underlined that for obtaining a high precision in the vocal recognition of the lexical units in the Romanian language, constant and intensif ed speaking is needed.

The vocal spectrum was recorded on the hard memory of a PC and it was processed in the audio 3D QSound Pro 9.0 SSMS product by Sony. The soft allowed the auto-play of the materials on every media player program on the PC [3].

Before that, data preprocessing was made by GoldW ave v5.69 software, a highly rated, professional digital audio editor fully capable to do a wide range of operations, from the simplest recording and editing to the most sophisticated audio processing, restoration, enhancement and conversion [4].

59 persons (30 men and 29 women) were recorded reading certain texts. Every person had to read out aloud three texts of their own choice in the Romanian language on a microphone located 30 cm in front of their mouth.

The condition was for each subject of the experiment to be recorded reading each of these three texts for one minute. The parameters values targeted for analysis were averaged and stored in the f nal Data Base.

The IBM SPSS 20.0 application was employed for the analysis of possible associations between specif c broadcasting parameters, and in order to emphasize the relevance of these correlations on the information structures.

3.PARAMETER DESCRIPTIONS

All the 59 audio recordings/ speaker were processed and or ganized in a Data Base that contains the following basic variables:

Table 1. Basic variables

Abbreviation	Parameters	Var. type	[unit]
TH	*tonal height*	discrete	[mel]
VL	*voice loudness*	discrete	[dB]
SS	*speech speed* (there is the option syllables/sec. [sps])	discrete	[wpm]
VT	*voice timbre*	discrete	[Hz]
NWW	*number of wrong words* (Incomplete words, incorrect words emphasis, utterance errors, language disorders, etc.)	discrete	[wwpm] (wrong word per minute (wwpm)

The table below lists the vocal derivatives parameters.

Table 2. The vocal derivatives parameters

Abbreviation	Parameters	Var.type	[unit]
SF	*s p e e c h fracture*	discrete	[w w p m / wpm]
UF	*u t t e r a n c e flexibility*	discrete	[mel/dB]
IE	*information energy*	discrete	[undim.]

The *tonal height* of the voice TH refers to the propriety of being more profound or sharper.

This height must be related to the age and gender of the speaker . The experience shows that this subjective acoustic parameter varies straight with the frequency of sound oscillations. The height of the voice unit of measurement is the *mel*.

The *mel* scale is a feeling scale for TH tonal height measurement, obtained by experimental drawing of the curve fitting which illustrates TH variations by its frequency.

The *voice loudness* VL must be related with the intention of the communication, with the time of communication or the receivers of it, and with the place. This means that the VL varies with these pragmatic parameters [6].

The *utterance flexibility* UF refers to the relationship between the tonal height TH and voice loudness VL, in order to underline the emphasis, semantic differences, emotional feature of the speaking act;

$$UF = \frac{TH}{VL} \ [\text{mel/dB}] \qquad (1)$$

The *speech fracture* SF is a derived measurement, being considered as a rapport between NWW and SS. It is the opposite to the f uency of speaking. We will consider it as follows:

$$SF = \frac{NWW}{SS} \ [\%] \qquad (2)$$

For the stochastic discrete variable X whose values represent the states of a certain information system, and with the distribution: $p_k \geq 0$, we refer to *information energy* as delineated by Onicescu, *IE* and, in accordance with the stochastic discrete distribution of the variable X, the following formula is used [7]:

$$E^2(X) = \sum_{k=1}^{n} p_k^2 \qquad (3)$$

Information energy $E^2(X)$ appears to be an overall value attached to a stochastic distribution and of the same nature as the Shannon information entropy.

We call *information correlation* of two random variables X_1 and X_2 or a distribution $p_k \geq 0$ and $q_k \geq 0$

$$\sum_k p_k = \sum_k q_k = 1$$

in the Onicescu case the expression:

$$O^2[X_1, X_2] = \sum_{k=1}^{n} p_k q_k$$

and the *information correlation coefficient* of their the rapport:

$$R^2[X_1, X_2] = \frac{O^2[X_1, X_2]}{\sqrt{E^2(X_1)E^2(X_2)}} \qquad (4)$$

The random variables X_1 and X_2 can be two arbitrary random variables or can represent the same random feature but for two different statistical populations. If the discrete IE - i *nformation energy*, $E^2(X)=1$, we have an

absolute information concentration namely $p_k = 1$, $p_j = 0$, $j \neq k$, $1 \leq j \leq n$ and the information ener gy falls when the indeterminate .....or uniformity increases.

4. PARAMETRIZED CORRELATION METHOD

The purpose of a Parametrized Correlation Method is to determine a relationship between two sets of stochastic discrete variables. In statistics, the "correlation" concept has a very specif c meaning.

Statistical correlation means that, given two discrete variables X and Y measured for each case in a sample, variation in X corresponds (or on the contrary, does not) to variation in Y.

As a rule, when we make an analysis of linear correlation, we want to know how powerful or intensive the relationship is between these two variables.

The extreme values of X are related with extreme values of Y, and less extreme X values with analogues Y values. The correlation coeff cient (Pearson **r** for the parametric variables) measures the degree of this connection.

If one variable causally inf uences a second variable, then we would expect an intensive correlation between them. However, an intensive correlation may mean, for example, that they are both causally inf uenced by a third variable.

The way to determine linear correlation between the two variables is called the Pearson correlation coeff cient (**r**). The formula for computing the Pearson *product-moment correlation* **r** is as follows:

$$r = \frac{1}{n-1}\sum_i \frac{(x_i - \overline{X})(y_i - \overline{Y})}{s_x s_y} \quad (5)$$

The value of r ranges within [-1, 1] interval. We can say that if:

- $r > 0$ indicates a positive connection of X and Y: as one gets lar ger, the other gets larger.
- $r < 0$ indicates a negative connection: as one gets lar ger, the other gets smaller.
- $r = 0$ indicates no connection

We can also calculate the correlation between more than two variables. Given variables x, y and z, we de f ne the *multiple correlation coefficient*:

$$R_{z,xy} = \sqrt{\frac{r_{x/z}^2 + r_{y/z}^2 - 2r_{x/z}r_{y/z}r_{x/y}}{1 - r_{x/y}^2}} \quad (6)$$

where, for example, $r_{x/y}$ is de f ned as:

$$r_{y/x} = \frac{n\sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{\left[n\sum_{i=1}^{n} x_i^2 - \left(\sum_{i=1}^{n} x_i\right)^2\right] \cdot \left[n\sum_{i=1}^{n} y_i^2 - \left(\sum_{i=1}^{n} y_i\right)^2\right]}} \quad (7)$$

and the relative correlation rapport:

$$R_{y/x} = \sqrt{1 - \frac{\sum_i (y_i - Y_{x_i})^2}{\sum_i (y_i - \bar{y})^2}} \quad (8)$$

If $(r_{y/x})=(R_{y/x})$ then we can see a powerful, direct and intensive connection between the involved variables.

The IBM SPSS 20.0 software is an interactive and very useful software package which is designed for data analyses and includes multiple statistical facilities and techniques. Through these facilities

we find great distributive options, automatic models, ability to work with server versions of IBM SPSS Statistics Base, a syntax editor, Microsoft Office integration, etc. [5]. For the accurate representation of variable evolution we follow the determination of the scattering and central tendency indicators as well as simple correlation analysis with the SPSS program.

5. RESULTS AND DISCUSSION

The correlation matrix shows that TH (tonal_height) parameter presents a positive and strong relationship with VT parameter (vocal_timbre), (r=0.995). The same parameter reveals a strong and positive relationship with UF (utterance_flexibility), (r=0.815) but a positive and more than mean relationship with SS (speech_speed), (r=0.617), all those having a very good significance threshold, under p = 0.01.

In the case of VL (voice_loudness) variable, we have strong negative correlations with SF (speech_fracture) parameter and NWW (nr._wrong_words), (r=-0.853 and r=-0.903) and a relatively medium negative association with UF (utterance_flexibility), (r=-0.508).

At the same time, the derivative parametric variable UF presents low to medium positive correlation with NWW and SS variables (r=0.464 and r=0.422) and a weak connection with the other variable SF (speech_fracture), (r≈0.300) under a significant threshold of p=0.05. The same parameter has a strong positive relationship with VT parameter (r=0.816).

The derivative parameter SF is observed to have a very strong relationship with NWW (r=0.963) and the one of low to mean level and negative (r=0.432) with SS (speech_speed), both under a 0.01 significance threshold. Another significant correlation issues between VT (voice_timbre) and VR (speech_speed), (r=0.604).We further note two other multiple and significant cross-correlation clusters about the derivative variables.

The first of them is where UF is the dependent variable and the variable pairs cluster (TH-VT), (VL-NWW) and also SS are exogenous/generator variable. The second group has as a main point the dependent variable SF (speech fracture), (VL-NWW) pair and also the independent parameter SS.

Based on the obtained values, we can study the models of multiple regression for UF and SF derivative parameters. We also determined that the information energy IE correlates intensely and directly with NWW (r=0.91) and also with VL parameter which is linked pretty consistently (r=0.697). Those two endogenous variables, independent, VL and NWW determine about 85% the evolution of information energy IE.

Table 3. Descriptive statistics

VARIABLE	TH	VL	SS	VT	NWW	SF	UF
Mean	1093.29	44.92	154.83	2658.27	5.58	3.7105	25.6614
Std. Error of Mean	48.031	1.393	2.529	47.747	.393	.27882	1.44945
Median	1012.00	43.00	155.00	2581.00	5.00	3.7500	22.5900
Mode	684	32	172	2104[a]	2[a]	2.32	10.20[a]
Std. Deviation	368.935	10.699	19.426	366.753	3.018	2.14167	11.1334
Variance	136113.17	114.458	377.350	134507.89	9.110	4.587	123.954
Skewness	.186	.468	-.067	.180	.368	.452	1.073
Kurtosis	-1.181	-.886	-.739	-1.174	-.847	-.713	.833

[a]There are multiple mode

Table 4. Correlation matrix

Correlations		TH	VL	UF	SF	NWW	VT	SS
TH	Pearson	1	.035	.815**	-.225	-.074	.995**	.617**
	Sig. (2-tailed)	.000	.790	.000	.087	.577	.000	.000
VL	Pearson	.035	1	-.508**	-.853**	-.903**	.024	.199
	Sig. (2-tailed)	.790	.000	.000	.000	.000	.858	.130
UF	Pearson	.815**	-.508**	1	.299*	.464**	.816**	.422**
	Sig. (2-tailed)	.000	.000	.000	.021	.000	.000	.001
SF	Pearson	-.225	-.853**	.299*	1	.963**	-.220	-.432**
	Sig. (2-tailed)	.087	.000	.021	.000	.000	.094	.001
NWW	Pearson	-.074	-.903**	.464**	.963**	1	-.070	-.199
	Sig. (2-tailed)	.577	.000	.000	.000	.000	.597	.131
VT	Pearson	.995**	.024	-.816**	-.220	-.070	1	.604**
	Sig. (2-tailed)	.000	.858	.000	.094	.597	.000	.000
SS	Pearson	.617**	.199	.422**	-.432**	-.199	.604**	1
	Sig. (2-tailed)	.000	.130	.001	.001	.131	.000	.000

**Correlation is signif cant at the 0.01 level (2-tailed)
*Correlation is signif cant at the 0.05 level (2-tailed).

The next charts (f gs.1-8) show the most important cross-correlations between vocal parameters:

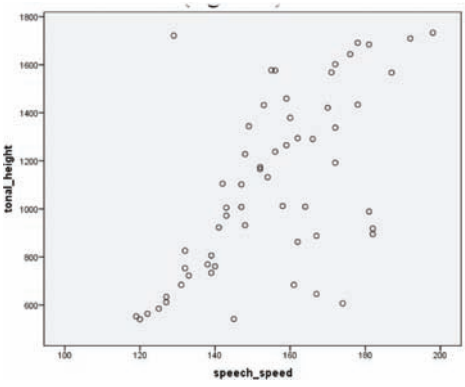
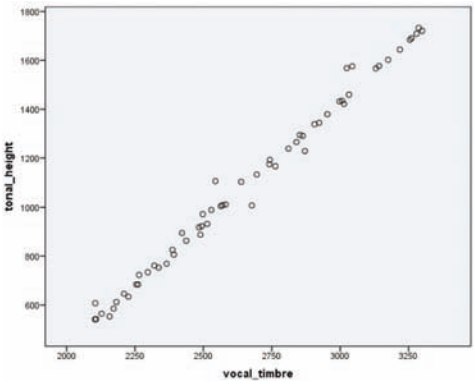


Figure no. 1



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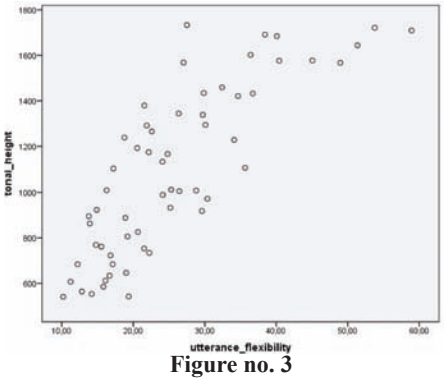

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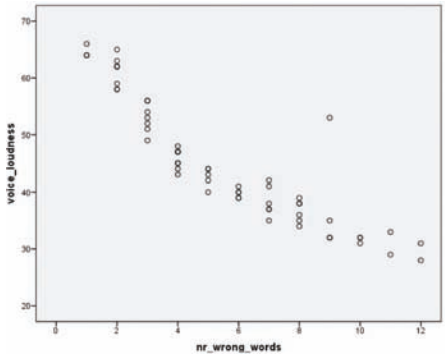

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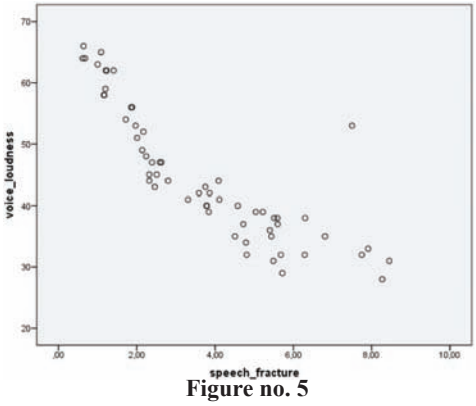

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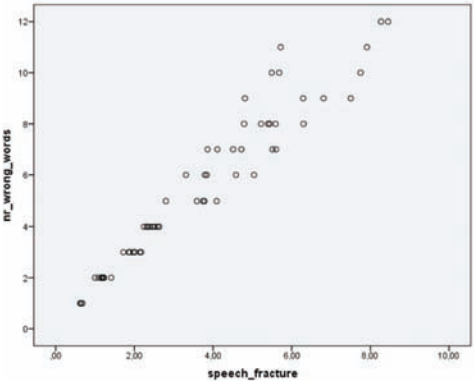

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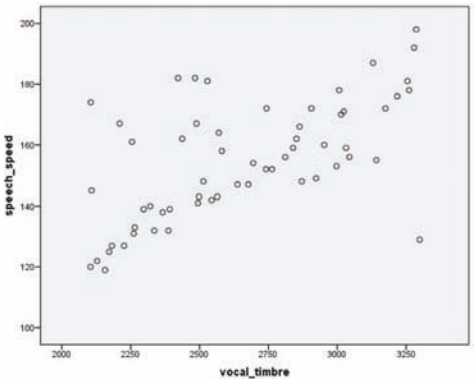

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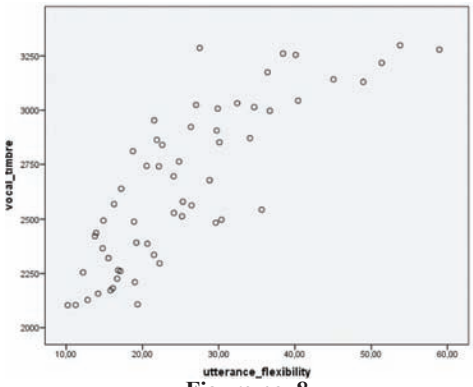

Figure no. 8

6. CONCLUSIONS

The positive strong correlation between TH (tonal_height) and VT (vocal_timbre) is normal because of the height of the voice which is often confused with the frequency of the voice tone itself, and it depends at the same time on the stylistics of every person, as a result of a rigorous control of intonation and articulation, the status of the body and particularly the vocal tract system.

Another strong relationship is developed between VL (voice_loudness) and NWW (nr._wrong_words). This correlation is a negative one and shows us that, the more the number of speaking/uttering errors, the weaker the voice intensity of the speakers. Further, the correlational pairs (VT-SS) and (SS-TH) underline direct but signif cant relationships of medium level, between 60÷62%.

Concerning the f rst pair we can say that about 60% from the maintenance of a constant level of vocal timbre is due to an adequate text utterance. All too naturally , because of the direct and very strong relationship between TH and VT it is natural that the intensity of it to be partly transferred to SS-TH pair.

So, concerning the pair SS-VT a certain speed of text utterance leads to a particular level of voice sound intensity appearance. The faster is the speed of speech and the less the metrics of uttering, the bigger are the values of VT-TH.

About the derivative parameter UF (utterance_f exibility) we observe a massive concentration of a functional dependence of this parameter by the group TH-VL-NWW-VT-SS. In this parametric cluster we can distinguish those two pairs of correlations which were analyzed earlier: TH-VT and VL-NWW.

If we consider the relationship as a def nition (1), we observe from the point of view of coef f cients' sign that UF (utterance_ f exibility) rises at the same time with the development of TH parameter (r=0.815) and decrease with the increasing of VL (r=-0.508).

So, the subjective and emotional component of the discourse is enhanced by an increase of the vocal sound height and the vocal timbre too, at the same time with the decreasing of the voice intensity.

On the other hand, increasing the speed of speech on texts, SS is explained about 42÷44 % percentage variable growth UF , respectively decreasing the speech fracture SF.

The negativity of the correlation coeff cient between SS and SF is in accordance with the formula of the SF parameter shown in (2). Obviously , at the same time with the increasing number of speaking errors, the speech fracture also signif cantly increases.

REFERENCES

[1] Kochanski G., Grabe E., Coleman J., Rosner B. (2005) Loudness Predicts Prominence; Fundamental Frequency Lends Little, J. Acoustical Society of America 11(2).

[2] Opariuc D. (2009) Statistica Aplicata In Stiintele Socio-Umane (Romanian for Applied Statistics in Socio Humanities), Asociatia de Stiinte Cognitive din Romania Publishing House.

[3] http://www.qsound.com/technology/overview.htm.

[4] http://www.goldwave.com.

[5] Field A. (2009) Discovering Statistics Using SPSS, SAGE Publications Ltd; Third Edition Edition.

[6] A.E. Aronson, D.Bless (2009) Clinical Voice Disorders, Thieme, NY, 4th Edition.

[7] I. Purcaru (1988) Informa ţie şi corelaţie (Romanian for Information and Correlation), Scienti f c and Encyclopedic Publishing House.

IMPACT OF THE INVASION OF MODERN IRRIGATION SYSTEMS IN THE OASIS OF LAHMAR, SOUTH WESTERN ALGERIA

Cherif REZZOUG*
Boualem REMINI**
Saaed HAMOUDI***

*Department of Hydraulics, University of Chlef, Algeria
** Department of Water Sciences, Blida University, Algeria
*** Department of Hydraulics, University of Chlef, Algeria

For centuries, the oasis dwellers of the Algerian Sahara exploit the groundwater through the use of traditional techniques such as foggaras (traditional technique of irrigation in the Algerian southwest), and wells of chadouf (pendulum wells). In the oasis of Lahmar, in Southwest Algeria, the farmers use foggaras (known by the name of foggaras ain - foggaras of source) to irrigate their fields. Nowadays though, due to the indiscriminate use of modern systems (boreholes and pumps) to procure water for irrigation and urban consumption, over-exploitation and drying off of water sources have been one the rise while traditional techniques are becoming day by day out of service and, what is more, palm groves have almost completely disappeared.

Key words: oasis, Lahmar, foggara, sequoia, palm grove.

1. INTRODUCTION

The oasis of Lahmar is amongst the three ksour (castles) (Lahmar , Boukaïs, Mogheul) locally also called the Northern ksour . They are located 50 km north of the county town of Bechar. Lahmar has been a capital city (Daïra) since 1991 and is located 30 km from Bechar **(Figure 1)**. Mougheul is located at an altitude of 902 m and is the highest point of the wilaya (Governorate). These three villages are all agro-pastoral and raising goats is predominant. Their resources are only agricultural and the existence of permanent water helps them maintain the fertile gardens whose products are intended for local consumption.

Lahmar is surrounded by a mountain range known as: Jebel Antar 1953 m and Djebel Grouz 1835 m.

The limits of the municipality of Lahmar are: the municipality of Mougheul to the north, the municipality of Boukaïs to the east, the Jebel Grouz to the west and the town of Bechar to the south. The Lahmar region has a considerable quantity of groundwater , despite the climatic constraints of the environment. In spite of the low rainfall in the region the oasis

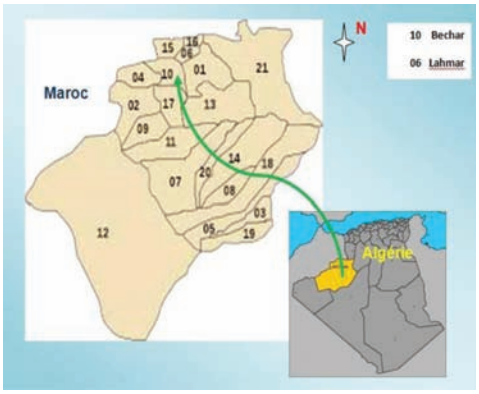

Fig. no. 1. Geographical location of Lahmar

dwellers of Lahmar have been able to cultivate their land by exploiting groundwater gushing from a source (Ain) by foggaras technique and have thus preserved the fragile ecosystem.

By way of contrast, today water needs are essentially met through exploitation of groundwater through the introduction of motor pumps, which in the long run proves detrimental to ecosystem balance and hence, to the health and safety of the locals.

2. PHYSICAL FEATURES

2.1. The climate

The Ksour of the North bene f ts from a less torrid climate than those of the rest of the region. Winter is rigorous; temperatures drop below 0°C. In general, humid periods correspond to the colder seasons, while drought reigns for the hot season.

2.2. The water in the oasis

The principal valleys that cross the perimeter of Lahmar are those of the Elhassra, Lahmar and Sefsaf rivers (wadi), all of which feed into the Morra river , a tributary of the valley of Guir [5]. The water resources available in the region are in the intercalary Continental aquifer where the majority of foggaras are dug.

2.3. The vegetation of the oasis

The vegetation of the oasis is on three layers: the date palm predominates in the tree stratum, and it is accompanied by fruit trees at the shrub leve l and by numerous annual crops in the herbaceous stratum. The palm grove is made up of numerous varieties of date palm trees of dif ferent economic importance. The fruit orchard is composed of a great diversity of species, lemon and grenadier . Annual crops are represented by cereals such as barley and wheat.

3. MAIN CAUSES OF PALM GROVE DEGRADATION

The peasants of the region had the impression that Lahmar territory was in decline, af fected by the degradation of its oasis ecosystem. Several factors interfere in the accelerated deterioration of the oasis, and the most important are:

- The overexploitation of groundwater by modern pumping systems that are mostly fraudulent, uncontrolled and they shall replace the old system;
- The urbanization of the ground in the course of the foggaras on

account of the extension of the city towards the palm grove;
- Lack of maintenance of traditional systems (foggaras wells, springs, seguias - earthen open channels, and accumulation basins);
- The nonrenewal of old palm trees and clandestine grubbing young palms and palm hearts;
- Slightly cramped nature and parcels of productive lands on account of the inheritance that nowadays makes the size of most of the f elds owned by peasants no more than 1 hectare.

4. TRADITIONAL IRRIGATION SYSTEMS

Traditional knowledge is characterized by an integrative approach (society, culture, economy and natural environment) and the prospect of long-term, unlike modern practices geared towards eff ciency.

At the level of the oasis of Lahmar, irrigators exploit the groundwater by using an ancestral technique to irrigate their land, it is called the foggara of source and unlike the classical foggara (**Figure 2)**, the foggara of El Ain captures natural spring waters.

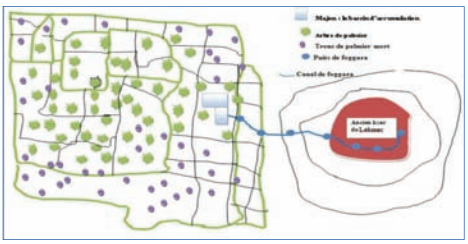

Fig. no. 2. The foggara itinerary of Aine Djemal of Lahmar oasis

The palm grove of Lahmar was served by a network of four (4) foggaras (Aine Djemal, Omran, Tawrirt and Lahmar). The biggest of these, Tawrirt consists of 18 wells maximum depth exceeding 25 meters and the smallest Omran consists of six (6) wells, 10 meters deep.

5. SHARING AND WATER DISTRIBUTION OF FOGGARA

For centuries, the people from the oasis have exploited the few water sources in the region by resorting to their wisdom and a high level of technical skills. They established and controlled hydraulic structures the most sophisticated of which is

Fig. no. 3. A well foggara in the oasis of Lahmar, in January 2008

known as the "foggara" (**Figure 3**).

Around this ingenious technique, a traditional social or ganization the *"Djemâa"* is set up.

This can ensure sustainable management of the work, equitable distribution and access to resources for the entire population of the oases and the *Ksar* according to Islamic laws respected by the whole community.This organization, *"the Djemâa"* consists of representatives of each tribe, family of landowners and owners of water rights, who are entitled to take decisions as to opening new *foggaras* and irrigation canals, repairing or undertaking maintenance work. Moreover, the "*Djemâa"* acts as an arbitrator and settles con f icts,

approves changes, sales, rentals or the sharing of water by their owners. As far as the owners are concerned, the owners appoint a person (*Elhassab*) who monitors the calculation of shares and inheritances.

For domestic use, the entire population of the oasis is entitled to free access to water for domestic consumption, a portion being reserved for the mosque and the imam of the *Ksar*.

Once the water reaches the gardens, its sharing is done in two ways: by volume and by schedule.

5.1. The Volume method

This type of sharing is the most widespread in Algeria.

Each owneris a recipient of a volume of water determined by its contribution to the upkeep and maintenance of the foggara. This breakdown is provided by *kasriates* (plural of *kasria*). The distribution network has a number of *kasriates* which is proportional to the number of subscribers. The *kasriates* are arranged in a pyramid: from the

Fig. no. 4. An example of a kasria in the southwest of Algeria [6]

kasria Lakbira (main), a kind of triangular basin provided with a diverter (comb) receives all the water from the *foggara* and distributes the f ow into three, four or even f ve channels (seguias). From the main *kasria*, the *seguias* (earthen open channels) open to all directions. From these *seguias*, several side *kasriates* take over and distribute the water in a rollout manner to *guemouns* (gardens).

5.2. The time method

In Algeria, the sharing of water per unit time is currently done for water of two *foggaras* in Moghrar (Naama) and it functions the same way as Moroccan *khettaras*. The distribution of water between the co-owners unfolds in turn. In the region of Adrar in South Western Algeria, the watershed of the *foggara* Hanou,

Fig. no. 5. The water storage basin "Majen", January 2008

a schedule *foggara*, is carried out in turn. There are no *kasriates* as in other neighboring *foggaras*.

Relatively large *seguias* go directly to a large *madjen* (reservoir).

The *foggara* is obstructed once or twice per day to allow to restore the required level, then the water is released in a given time, proportional to the f nancial contribution paid by the bene f ciary (**Table 1**). Those operators who are not bene f ciaries are obliged to purchase or rent access to this resource. The mosque has a day of water for irrigation of lands.

Table 1. Characteristics of *foggaras* of Lahmar oasis (source: personal inventory)

Types of foggaras	No. of foggaras	Capture Origin	Mode of sharing	Foggara/ oasis name	State of foggara
foggara of wadis	2	water from inferof ux and surface waters	schedule and volume	oasis of Lahmar (Bechar)	2 abandoned foggaras
foggara of mountains	2	water from the phreatic zone	schedule and volume	oasis of Lahmar (Bechar)	abandoned foggara

According to **Table 1** Lahmar *foggaras* are divided into two types: the f rst type is the *foggaras* of *wadi* fueled mainly by surface water and they irrigate the central palm grove. Nowadays they are abandoned because of water scarcity. The second type is the mountain *foggara* fed by the groundwater and that has dried up after the drying of the groundwater.

6. IMPACT OF MODERN TECHNIQUES SHAFT SINKING

Previously the waters of *foggara* were used for all purposes, whether domestic (laundry, drinking water) or agricultural.

Today's *foggaras* are abandoned. At Lahmar over 65 private wells have been dug since the 80 $_s$, largely because of the drought. They are used to irrigate the gardens.The mine drainage, the only manual departure tends more and more to be performed by electric pumps. The majority of wells exceeds 40 m depth. Therefore, individual wells allow culturing small areas intensively. The water is close to the growing area and can irrigate when desired. However , the initial investment is important and cannot be supported by all families.

The development of agriculture outside the main palm groves and therefore uncontrolled digging of boreholes led to accelerated depletion of water from the aquifer.

The increasing exploitation of water is conjugated with increasingly worsening conditions concerning groundwater recharge. Indeed the area is more and more af fected by chronic drought.

Secondly, the deterioration of plant cover limits the possibilities of inf ltration and the possibility of the water table to ensure food is reduced.

7. THE PROBLEM OF SALINITY

Apart from the impact of increased exploitation of foggaras, there is also a salinization process. The observed Lahmar salinization process results from the fact that the plots are not irrigated regularly after being abandoned.

Thus, we can understand why the majority of plots suf fering from salinity problems are found in the central palm grove. Indeed, on this

palm grove, many owners do not own enough water rights to irrigate their land, so they are forced to abandon some plots.

To study the chemical evolution of groundwater waters of Lahmar before the massive use of pumps and afterwards we will rely on a comparison carried out by the National Agency of water resources-Bechar (ANRH Bechar) and extracts from old inventories (T able 2 and Figure 6). The data in one of the columns show the situation during 1978 before the proliferation of pumps inside the palm grove, whereas another column displays data dating back to the summer of 2011 (ANRH Bechar). The aim of this comparison is to highlight the differences in water properties before and after using pumps inside the oasis.

Table 2. Physical-chemical analysis of groundwater in the tablecloth of Lahmar [1]

Year	2011 analysis	1978 analysis
Type	borehole	borehole
aquifer Tablecloth	Inféro f ux	I n f é r o f ux
PH	7.0	7.9
RS	1010	740
Cd ms/cm	1.09	0.55
Ca++ mg/l	75	70
Mg++ mg/l	69	53
Na+ mg/l	102.3	97.53
K+ mg/l	6.45	6.45
Cl- mg/l	164.23	114
S O 4 — 2 mg/l	138.22	58.75
NO- 3mg/l	7.4	6

Concerning salt concentration, the analyses from 1978 show relatively low salt concentrations in the groundwater compared to the data of 2011. The unreasonable increase in private wells and the irrational increase in pumping and neglect of traditional systems inherited from water sharing are the main causes explaining this high salinity in 2011.

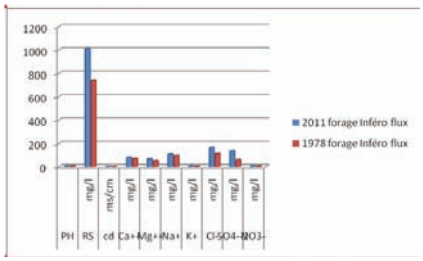

Fig. no. 6. Evolution of the infero chemical of Lahmar f ow [1]

We say that the excessive exploitation, usually exceeding the regulatory power of the water table, results in a continuous deterioration of water quality caused by human activities. The evolution in salinity of groundwater explains the high number of abandoned well surfaces.

8. CONCLUSION

The degradation of groundwater in Lahmar oasis is a good example of the transformations imposed by the anarchic use and control of modern techniques (boreholes and pumps) in an arid and hostile environment.

The invasion of the motor pump has destabilized the functioning

of traditional irrigation on which most of the oasis depends. In our work we distinguished the following:

- The adoption of the use of motor pumps inside the palm grove which conducted to degradation of the latter;
- The efforts of the community to safeguard and rehabilitate the palm grove, but without success;
- The irrigation system (irrigation channel and foggara) is in total breakdown of law and not working;
- Neglect of the land by their owners due to lack of water and salinity.
- In order to revive the oasis and to preserve it and to ensure the proper functioning of the irrigation system in our oasis and palm grove, we must implement the following solutions:
- Ensure the rehabilitation and renovation of the palm grove;
- Require a perimeter of prohibition for open boreholes to protect groundwater of the foggaras around the palm grove;
- Contribute to the maintenance of foggaras;
- Launch emergency by services concerned the rehabilitation operations of seguias to avoid wastage of irrigation water and improve the speed and f ow of water;
- Ensure the repair and maintenance of storage tanks of irrigation water;
- Educate inhabitants of the city by associations that disseminate knowledge and raise awareness as to the importance of protecting this environmental wealth as a heritage.

In conclusion, for decades, motor pumps and modern irrigation techniques have created problems of groundwater depletion and soil salinity in the oasis. That led to the deterioration of the palm grove and resulted in a change in the behavior of the local community and also led to the migration of most inhabitants of the oasis to big cities. Consequently, economic and social status diff culties have emer ged which currently are diff cult to treat if immediate action is not undertaken in accordance with the directions already highlighted by this article.

REFERENCES

[1] NATIONAL AGENCY OF WATER RESOURCES ANRH Bechar (2011), hydrogeological study of the Bechar region. Internal report, Algeria.

[2] Boukar A (2002), water resources development of the northern oasis of Ksour. Memory status Engineer , University of Maskara Algeria.

[3] Water Resources Management. (2012). Hydraulic situation of the wilaya of Bechar - internal report - Bechar, Algeria.

[4] LAARADJ S (2010)A comparative study of irrigation systems used in the oases of the Lahmar and Boukaïs Southwest of Algeria, master thesis. University of Bechar, Algeria.

[5] LEFKIR A. (2005). Development of thematic maps on water resources in

a Saharan region, where the wilaya of Bechar, N2E Seminar, Bechar.

[6] Remini B, Achour B et Kechad R (2008). La foggara en Algérie : un patrimoine hydraulique mondial. Revue des sciences de l'eau / Journal of Water Science, vol. 23, n° 2, 2010, pp. 105-117.

[7] Rezzoug C REMINI B, HAMOUDI S. (2014). The future of traditional water management after the invasion of modern irrigation systems. Oasis Boukaïs, Algerian Southwest, Five Continents - Romanian review of geography. Volume 4, Issue 9.

KEY ACTORS IN THE COLLEGE ENVIRONMENT

Maria Dorina PASCA

Associate Professor, PhD, psychologist
University of Medicine and Pharmacy, Targu Mures, Romania

The common perception about the academic environment is that the student-educator relationship is different from pre academic years since educators no longer have time to fully get acquainted and understand students. Nonetheless, that is tightly related to the academic freedom granted to students once admitted to college given this environment's focus on their development as personalities and professionals. The academic environment is, as Noica indicates (Noica C.:1990), the place where "Disciples come to you to ask. You must educate them that they have nothing to get, but that they need to grow. Disciples want to become ivy, but they should become themselves". Consequently, understanding students and magisters is to actually understand the relationship established between these two entities in the academic environment.

Key words: *psycho-social profile, homo academicus, competence, model, deontology.*

1. INTRODUCTION

The college environment evolves around the social one which, according to Neculau A.(1997), can be viewed as a social cognitive construct the directs behaviors, supports social actors' actions, encourages the acquisition of values, empowers competence. Hence, the academic field is a cognitive and social space where idea and convictions are shared, values emerge, competences clash, structures are established, and strategies are experienced. Moreover, college environment is an ideological area that imposes ideas, social representations that help describe, explain, interpret or justify social situations, relation systems, and power distribution. The actors in this environment (i.e. students and educators) form individualized groups as a result of their interactions, competences, beliefs, mentalities, styles, ideologies. The academic field is thus an environment where various groups cooperate or compete in the name of the ideals they represent. Consequently, the college environment favors the aggregation of all cultural components by which its main actors (i.e. students and educators) to achieve their goals.

2. THE PSYCHO-SOCIAL PROFILE OF STUDENTS

L. Malson's view is most likely one the best by which to better identify and describe students' psycho social profile. According to this specialist, the human being is nothing more than a sum of possibilities before

actually meeting its own kind and getting accustomed to its own body. Consequently, the age of searches for one's own identity, of confusion and rebellion that is characteristic for teenage students is but a means to discover one's own Ego.

What is more, as Munteanu A. (2003) indicates, students who are generally described as late teenagers (i.e. 18/20-24/25 years old), aspire for independence, tend to have a rich and highly interiorized mental life, and grow into individuals under the impact of the external environment and of their gender related identity specificities.

As far as the psychological profile of students is concerned, the latter bears the following characteristics:

• A new type of logical, dialectical thinking emerges and that dominates the world of abstract ideas and real problems;

• New skills are acquired in terms of juggling with the real and the fictional, with simple variables, as well as with secondary symbols;

• The need to organize knowledge in a systematic manner becomes prevalent;

• The need to experiment and to resort to philosophical concepts and ideas is salient;

• The interest for socio-cultural events is manifest;

• The pleasure for contradictory discussions and arguments is relished;

• Increased skill and interest for foreign languages is shown;

• Emotional reactions become more balanced;

• Personality variables are already stabilized.

According to Şchiopu U. and Verza E. (1995), late teenagers are characterized by:

• Fully developed self-awareness in terms of bodily, spiritual and social characteristics;

• Vocational identity that equates the ability to acquainted with one's own strengths and weaknesses;

• The debut of independence;

• The notion of responsibility acquires new variables in terms of its understanding;

• The care for workplace moral climate intensifies;

• The role of creativity as a higher means of expressing personality increases;

• Behavioral aspects signaling the risk of delinquency emerge;

• The ties with the family are still strong but the tendency to take distance to the latter also appears.

Specialized literature Schifirneţ C-tin (după Neculau A.-1997) indicates that psychologically, students are still prone to behaving and experiencing life as late teenagers, even though developmentally they have outgrown this time period in terms of their reactions and emotional stability. Thus, they gradually depart

from their primary groups (i.e. family, school, same age people) and begin to choose their companions by different criteria, one of the most important one being that of gender. The groups they choose to become part of are those where their preferences in terms of college activities, scientific or social preoccupations are shared. Stress is one of the challenging factors of this period and that is induced by multiple requirements. What is more, the lack of a project for one's own life is one of the major risks students become confronted with.

Cognitively, students have the capacity to identify problems and their solutions, and to think strategically (Zanden J., W. Vander: 1985). Their rational thinking allows them to alter and reorganize information. At their age they are bale to acquire scientific theories, to critically examine these and to build their own vision. Their thinking and intelligence abilities surface when comprehensively studying and when required by their teachers to demonstrate their level of understanding. Even though most of them still feel teenagers and do not take responsibility for being and acting as adults (Schifirneţ C-tin:1987), their spectrum of relations and interests increases and gradually includes the tendency towards choosing their professional specialization, to develop relations with adults, to acquire new roles, to make a family of their own, to socially mature, and to integrate professionally.

As Zanden J. and W. Vander (1985) underline, late teenagers experience a conflict between their self and society and they make efforts to strike a balance between protecting their personality and becoming fully engaged in society. That is one of the fundamental characteristics of students. Therefore, the arguments vary in this respect. On one hand, there are advocates of shielding students from the negative influence of society and of exclusively orienting them towards their scientific and professional education and training. On the other hand, there are voices arguing for the need to fully integrate students into society since, as they claim, it is only within the latter that future intellectuals can be educated. These apparently different attitudes emerge from the same view according to which students have the power to change the world and that triggers a tension between them and the world that is more complex than in others. For students, higher education with all its requirements and responsibilities is actually a means to assert their personality. Moreover, even though they do not necessarily view their outputs as inherently tied to society, they may feel the need for the former to have a social impact. Based on this tension between the need to assert oneself and the view on the social environment future intellectuals are shaped. As one of the main actors

within college environment, students shape a whole world through their psychological and social profile and that requires full responsibility in approaching them as beings and not as objects on behalf of their educators.

3. THE STATUS OF MAGISTER/ EDUCATOR

To talk about homo academicus is to make a deontological delineation and view the academic environment as part of social environment given its role of shaping schools and individual. In this respect, Antonesei L. (2005) underlines that educators working in academic environments cannot be merely clerks, but individuals with a vocation and a mission, as well as cultural models that reflect community and social values like: truth, beauty, freedom, solidarity.

Hence, what is a magister's role nowadays? It mostly manages and succeeds in highlighting competence, scientific rigor, professional prestige, as well as in demonstrating professional deontology. To actually become a role model, any magister needs to authentically prove the use of five types of competences Antonesei L (2005):

- Cultural competence, namely specialty and general education and training;
- Psychological and pedagogical competence that allows educators to convey to their audience the necessary educational message;
- Psycho-emotional and communication competence that is inbuilt in personality characteristics, but it is also developed and refined via education;
- Moral competence that should be inculcated in all educators and reflect the the values and ideals promoted by the educational system as a whole;
- Management competence meant to ensure the efficient organization and management of activities, processes, groups and institutions. The latter has been neglected for decades but it has begun to be viewed as a vital resource for educational processes.

As Antonesei L. (2005) points out, for educators to become models they need first to be educated themselves. In this respect, to change the vision on education is actually focus on values and cultural models and that is exclusively dependent on the process of educating the educators. Education can have an impact spiritually and scientifically only if the relation between the student and the magister is viewed from a qualitative perspective and not a quantitative one. Thus, what students look for in their educators are: empathy, ability to communicate, competence, pedagogical skills, intelligence, creativity, objectivity, deontological behavior, all of which

become criteria by which to assess value and models.

One of the shallow disagreements that ensue in the student-magister relationship is linked to the weigh placed by the parties on didactical and interpersonal competences (Dafinoiu I. in Neculau A.:1997). On the one hand, educators emphasize the importance of professional and scientific competence. On the other hand, students unequivocally view didactical skills as salient, closely followed of course by professional competence. For students, educators are first educators and only afterwards scientists or researchers. That actually indicates an important idea, namely that the quality of education is also related to the weigh assigned to psychological and pedagogical disciplines in the colleges educating the educators.

In conclusion, to talk about homo academicus is to highlight quality, values and models.

4. CONCLUSIONS

The common perception about the academic environment is that the student-educator relationship is different from pre academic years since educators no longer have time to fully get acquainted and understand students. Nonetheless, that is tightly related to the academic freedom granted to students once admitted to college given this environment's focus on their development as personalities and professionals.

The academic environment is, as Noica indicates (Noica C.:1990), the place where "Disciples come to you to ask. You must educate them that they have nothing to get, but that they need to grow. Disciples want to become ivy, but they should become themselves". Consequently, understanding students and magisters is to actually understand the relationship established between these two entities in the academic environment. Students live a dual reality: on the one hand they are confronted with the requirements placed on them by their own age, while on the other, they need to meet academic performance criteria meant to shape them for their professional life (Schifirneţ Ctin. in Neculau A.:1997). Given the predominant orientation of the academic environment on their future, there is little focus on students' current status and requirements as individuals, and this dichotomy is acutely sensed by the latter. That is the reason for which the relationship between students and educators needs to be emphasized in academic environments from the perspective of the modelling role of the magister. That is also the moment when this relationship can become one of mentor-mentee that allows the latter to check options, ideas, and thoughts and grow.

REFERENCES

[1] Antonesei, L (2005) Polis şi Paideia (Polis and Paideia), Ed. Polirom , Iaşi.
[2] Antonesei, L; Abdel - arl, Yaahiaa (2000) Managementul universitar. De la viziunea conducerii la misiunea de succes (Academic Management. From leadership vision to successful mission), Polirom, Iaşi.
[3] Munteanu, A. (2003) Psihologia copilului şi a adolescentului (Children's and Teenagers' Psychology), Augusta, Timişoara.
[4] Neculau, A. (2004) Educaţia adulţilor (Adult Education), Polirom, Iaşi.
[5] Neculau, A. (coord.) (1997) Câmpul universitar şi actorii săi (Academic Environment and Its Actors), Polirom, Iaşi.
[6] Schiopu, U.; Verza, E. (1981) (1995) Psihologia vârstelor (Psychology of Age Groups),Ed. Didactică şi Pedagogică, Bucureşti.
[7] Zanden, J.; W. Vander (1985) Human Development, Random House, New York.