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MENU OF CONTRACTS: A NEW APPROACH TO IMPROVING NAVY RETENTION BONUSES

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Military success requires retaining sufficient capable service members, but there is little research on retaining quality personnel. We propose an innovative bonus structure to retain the right quantity and quality of personnel by setting retention bonuses through a menu-of-contracts. The menu provides choices between bonus structures that encourage higher and lower quality personnel to voluntarily select the bonus structure that best reflects their perceived quality. This addresses two essential problems in military personnel research: adverse selection (making inappropriate retention decisions due to hidden quality information) and moral hazard (incentives encouraging personnel to provide less than their best effort). A menu-of-contracts can meet the military's retention needs without relying on past performance to measure expected future performance. This retains higher quality personnel, increases morale and improves future retention. It also induces personnel to maximize effort throughout their careers as they strive for the highest bonus while maintaining the perception of egalitarianism.

Key words: retention bonus, reenlistment bonus, menu-of contracts, retention auction, selective reenlistment bonus, selective retention bonus.

1. INTRODUCTION

Retaining capable military personnel is essential to the Department of Defence's mission success. This study proposes innovative retention bonuses to both retain the right quantity of military service members while also efficiently addressing the right quality mix. We propose a contract design for retention bonuses, through a menu-of-contracts, to address two military personnel problems, adverse selection (i.e., making inappropriate retention decisions due to hidden quality information) and moral hazard (i.e., incentives encouraging officers to provide less than their best effort).

This study proposes a retention bonus contract design that links bonus payments, *ex ante*, to military performance, specifically promotion and selection as Department Head. We recommend using a menu-of-contracts, a well-established concept in economic literature, as the retention bonus contract design. We further argue that this design effectively addresses both adverse selection and moral hazard in military manpower settings, and accordingly improves effectiveness and efficiency.

Using the naval aviation officer community as the example, we describe the current retention bonus system and diagnose its problems. Specifically, the one-size-fits-all approach does not differentiate the bonus policy by higher versus lower quality officers, which inevitably creates unintended negative consequences, including:

- Unavoidable attrition by some of the most capable officers.
- Due to *adverse selection* (i.e., hidden information), the Navy overpays less capable officers (lower quality) relative to more capable officers (high quality).
- The current bonus scheme further creates *moral hazard* (i.e., hidden effort) because the bonus is not tied to future performance; high quality officers may shirk because there is limited financial

reward for high performance and lower quality officers enjoy windfall benefits and may shirk as well.

A menu-of-contracts approach that links bonuses and performance, *ex-ante*, addresses both adverse selection and moral hazard, and improves efficiency by paying the right bonus to the right officers and motivating officers' best efforts. Moreover, this approach is ethical because it is non-discriminatory; each officer is presented the same menu. The approach's advantage is that officers, knowing their type, maximize their utility (including both monetary and non-monetary factors) by self-selecting into their expected type (i.e., a separating equilibrium), and they will be motivated to exert effort consistent with the selected bonus plan.

2. ECONOMIC FOUNDATION FOR A MENU-OF CONTRACTS

This study aims to improve navy retention bonuses through better retention contract design, which falls into the principal-agent contract design framework that economists have extensively researched. The general premise of a principal-agent model involves a principal, requiring work, bargaining with an agent, supplying work. Two usual problems in principal-agent settings are *adverse selection* and *moral hazard*. The former is associated

with hidden information and the latter is associated with hidden action. (Bolton and Dewatripont, 2004) Adverse selection arises from information asymmetry between the principal and the agent, recognizing that agents have private information (e.g., their quality and effort) that the principal doesn't know or knows imperfectly. Moral hazard recognizes that the principal doesn't directly observe the agent's effort and can't explicitly contract for the desired effort. Both adverse selection and moral hazard create challenges for the principal. The principal's objectives are two-fold: limit the agent's information rents and induce the agent's best effort level.

2.1. Insurance as an Example of Adverse Selection and Moral Hazard

Consider the information asymmetry between the insured and the insurer. Insurance buyers (the insured) know their type (i.e., high or low risk), while the seller (the insurer) doesn't perfectly know the buyer's type. The insurer has a general idea about the population's average risk level and can calculate a premium that is commensurate with the average risk. However, if the insurer offers insurance at this "average" premium non-discriminatorily across all individuals, the market will suffer from "adverse selection." That is, low risk people would think the

premium is too high while high risk people would think the policy is a good deal given their high-risk level. Consequently, the policy will be purchased by a disproportionally high percentage of high-risk people. This in turn requires the insurer to raise premiums, which further drives out low risk people, leading to insurance market failure.

The best correction for adverse selection is to price individual buyers discriminatorily, provided that information is symmetric so the insurer knows the insured's risk. However, this first-best fix is not feasible because the insurer can't observe an individual's risk type, even by screening applicants. Furthermore, differentiating premiums across a class of buyers (e.g., federal employees) may be prohibited by law in some cases. Therefore, the ending equilibrium is often the second or third best where information rents are gained.

The second major problem in the insurance industry is moral hazard because the insurer cannot observe the insured's risk-aversion efforts. For example, people holding auto insurance plans with lower or no deductible payments, may less cautiously avoid non-fatal accidents. When a bad outcome's loss is insured, the insured is less prudent in avoiding that outcome. This becomes problematic when the effort to avoid the outcome is not observable and hence not contractible.

2.2. Adverse Selection and Moral Hazard in Navy Retention Bonus Contracts

We argue that similar problems exist in Navy retention bonus contracts. The Navy's personnel system is a hierarchical labor market (with no lateral entry). Furthermore, salaries are determined by a standardized pay table based on rank and years of service, so base pay is the same for all service members with the same rank and years of service (see Table 1). (DFAS, n.d.a) Finally, average promotion rates for the U.S. military officers are regulated by the Defense Officer Personnel Management Act (DOPMA). (DoD, n.d.) Table 2 shows the timing and promotion rates specified by DOPMA for promotion to Lieutenant Commander (O4), Commander (O5), and Captain (O6).

Table 2. Commissioned Officer Promotion Requirements

To Grade	Timing	Opportunity
O4	10 years +/-1 year	80 Percent
O5	16 years +/-1 year	70 Percent
O6	22 years +/- 1 year	50 Percent

The Secretary of the Navy is authorized to recommend all fully qualified officers for promotion to Lieutenant (O3) if they reach 24 months as a Lieutenant Junior Grade (O2) within the next fiscal year.

Rosen observes that employee performance in hierarchical organizations depends on a combination of capability and effort. (Rosen, 1992) He further observes that motivation to expend effort comes from the benefits gained by promotion within the organization. This includes both benefits from immediate promotions and expected benefits from future potential

Table 1. Commissioned Officer Monthly Pay

Years of Service	> 10	> 12	> 14	> 16	> 18	> 20
O-7	$10803	$11125	$11448	$12463	$13320	$13320
O-6	$8541	$8541	$9026	$9884	$10388	$10891
O-5	$7864	$8135	$8486	$9023	$9278	$9530
O-4	$7460	$7832	$8090	$8238	$8324	$8324
O-3	$6634	$6961	$7131	$7131	$7131	$7131

promotions. For example, promotion to O4 in the Navy moves officers to a higher pay band, but also keeps officers eligible for promotion to O5 and above. However, Rosen also observes that the military pay table, with both rank and service time elements, reduces the incentive to promote more quickly; any benefits are temporary over those who promote more slowly. Properly rewarding capability and effort in this system also requires predicting future potential.

Asch and Warner model retention decisions as a comparison between the future benefits of continued service, including current and future potential promotions, versus the benefits of non-military employment, combined with the level of effort required for successful military promotion versus the disutility of effort, and the affinity for or disutility of military service. (Asch and Warner, 2001) The larger and more permanent the benefits for successfully reaching career milestones, the greater the incentive to supply effort and remain in military service. They observe that a one-time bonus may induce retention this period for those on the margin of stay-leave decisions, but marginal individuals are more likely to leave in the next period.

Because the military base pay table limits incentives to work toward promoting early, it is important to

ask if retention bonuses provide additional support to address moral hazard or adverse selection. Navy retention bonuses are one-size-fits-all. That is, all officers within the same subgroup receive the same bonus at the same time, inevitably introducing adverse selection. Specifically, because the bonus is calculated to retain average quality officers, the most capable officers will leave disproportionately; among officers deciding to stay, the Navy inefficiently overpays less capable officers (lower quality) and underpays more capable officers (high quality) relative to their Navy value. The "moral hazard" problem also arises. The bonus is not specifically tied to promotion or performance (e.g., selection to Department Head), which motivates officers to work hard; higher quality officers may shirk because they are rewarded anyway; lower quality officers enjoy windfall benefits and may shirk as well (they are guaranteed bonus payments, like insurance against bad performance).

Since the insurance industry's and Navy's problems are similar, it is helpful to learn how the insurance industry addresses these issues. In particular, how does the insurer, as the principal, tackle adverse selection and moral hazard?

There are two main adverse selection remedies. The first is screening, in settings where permitted by law. Screening includes medical

exams and questioning applicants regarding their health and lifestyle, which effectively reduces information asymmetry and mitigates adverse selection. This assumes that both screening and differential insurance pricing (price discrimination) are legal. In some settings, this remedy may be unavailable because law prohibits either screening, price discrimination, or both.

An alternative approach is to offer a menu-of-contracts to all potential buyers, so there is no price discrimination. Yet the menu-of contracts must be intelligently designed so that individual buyers, who are better informed than the sellers, will self-select into contracts that best fit their needs and simultaneously provide the sellers' desired outcome. The seller does not put individual buyers into specific contracts, rather, the buyers self-select into the "right" contract to maximize their self-interests. In economics, this is called a separating equilibrium, in which types (higher versus lower quality, or higher versus lower risk) are detected and separated by the agents' signal as opposed to the principal's screen.

In the health insurance industry, for example, the menus include low-premium-low-coverage plans and high-premium-high-coverage plans. High-risk people, knowing they may face high medical costs, are willing to pay high premiums to get better coverage; low-risk people, who expect low medical costs, would choose low premium plans, achieving the desired separating equilibrium.

To make a menu-of-contracts work, the principal must ensure that the menu encourages the agents to truthfully signal their type. In his seminal paper titled *Job Market Signalling*, Nobel laureate Spence used labor markets to illustrate signalling theory. (Spence, 1973) In particular, Spence's model includes two types of job applicants whose productivities, labelled high versus low, are unknown to the employer. Due to this information asymmetry, lower-productivity applicants are overpaid and high productivity applicants are underpaid relative to one another, if wages are set at the applicant pool's average expected productivity. High productivity employees would reject offers and find alternative jobs, creating adverse selection. In Spence's case, high productivity workers attempt to signal their type by acquiring more education. To make education an effective signal, it must be significantly costlier for lower-productivity applicants to acquire, so mimicking a high productivity applicant through this signal is impossible or prohibitively expensive (costless signals are termed "cheap talk"). In equilibrium, the employer would pay higher wages to high productivity workers and lower

wages to lower productivity workers, achieving a perfect separating equilibrium. Revisiting the insurance example, a low-premium-low-coverage plan can be designed to be too costly for high-risk people, motivating them to choose the right plan for both themselves and the insurer.

A quick glance at the Navy's retention bonus indicates that similar adverse selection problems exist. The Navy does not know naval officers' capabilities and motivation and the Navy offers the same bonus across all the officers, which overpays less capable and/or motivated officers and underpays more capable and/or motivated officers relative to their Navy value. Following the wisdom of the insurance industry, we propose a menu-of-contracts that offers naval officers a choice between high-performance-high-pay and lower-performance-lower-pay contracts. Achieving high performance is less costly for more capable and/or motivated officers (high quality) and costlier for less capable and/or motivated officers (lower quality). Therefore, high quality officers would choose high-performance-high-pay contracts to signal their quality. Delivering high performance is too difficult for less capable officers, hence they are better off choosing lower-performance-lower-pay contracts. Note that such a menu-of-contracts is not detrimental to moral

because everybody is presented with the same menu and there is no discrimination.

In addition to helping solve adverse selection, the proposed menu-of-contracts addresses moral hazard. In auto insurance, moral hazard recognizes that insured drivers exert less effort to avoid non-fatal accidents because the loss from an accident is well covered. For the same reason, the current military retention bonus system guarantees officers the same bonus regardless of performance, hence, *ceteris paribus*, the bonus doesn't effectively induce the officers' best effort. Linking the bonus payment to an officer's career advancement or performance better motivates more capable officers to provide their best effort because poor performance is not equally rewarded. Combining monetary bonus incentives with an officer's career concerns provides much stronger motivation than the current system.

Our proposed menu-of-contracts improves the Navy's retention incentives. It effectively addresses adverse selection and moral hazard in a non-discriminating way.

3. A MENU-OF-CONTRACTS PROPOSAL FOR THE NAVY AVIATION COMMUNITY

To develop a more effective retention bonus, it is important to understand the current Aviation Career Continuation Pay (ACCP)

bonus. This section summarizes aviators' careers, compensation, and how ACCP fits their expected career progression.

3.1. Aviator Career Progression

Navy pilots and naval flight officers (NFOs) face long training timelines and service obligation. NFOs are generally "winged" in 12–18 months and pilots in 18–24 months, at which time they become fully qualified aviators and begin their service obligation. Currently, pilots owe eight years from this point and NFOs owe six. After winging, both are assigned to a Fleet Replenishment Squadron (FRS) for final training on their specific aircraft. This takes an additional six to twelve months, depending on the platform. (Kelso, 2014)

Prior to their first sea tour, aviators receive "non-observed" fitness reports (FITREPs). Non-observed FITREPs do not count for or against promotion. Officers arrive at their first squadron with a blank evaluation slate. Performing well in this first operational tour is essential to remain competitive for key jobs in later tours.

In the first shore tour, a screening process selects officers for the limited billets that best support aviators' promotion. These orders are important to remaining competitive for promotion.

After the first shore tour, aviators serve in a disassociated sea tour. Like the previous tour, officers are slated to jobs depending on their prior performance.

Not all aviators have time for a second shore tour before their Department Head (DH) tour, because of the various times between commissioning and arrival at their first squadron. This tour length is variable and often a holding point for officers until they screen for O4 and DH. Aviators then complete 30-month orders as a squadron DH, after requalifying at the FRS if necessary.

Aviation officers' career progression is illustrated in Figure 1. The top fork shows the aviators' career path when successfully promoting to O4 and screening for DH.

3.2. Current Aviation Career Continuation Pay Structure

Given the time and money required to train and maintain naval aviators' proficiency, it is essential that the Navy retain quality personnel in these high skill positions. The Navy has long offered bonuses to enhance retention. The current program is Aviation Career Continuation Pay (ACCP). The aviation community commonly refers to ACCP as "the bonus." (NPC, 2020d) ACCP is divided into two categories: Aviation DH Retention Bonus (ADHRB) and Aviation Command Retention Bonus (ACRB). These bonuses encourage

aviators to stay for their DH tour and commanding officer (CO) tour, respectively.

3.2.1. Aviation Department Head Retention Bonus

The ADHRB incentivizes aviators to complete a DH tour. To do so, officers must pass two screening processes. At nine or ten years of active service, depending on several factors officers don't control, aviators are "in zone" for promotion to O4. If an officer has a "Failure of Selection" (FOS) decision, they receive another look the following year ("above zone"). Aviators are separated from the Navy if they FOS a second time.

If aviators select to O4, they may choose to compete for DH orders. This selection board occurs in the fiscal year following O4 promotion. This board has three looks; the first two boards consider officers for operational DH billets and the third considers officers for operational

training DH billets. (CNO, 2015) Unlike FOS for O4, aviators may continue as Navy aviators after DH FOSs; officers promoted to O4 are generally able to remain on active service until twenty years of service, and the associated retirement benefits. However, they are not expected to promote to Commander (O5) if they FOS for DH. They may be promoted by changing communities.

For reference, the unrestricted line community (aviation, surface warfare, submarine warfare, and special warfare) is expected to meet the 80% DOPMA O4 promotion guidelines overall, though promotion rates may vary across these subcommunities and over time. In FY20, the Navy reported an 84% pilot O4 promotion rate, which included 42 second-look candidates (33% of this group). The Navy reported an 88% NFO O4 promotion rate, which included 15 (36%) second-look candidates.
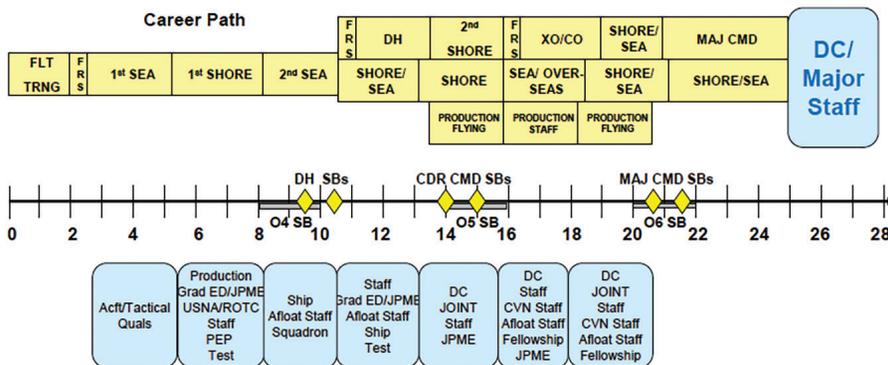

Fig. 1. Aviation Officer Career Progression. (NPC, 2020a)

For comparison, the FY19 aviator O4 promotion rate was 71% and the NFO promotion rate was 72 %. (NPC, n.d.c) In addition, 63% of eligible O4s were selected for DH in FY20. (NPC, n.d.a)

Currently, an aviator may accept the ADHRB bonus a year before completing their Active Duty Service Obligation (ADSO). (ASN (M&RA), 2016) ADSO is calculated from the date the officer is winged. Pilots incur an eight-year obligation and NFOs a six-year obligation. NFOs' time from commissioning to winging is also generally shorter, so they are eligible for the bonus earlier in their careers than pilots. Upon taking the bonus, aviators are obligated to five additional years of aviation service beginning on their ADSO or contract acceptance, whichever is later. (Ibid.) Additionally, they must remain aviators, compete for DH orders, and, if selected, execute those orders. In return, aviators are offered equal lump-sum bonus payments each year, for five years, beginning at their ADSO. If aviators opt to take the bonus early, they receive six payments starting a year before their ADSO, but their total payments remain the same. (Ibid.)

Congress has authorized up to $25k a year for this bonus. (37 U.S.C. § 301b) Previously, the Navy offered $25k to both pilots and NFOs. Over time, however, the Navy has more specifically administered the bonus,

first distinguishing between pilots and NFOs and later distinguishing further by aircraft Type/Model/Series (T/M/S). T/M/S refers to the aviation subcommunity where all members generally fly the same type of aircraft. The Navy became more specific to avoid overpaying subcommunities not facing personnel shortages. The five-year bonuses offered between 2009 and 2020 are given in Table 3. (NPC, 2016)

In FY19, aviators were offered two bonus options, Early Commitment and Standard Commitment, depending on whether they decided before (early) for after (standard) screening for DH. Table 3 shows the Early Commitment five-year bonuses. The standard commitment five-year bonuses are $25K less across all aviators. (Ibid.)

Aviators retain bonus payments already received if they fail to select for either O4 or DH, but don't receive further payments. If aviators voluntarily leave the Navy before completing their obligation, or if they don't accept DH orders when offered, they must repay funds already received. (ASN (M&RA), 2015a; ASN (M&RA), 2015b)

The Navy has allowed some flexibility in this contract. The aviation community regularly allows officers who FOSed once for O4 to transfer to a different community and retain the bonus payments already received. These officers are likely

to FOS on the second look, and the probability is even lower that they will then select for DH. Rather than forcing these officers to stay in aviation, the aviation community allows them to transfer to a different community, potentially select to O4, and continue their Navy service. This saves the Navy from separating officers who could add value in a different community.

a different community after a single FOS.

3.2.2. Aviation Command Retention Bonus (ACRB)

The ACRB is different than the ADHRB. The ACRB is only offered to aviators who promote to O5, apply for, selected to, and are actively serving as a squadron CO. (ASN

Table 3. Total Aviation Command Retention Bonuses 2009–2020

	T/M/S	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FV17	FY18*	FY19	FY20
Pilot	HM	$125K	$125K	$50K	$50K	$75K	$75K	$75K	$75K	$75K	$100K	$175K	$175K
	HC/HS/HCS	$125K	$125K	$50K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$125K
	HSL/HSM	$125K	$125K	$50K	$25k	$75K	$75K	$75K	$75K	$75K	$75K	$175K	$125K
	VAQ	$125K	$125K	$75K	$125K	$125K	$125K	$125K	$125K	$125K	$150K	$175K	$175K
	VAW/VCR	$125K	$125K	$25k	$50K	$50K	$125K	$125K	$125K	$125K	$125K	$125K	$125K
	VFA	$125K	$125K	$125K	$125K	$125K	$125K	$125K	$125K	$125K	$150K	$175K	$175K
	VP	$125K	$125K	$50K	$50K	$50K	$75K	$75K	$75K	$75K	$75K	$75K	$125K
	VQ(P)	$125K	$125K	$50K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$125K
	VQ(T)	$125K	$125K	$50K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$125K
NFO	VAQ	$125K	$75K	$100K	$100K	$100K	$100K	$100K	$100K	$100K	$100K	$175K	$75K
	VAW	$125K	$75K	$25k	$50K	$50K	$75K	$75K	$75K	$75K	$75K	$50K	$75K
	VFA	$125K	$75K	$50K	$50K	$50K	$50K	$75K	$75K	$75K	$75K	$75K	$75K
	VP	$125K	$75K	$50K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$75K	$50K
	VQ(P)	$125K	$75K	$50K	$50K	$50K	$50K	$75K	$75K	$75K	$75K	$75K	$50K
	VQ(T)	$125K	$75K	$25k	$50K	$50K	$100K	$100K	$75K	$75K	$75K	$50K	$75K

The drawback is that this policy allows lower performers to accept the bonus knowing that they are unlikely to select to O4, and then transfer to a different community, stay in the Navy, and retain bonus payments already received. Mitigating this drawback, it is difficult to transfer to

(M&RA), 2015a; ASN (M&RA), 2015b)

For reference, DOPMA specifies a 70% O5 promotion rate. Again, the Navy aggregates all unrestricted line officers for DOPMA compliance. The Navy reported a 61% FY20 pilot promotion rate to O5, including

29% of second-look candidates. The Navy reported a 58% FY20 NFO promotion rate to O5, including 19% of second-look candidates. The FY19 promotion rates to O5 were 65% and 45% for aviators and NFOs, respectively. (NPC, n.d.b) The Navy also reported that 28.5% of eligible O5s were selected for command in FY20. (NPC, n.d.a)

The annual ACRB bonus is $18,000, the first instalment of which is paid upon contract acceptance and the second instalment a year later. The contract obligates officers to their 21st and 22nd years of service. Should officers apply for the bonus after their 20th year of service then the two-year obligation begins when the Navy accepts their application. The offer expires the day the aviator relinquishes squadron command. (ASN (M&RA), 2015a; ASN (M&RA), 2015b)

Most officers complete their CO tour in their nineteenth year of service. Assuming they accept the bonus immediately, they are paid in advance for future years of service. The Navy felt it prudent that aviation DHs receiving ADHRB bonuses were not better paid than the CO, so CO bonus payments begin before the obligated service.

3.2.3. Problems Facing Aviator Retention

The rigid structure of junior officers' promotions in their first years of service and the Navy's preference for egalitarian pay structures, based on rank and years of service, as codified in the military pay table (DFAS, n.d.a), make it difficult to retain the best performers as opposed to lower performers. It is critical, however, to retain high performers to ensure continued excellence in Navy aviation. Identifying and retaining top performers is critical to any organization, particularly those with hierarchical labor markets. Motivating middle and lower performers to become top performers is even more important with mandated 80% and 70% promotion rates for O4s and O5s, respectively. Our proposal supports these goals.

The Navy faces two problems. First, it needs to retain the required number of high-quality officers. However, focusing solely on quantity could lead to a vicious cycle of poor leadership and retention as previously seen in the Surface Warfare Officer community (Stocker and Crawford, 2008); focusing solely on quality could leave billets unfilled. Second, the Navy needs to accomplish this efficiently; paying the right people a sufficient bonus to remain in aviation and compete for both DH and CO billets.

The Navy has the added constraint that morale and pay parity play a large role in compensation decisions. The Navy prefers similar compensation for service members with similar qualifications. The

military pay scales are uniform across all services and publicly available. (DFAS, 2020) This, in part, is why the Navy and other services shy away from pay-for-performance pay plans. The military assumes that better performance leads to faster promotion and the associated increased pay. However, promotions for junior Navy officers (Ensign, Lieutenant Junior Grade, and Lieutenant) depend primarily on time in rank, not performance.

The first-time junior officers' promotion depends on performance is selection to O4, nine to ten years after commissioning. While this promotion is based on officers' performance, the time they become eligible for promotion is largely independent of performance, despite some recent Navy efforts to increase timing flexibility. (CNO, 2015) Early promotions are rare in the aviation community and pay advantages from early promotions only last one year. Officers promoting in zone have the same rank and years of service as early promoted officers, and hence the same pay.

The Navy has tried to make the ADHRB more efficient over time, recognizing that offering all aviators the same bonus is a blunt instrument. To increase the bonus' efficiency, they first distinguished pilots from NFOs, and then further distinguished aviators by T/M/S. (NPC, 2016) The essential next step is incorporating officer quality. The bonus does not currently distinguish between high and lower-quality officers. All aviators are offered the same bonus within the same designator (pilot or NFO) and T/M/S.

Targeting larger bonuses to high quality aviators requires distinguishing high from lower-quality aviators using the Navy's limited personal performance data. The first two to three years of an aviator's career are spent in flight school, with no observed FITREPs. After that, NFOs have a squadron tour and a shore tour to prove their Navy value. The Navy may have to decide what bonus an NFO deserves after just two tours of duty, and NFOs may need to decide whether to take a bonus in that same time frame. Pilots have one additional tour.

There is what is considered a "golden path" of jobs leading to DH and CO selection. There are limited numbers of these jobs, so it becomes critical to receive these assignments. Aviators are selected to this path based largely on the merit of their final first tour FITREP. While aviators receive FITREPs in each tour, it is widely recognized across all communities that the final (check-out) FITREP from their most recent tour is the most important. This FITREP gives the officers' final ranking against their peers in the unit. In practice, the aviation community decides whether an officer will succeed based on limited data.

Increasing the ACCP bonus' efficiency and retaining higher quality officers also increases the quantity retained. A 2014 officer retention survey asked aviators why officers stay or leave the Navy. The author identified three actionable areas where the Navy could affect retention: pay, navy culture, and operational tempo. (Snodgrass, 2014) Effectively restructuring the ACCP bonus affects pay and indirectly navy culture, a major part of which is leadership. Increasing pay for the highest performers presumably keeps the best leaders. Better leadership helps future retention, as many officers cite poor leadership and communication as a reason for their departure. (Doyle and Patrissi, 2014) Not overpaying lower performers saves money that can be applied to retaining the required quantity of high performers.

3.2.4. Solution: Menu-of-Contracts

How do we retain the best quality officers in the numbers required while also maintaining a perception of fairness and parity? The answer lies in a menu-of-contracts. Allowing officers to choose their bonus structure maintains perceived fairness in the bonus payments. Aviators, knowing their type, maximize their interests by self-selecting into higher and lower quality tiers. This improves the Navy's bonus efficiency.

4. PROPOSED MENU-OF-CONTRACT BONUS PLAN

We propose that the Navy offer aviators two DH tour bonuses, and another two CO tour bonuses. The tier 2 bonus has lower total payments, proposed to be 75% of the current bonus. (Bonus amounts are illustrative and may change depending on circumstances at the time offered.) The bonus is offered six years after an aviator's winging date for both pilots and NFOs, and payments begin immediately upon contract acceptance. In return, the aviator is obligated to compete for and accept, if selected, DH orders. Payments continue annually until the end of the DH tour, at which time the payments stop and the aviator is free from contractual service obligations. The tier 2 bonus may be taken at any time after the six-year mark and before the end of the DH tour, but payments stop at the end of the DH tour no matter when the bonus was taken. Payments stop immediately if an aviator fails to screen for O4 or DH. If pilots don't accept this bonus, they must complete their required eight years of obligated service

after winging. NFOs can transfer or separate after completing their obligated service.

The tier 1 bonus initially pays one half of the tier 2 bonus. Upon selection to DH, the tier 1 bonus pays out at 2.67 times the tier 1 bonus. Total tier 1 bonus payments taken at the six-year mark for aviators selected for DH will total approximately 120% of the current bonus, or over 150% of the tier 2 bonus. All aviators selecting the tier 1 bonus at six years receive the same total payments no matter when they select to DH. If they delay accepting the bonus, they forfeit payments for each year delayed. The major stipulation to these bonus options is that aviators choose their preferred bonus after completing their first squadron tour, though they can choose to accept or reject that offer at the six-year mark after their winging. Table 4 summarizes the tier 1 and 2 bonuses.

High quality officers confident about promoting and selecting to DH should choose the Tier1 bonus and accept their DH assignment to maximize their bonus payments. Successful candidates would earn 7.125B, where B is the current annual bonus, as opposed to 4.5B under the Tier 2 bonus. Lower quality officers pessimistic about DH selection should choose the Tier 2

bonus, paying 2.25B if they FOS, as opposed to 1.125B under the Tier 1 bonus.

All DH contracts terminate at the end of an aviator's DH tour and flow into a similar CO contract system. Two contracts will be offered at the end of an aviator's DH tour. Tier 2 guarantees immediate payments at 75% of the current CO bonus and obligates aviators to compete for and accept squadron CO orders, if selected. Payments stop should an aviator fail to select for O5 or command.

Like the tier 1 DH bonus, the tier 1 CO bonus initially pays half the tier 2 bonus. Payments begin upon contract acceptance. The tier 1 bonus increases upon CO selection, doubling the total tier 2 bonus. Bonus payments stop when the CO tour ends, ending aviators contractual obligations. Payments pause upon an FOS for both the ADHRB and ACRB. Payments stop if the aviator has a second FOS. If officers select to the position in question on their second look, payments resume including reimbursement for missed payments. Officers selecting on their second look are paid the same total bonus as those selecting on their first look. The following describes the rationale for each bonus plan element.

Table 4. Bonus Payments by Bonus Choice, Bonus Acceptance, and Career Outcomes

Bonus Choice Decision at the end of first sea Tour (end of the 6th yr.)	Bonus Acceptance?At the sixth year after winging (end of 8th yr.)	Promoted to DH? (end of the 11th yr.)	Bonus before being promoted to DH*	Bonus earned as a DH (yrs. 12-14)	Total Bonus Payout
Tier 1	Yes	Yes	.375B*3=1.125B	2B*3=6B	7.125B
		No	.375B*3=1.125B		1.125B
	No (intend to leave)	Yes (unlikely)	0	0	0
		No	0	0	0
Tier2	Yes	Yes	.75B*3=2.25B	.75B*3=2.25B	4.5B
		No	.75B*3=2.25B	0	2.25B
	No (intend to leave)	Yes (unlikely)	0	0	0
		No	0	0	0

* B is the current annual bonus.

4.1. Early Selection of Bonus Option

Selecting the preferred bonus option early is essential for an effective menu-of-contracts system. By committing early, before officers learn all of their FITREP results, billet assignments, and other factors contributing to DH selection, they indicate whether or not they expect to expend the effort required to perform well. If the Navy allowed officers to choose later in their career, then officers could observe their past performance, determine the chances of making DH, and choose the bonus accordingly. Early choice incentivizes tier 1 bonus takers to maximize their efforts to select to DH so they receive the highest payoff. It also alleviates the Navy from determining which aviators to offer higher and lower bonuses. The aviators self-select into the appropriate category based on their expected ability and motivation to promote and select for DH.

It does not pay lower expected performers to choose tier 1 bonuses because they receive lower bonus payments before their FOS for O4 or DH. Lower performers should choose the tier 2 bonus because it guarantees higher payments assuming they screen out. If they are middle performers and not sure they will select for DH, they will choose between tier 1 and 2 bonuses based on their risk tolerance. The Navy has

received fair value if officers chose the tier 1 bonus and are screened for DH, while the Navy has paid less for a DH if selected officers chose the tier 2 bonus. Whether selecting the tier 1 or 2 bonus, the Navy pays less money under this proposal than under the current bonus scheme for officers who FOS and are forced out.

4.2. Six-year Mark

Currently, aviators can take the ADHRB bonus based on their ADSO date. ADSO is significantly different for NFOs, who incur a six-year service obligation after winging, compared to pilots, who incur an eight-year obligation. The Navy has learned that it needs to offer aviation bonuses by the time aviators complete their ADSO because most aviators decide whether or not to commit to a Navy career at their ADSO. The Navy changed the ACCP structure to ensure that it was available even for officers on shore tours.

The menu-of-contracts is available at the six-year mark after winging for both pilots and NFOs. For an effective menu-of-contracts system, there must be time between contract signing and the milestones triggering higher bonus payments. Lower quality individuals have less incentive to select into tier 2 bonuses if contract signing and realizing the required milestones are close in time. With few or no bonus payments prior to the critical milestones, the higher

initial tier 2 payments are relatively insignificant. Officers will select the higher tier 1 bonus if they have even a small chance of making DH.

We also cannot offer the bonus too early because officers may be reluctant to accept the continued service obligation years before their ADSO. Circumstances can change leading aviators to reconsider their continued service during the intervening years.

4.3. Stopping Payment After DH Tour

Stopping payments and service obligations after the DH tour disincentivizes aviators from delaying choosing their bonus until their O4 and DH outcomes are certain. Delaying the bonus can only hurt aviators because they miss potential payments.

This bonus element also incentivizes pilots to obligate to continued service with additional years on their ADSO. Should pilots choose to separate at the earliest off ramp, they can reject the bonus and serve their final two years of obligated service. If they are unsure of whether or not to stay, they can delay their bonus decision until completing their service obligation, but they miss those bonus payments. Aviators must accept the bonus at the earliest possible point to receive the full bonus available.

Stopping bonus payments after the DH tour also incentivizes aviators to accept the command bonus to continue serving at close to their current income. The danger is that aviators will resign their commission on completing their DH tour. However, aviators have served over 14 years at this point. The draw of retirement benefits at 20 years and the potential immediate CO bonus will help retain these aviators. Furthermore, the new retirement plan offers officers continuation bonuses between their eighth and twelfth year of service. Naval officers are currently eligible to receive an annual payment of 2.5 times their basic monthly salary for four years at 12 years of service, which obligates them to an additional four years of service. (DFAS, n.d.b) Combining this with the command bonus offers a large incentive to remain in Navy aviation. Aviators are very close to the 20-year mark when the blended retirement and command bonus obligations expire, so they should stay at least until then.

4.4. Continuous Offer vs. One-time Offer

The Navy accomplishes two things by offering the DH bonus at any time, and not just the six-year mark. First, as explained above, pilots may be reluctant commit to extra service obligations at the six-year mark because they are considering separating after completing their ADSO. Providing pilots the option to accept the bonus at any time offers an incentive as they decide. Secondly, offering this flexibility does not increase the Navy's cost, because the payments stop at the end of the DH tour. Deferring the decision penalizes candidates by missing payments and saves the Navy money.

4.5. Payment Pause for One-Time FOS

This bonus plan aims to limit payments to officers who FOS to 04, DH, 05, or CO. A single FOS indicates that an aviator is a lower quality candidate. Should they later select to 04, DH, 05, or CO, they are paid the same bonus as if selected on the first look. However, pausing payments at the first FOS saves the Navy money should aviators FOS twice, as is normal.

5. EXPECTED EFFECTS

5.1. Increased Retention of Highest Quality Aviators

This bonus system offers the largest bonuses to the highest performers, while avoiding the perception that the Navy is acting inequitably. Aviators choose the bonus plan that maximizes their individual expected earnings. Aviators who believe they are motivated, high performers will choose the tier 1 bonus, expecting to achieve the required milestones

and receive a higher total payment. Aviators who fear they are lower performers, or less motivated, will opt for the tier 2 bonus, which allows them to receive guaranteed payments whether or not they select to 04 and DH, at least until they FOS for 04 or DH. Navy aviation needs to keep its best officers or face a spiral of poor leadership feeding into poor retention, as reported within the Surface Warfare Officer community. (Stoker and. Crawford, 2008) This bonus system is an effective way to identify expected high performers and offer them higher bonuses.

According to Kuhn and Yockey, individualized performance evaluations best support bonus systems offering high-risk-high-reward options and lower-risk-lower-reward options. (Kuhn and Yockey, 2003) This characterizes the Navy, where FITREPs, billet selection, and all other measures of officer quality are based on individual performance. Aviators' fate is in their hands, including promotion and selection to DH. This is what people want when deciding whether to take a riskier performance-based compensation package or a safer lower compensation.

5.2. Increased Bonus Efficiency

This bonus program will use the Navy's bonus budget more efficiently. Offering individual aviators bonus options saves the Navy money and retains more quality officers. Figure 2 shows potential outcomes for aviators facing these decisions. Figure 2 assumes that officers forgoing a bonus do so because they intend to leave the aviation community, either by leaving the military or transferring to a different community (outcome 3 in Figure 2).

As Figure 2 shows, if high performers choose the tier 1 bonus, accept it, and select for DH as expected, the Navy has successfully targeted the bulk of the bonus budget to high performers (outcome 1). The Navy pays more per officer retained, but retains high quality aviators. The main risk with this bonus system is if aviators choose the tier 2 bonus because they are not certain they will perform well. If they later expect to select for DH, they may not accept the lower bonus payments (outcome 6).

Lower performers are not expected to choose the tier 1 bonus, but if they do and accept it, they will only select for DH if their performance improves. If they do perform well, they shift to outcome 1 described above. If not selected, they will only receive the lower payment before they FOS by either the O4 or DH selection boards, saving the Navy's bonus budget (outcome 2).

Aviators unsure of their selection to DH, should prefer the higher initial payments offered by the tier 2 bonus. Some of those might ultimately perform well and select for DH allowing the Navy to

retain high performers at 75% of the current system (outcome 4). If not selected, they will only receive bonus payments until they FOS for DH, again costing the Navy 75% of the current system (outcome 5).

Aviators who choose either tier 1 or 2 bonuses but FOS on their first O4 look (outcomes 2 and 5), may see limited chances of making DH and instead leave the Navy or transfer communities. In this case, the aviation community has separated a lower performer after paying only a portion of the total bonus. This also allows that officer to transfer to a different community without risking a second FOS for O4, potentially saving the Navy from separating an officer well suited to a different community.

5.3. Lower Payments to Lower Performers

NFO's in particular, and pilots to a lesser degree, currently receive large payments before they FOS by O4 or DH boards. The menu-of-contracts disincentivizes that behaviour. Officers taking either the tier 1 or tier 2 bonus and not selecting to DH receive lower annual payments than under the current system. On the other hand, aviators not accepting the bonus clear the aviation community of lower performing or less committed officers sooner than if screened out by O4 or DH boards.
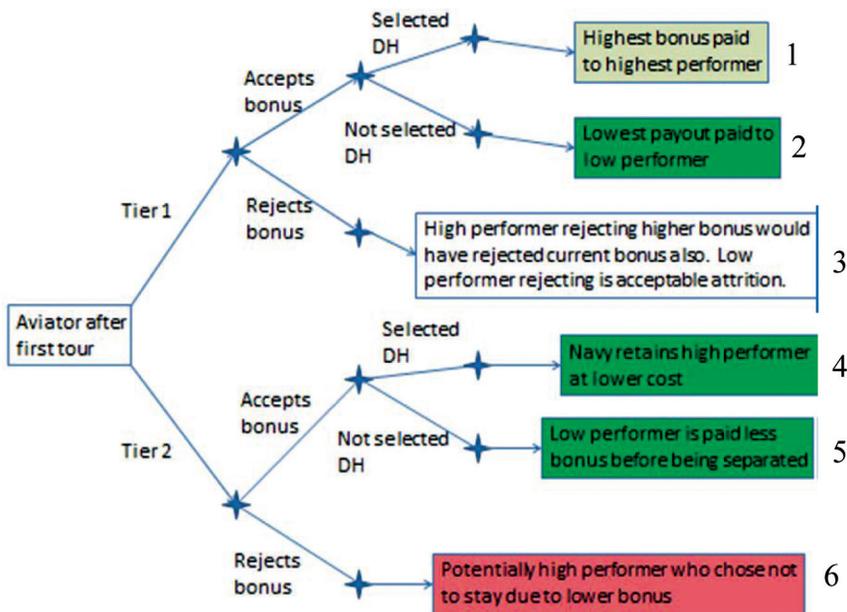

Fig. 2. Possible Bonus Outcomes

5.4. Increased Motivation and Effort

The incentives for high performers will be significant under this new system, motivating officers selecting the tier 1 bonus to remain in service and maintain a high performance throughout their careers. The payoffs for DH selection are significant; the penalty for FOS is equally substantial.

The Navy can't observe, and thus reward, expended effort. Officers make a personal decision concerning the effort devoted to top performance. The Navy can only observe results of officers' efforts through the officers' performance, and that may not become observable until well after the expended effort. For instance, officers know if they maximized their effort to receive a good FITREP when they leave a command, but the Navy will not observe that FITREP until much later. The menu-of-contracts is intended to motivate middle and lower performers to increase their effort to become high performers. The rewards for such effort are significant, for the Navy and the aviator. Any tier 1 bonus taker is beneficial from the Navy's standpoint. Those selecting to DH are either naturally high performers making their best effort to ensure selection, or middle or lower performers investing significant effort to increase performance. Even aviators who don't select for DH presumably exert stronger effort attempting to be selected, benefiting the Navy. From the aviators' standpoint, they hope their added effort is rewarded by higher bonus payments.

5.5. Maintenance of Equity

The element of choice is essential to maintain equity among aviation officers. Officers choose the bonus plan that best fits their skills, expectations, and intentions. This alleviates concerns about the Navy treating anybody unfairly or favouring some aviators over others. Simultaneously, it relieves the Navy of deciding who should get higher or lower bonuses. Many officers will also appreciate holding their fates and compensation in their own hands.

6. SETTING RETENTION INCENTIVES: STATUS QUO, AUCTIONS, AND MENU-OF-CONTRACTS

Considering the critical role retention incentives play in military force management, it is important to develop criteria to compare alternative approaches to implementing retention incentives perform. Arguably, the most important performance measure is precision: the ability for these retention incentives to accurately meet their quantity and quality objectives. The 2008 Quadrennial Review of Military Compensation

published four additional evaluation criteria for military compensation programs. (DoD, 2008) Adapting these four principles to retention incentives yields the following performance measures:

- *Voluntary*: retention incentives should ensure aviators willingly accept the required service commitment and perceive that compensation is satisfactory and fair.

- *Flexible and Responsive:* retention incentives should be flexible enough to effectively respond to emerging issues, shifting priorities, and changing market conditions.

- *Best Value:* retention incentives should provide cost-effective solutions that minimize costs to address service needs.

- *Support Achievement:* retention incentives should reward exceptional performance.

The final performance measure introduced for this assessment is practicality, including Navy implementation and aviator participation ease. (Coughlan and Gates, 2010) We will use these criteria to compare three alternative approaches to setting retention incentives: the status quo, the menu-of-contracts, and auctions.

The status quo relies on statistical analysis to set one-size-fits-all retention incentives at various career milestones. The most common

statistical modelling approaches include:

- basic econometric regression models
- Annualized Cost of Leaving model
- Dynamic Retention Model

For several reasons, including data biases and sensitivity to assumptions that are difficult to validate, these modelling approaches have reliability challenges for setting retention bonuses at any particular point in time. Arkes points to four primary sources of biases affecting these models:

reverse causality from supply shifts (a negative bias), the endogeneity of the decision point causing coded SRBs [selective retirement bonuses] to be higher for re-enlisters than leavers (a positive bias), measurement error (a likely negative bias), and excess supply preventing the full effect of an SRB change to materialize (a positive or negative bias). (Arkes, 2016, p. 475; see also Arkes, et al., 2019)

As a result, decision makers have used rules-of-thumb and past experience to modify the modelling results. For example, Bock compared imputed and actual retention bonuses for U.S. Marine Corps. Zone A reenlistments (marines between 17 months and six years of service). (Bock, 2005) As pictured in Figure 3,

he found little correlation between the predicted required Selective Reenlistment Bonus multiple (multiplier on basic monthly pay) and the actual multiple offered.

Traditional retention bonuses invoke willing retention (voluntary), but may be set too high or low to retain the targeted number of aviators and don't discriminate over aviator quality. Thus, they may not retain the desired aviator quantity or quality (precision) and don't motivate aviators to work to increase quality (support achievement). Further, traditional retention incentives are purely monetary-based and do not incorporate non-monetary incentives or other cost-saving measures (best value) and only change periodically (flexible). However, traditional retention incentives are relatively

easily implemented and understood by aviators (practical). Thus, the traditional retention incentives score high as voluntary and practical, but low as precise, flexible, best value, and support achievement.

The menu-of-contracts has two distinct advantages over the traditional approach. It distinguishes between higher and lower quality aviators (precision), paying bonuses that reflect aviator quality, and motivates aviators to enhance their quality (achievement). As such, this approach is more precise, flexible regarding force quality, and supports achievement. It also allows aviators to reveal their perceived capability and motivation to achieve high performance. It is difficult for the services to identify high quality performance with
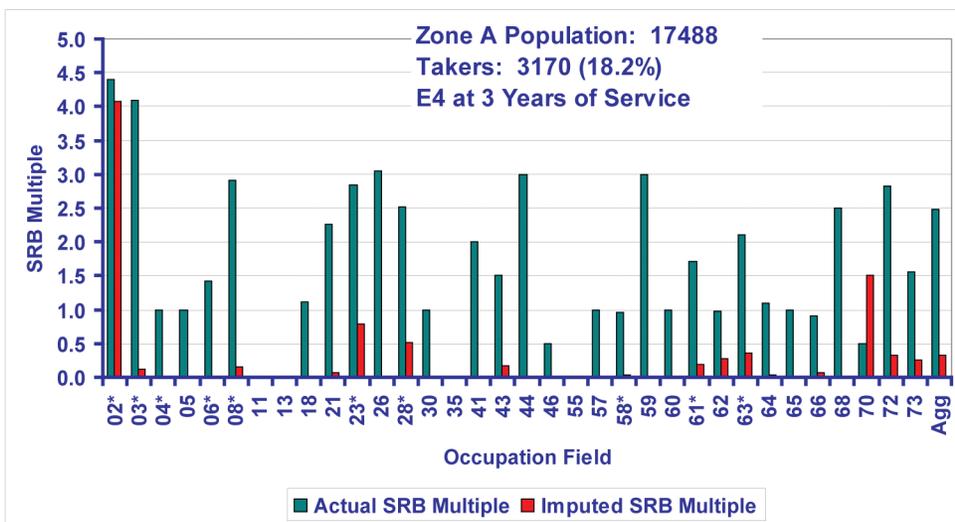

Fig. 3. Actual Versus Imputed SRB Multiples. (Bock, 2005)

the current performance reviews. Selfidentification avoids this difficulty. At the same time, the menu-of-contracts option faces the same precision concerns about setting bonuses as the traditional approach and is slightly more complicated to implement and for aviators to understand.

Auctions are an alternative for setting retention incentives. (Coughlan and Gates, 2010; Coughlan, et al., 2011; Coughlan, et al., 2013; Kelso, 2014; Williams, 2015) A basic auction, where aviators bid the bonus they require to remain in aviation and the Navy retains the lowest bidders, provides precision in setting the minimum retention incentives required to achieve the precise retention outcome desired. (Coughlan and Gates, 2010) The enhanced precision auctions provide makes auctions flexible and responsive to military needs at a potentially reduced cost. However, they do not discriminate between high and lower quality service members and are purely monetary incentives so they suffer the same best value concerns as the current bonus system.

Future research could consider incorporating simple auctions into the menu-of-contracts approach to improve precision and best value. Such a hybrid approach would rank high in all performance dimensions, except practicality. It would be more complicated to implement and for aviators to understand than the current bonus system.

Finally, both monetary and non-monetary incentives affect aviators' retention decisions. Management literature has documented numerous non-monetary factors that critically influence employees' turnover decisions, including job satisfaction, organizational commitment, job alternatives, and job embeddedness. (Lee, et al., 2014) In fact, monetary incentives are rarely directly mentioned. This casts doubt on the wisdom of using monetary incentives as a major determinant of retention. More complex auctions can introduce personalized non-monetary incentives, such as location choice, geographic stability, etc. (Coughlan and Gates, 2010).

7. CONCLUSIONS

The menu-of-contracts system is a viable alternative to the current retention incentives. The menu-of-contracts can meet the Navy's retention needs while increasing efficiency. The menu-of-contracts encourages and rewards good performance, without using past performance to measure future expected performance. This will retain higher quality aviators, which increases morale and retention. It also induces aviators' maximum effort throughout their careers as they strive for the highest possible bonus.

The menu-of-contracts does all of this while maintaining the perception of egalitarianism, remaining within the current aviator career timeline, and utilizing the promotion structure already in place.

However, this initial menu-of-contracts approach requires estimating the bonus that retains the right quantity and quality of aviators. Further, the menu-of contracts doesn't incorporate non-monetary incentives beyond career progression incentives. Auction designs address both of these concerns, providing the opportunity to incorporate choice of location, geographic stability, etc. Future research should develop a more complex menu-of-contracts design, introducing the precision of auctions in determining bonus levels and incorporating non-monetary incentives.

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RETENTION OF MILITARY PERSONNEL. PRACTICE OF THE GEORGIAN DEFENSE FORCES AND EXPERIENCE OF THE US ARMY

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Having defense forces that meets modern requirements is essential for the development and stability of Georgia, protection of national interests, overcoming the threats facing the country, national security priorities and implementation of strategic choices. To achieve these goals, the country is focused on building combat-ready, well equipped and trained defense forces, which also includes planning of military personnel, recruitment, retention, career development and separation/ retirement of military personnel. It should be mentioned that management of the military personnel in the Georgian Defense forces and defining the ways which lead to achieve the set goals are based on guidelines of NATO standards, US and Western experience and recommendations of international organizations, as well as NATO commitments. The article consists of an introduction, a main part and a conclusion. The introduction of the work presents the practical and the theoretical significance of the article. The main part presents the theoretical and practical aspects of conducting the process of retaining military personnel in Georgian Defense Forces and the experience of the US Army. The conclusion introduces the results and recommendations for the development of the military retention system and its future prospects.

***Key words:** Retention; Retention program; Retention of military personnel; Retention NCO.*

1. INTRODUCTION

Retention of military personnel is one of the important functions of the „life cycle" of military personnel management. It is due to the close connection with other functions in the „life cycle" of military management such as planning military personnel, recruitment, career development and separation/retirement. As a matter of fact the process of retaining military personnel balances the existence of qualified personnel with its inflow and outflow resources, helps the system to achieve a high standard of combat readiness, attracts professional personnel, and manages their professional career, development and dignified retirement, as well as the popularity of the system. Accordingly any success or failure in the process of retaining military personnel affects other functions of the „life cycle" of military personnel management.

To create an effective system of retaining of military personnel in Georgian Defense Forces, it is important to study the experience of the US Army, to analyze the essence and purpose of the retention of military personnel, its theoretical and practical role. Defining appropriate tactics which corresponds to the strategic orientations of the military personnel management: „career management, recruitment, development and retention of talented and skilled personnel" [1].

2. PRACTICAL ASPECTS OF RETAINING MILITARY PERSONNEL

The process of retaining military personnel in the Army serves in a broad sense as retaining qualified personnel, managing attrition and helping to meet the needs of the Army in terms of manning military personnel.

According to the regulations of retaining personnel of the US Army National Guard „Retention is the process of retaining ARNG Soldiers who reach their expiration terms of service (ETS). Attrition management is the procces of redusing Solder losses from within the ARNG while still under contractual obligation" [2]. In other definition „retaining process is a process of keeping employees on the staff, and not losing them to rival firms" [3].

It should be noted that the US army retention military personnel regulation is compiled in the form of a guideline in the „Army Retention NCO program".

According to the guideline objectives are defined as following:

„A. Reenlist, on a long term basis, sufficient numbers of eligible RA Solders to support end-strength and readiness requirements.

B. Enlist, or transfer, and assign sufficient numbers of eligible Soldiers who are separating from the RA into RC units, consistent within geographic constrains.

C. Achieve and maintain Army force alignments through the retention, transfer, or enlistment of highly qualified soldiers in critical skills and locations.

D. Adequately support special programs such as United States Military Academy Preparatory School (USMAPS) and Reserve Officers` Training Corps (ROTC) Green to Gold programs" [4].

It is noteworthy that significant attention is paid to personnel retention in Georgian Defense Forces as well as in other countries, however, early identification of the target audience for retention work, lack of adequate resources and lack of communication between authorities and soldiers can hamper retention system to work efficiently. The retaining military personnel in the Army becomes especially urgent when the number of attrition exceeds the number of recruiting personnel. In order to implement effectively the personnel retention process in the Georgian Defense Forces, a "Personnel Retention Manual" was approved in 2008. It is significant that the guideline was created at a time when the ongoing changes in Georgia were related to the choice of Georgia's strategic partnership, the European and the Euro- Atlantic vector and state system were moving to a

qualitatively new stage. The process of reforming and institutionalizing the system of the Ministry of Defense had begun. Thus, the most important changes that carried out during this period and which was based on the analysis of the problems and challenges of the Defense Forces was the establishment of a retention system of the personnel. A guideline was made up to define: objectives of retention of military personnel, policy, the methodology of data collection of recruitment and attrition.

According to the „Personnel Retention Guideline", the system of retention of Georgian Defense Forces provides timely identification of professional contracted military personnel who may leave their positions after expiring their contract. In accordance with the same guideline, the purpose of retention, as shown in the chart 1, is to select, retrain and fill vacancies with properly qualified personnel to substitute former personnel. Also, based on the information obtained, facilitate the analysis and statistics of the reasons for the attrition of military personnel, identify the deficient specialties and determine the additional motivation needed for the retention [5].
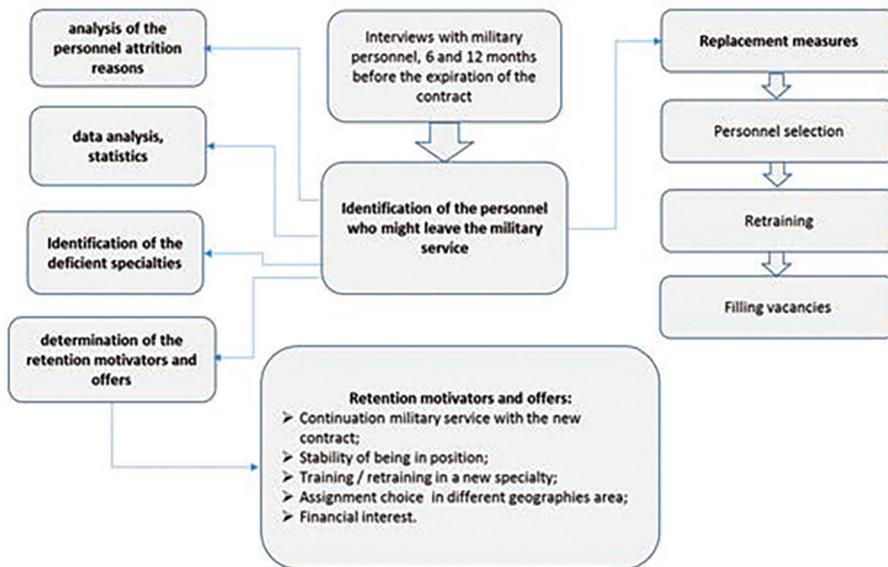
Fig.1 Goals of the process of retaining military personnel

Thus, it is clear that the objectives of the retention guidelines of both countries (The USA and Georgia) are in close agreement with each other in theory, in particular, the main emphasis and efforts are aimed at maintaining the level of readiness of the army, recruiting, selecting and retaining the personnel, supporting training programs and increasing motivation. At the same time, it is important in the theoretical-practical aspect how consistent the mechanisms for the implementation of the set goals are. It should be noted that the practical aspects of the regulation and implementation take an important role in the retention system. In the Georgian Defense Forces the practical part of the process of retaining military personnel is initiated from the General Staff. Twice a year requests are sent in the military units to prepare information on the expiration of military service contracts (quantitative monthly data for the forthcoming year). The list of interviewed personnel is prepared, according to the document officers and sergeants should be selected for the interview, they should be properly instructed about their responsibilities and duties. Then interview is conducted with the military personnel in accordance with the schedule and the list of the military personnel whose contract expires 12 and 6 months in advance, the

special forms are filled in to identify the personnel who does not have a wish to extend the contract. After collecting the certain information in the military units the data is sent to the Personnel Department where the data is collected. The next stage after collecting the data is to review the list and reveal the deficient specialists who will get certain offers according to the "Personnel Retention Guideline". The list of offers is not very extensive. It consists of 5 offers:

A. being interested in prolonging the service contract (one-time financial compensation after a specified period).

B. Stability of being employed on a certain position.

C. training for other specialties.

D. deployment according to the geographical location.

E. Financial interest [5].

Practice reveals that military personnel show little interest in the offers set out in the „Personnel Retention guideline" main requests are on the choice of geographical deployment, however, it is a very small number in comparison with the total attrition, and for the rest of the offers there is almost no demand or just several request precedents in practice. It is noteworthy that the number of military personnel who were officially resigned from the Defense Forces within the deadline (12 and 6 months before the expiration of the contract) is significantly exceeds the number of military personnel who left the Defense Forces at the expiration of their contract. It literary turns out that the target audience with whom the system was supposed to work on retention was not perfectly defined. In order to clarify the issue, the study of internal organizational climate in the military units should be the subject of research, why there is a feeling to restrain military personnel from announcing in advance the desire to terminate the contract. Therefore it can be assumed that the problem is the lack of communication with military personnel, inexperience commanders and personnel working on retention issues (officers, sergeants) or formally non-performing duties imposed on them. Along with the retention of military personnel, the influence of the external factors of the system on the attrition of the personnel is noteworthy. Existing competition in the employment market, labor remuneration rates, demographic situation, etc. should be analyzed. In terms of retention of military personnel the USA experience is interesting, where

retention of military personnel is a functional duty for a specially trained retention NCOs. For this purpose, retention NCOs are assigned to the battalion and high-level units who perform mentioned functions, while in companies and the same size units these functions are specially selected for military service as an additional duty. Responsibilities for additional retention issues are shared by commanders and career counselors. Overall, they are a group working on retention issues.

Working group on retention issues: this is a group of all level commander staff, career advisers, full-time retention sergeants (above the battalion level). Retention sergeants of additional functions (company level). It is recommended that every 100 soldiers have one or more retention sergeants, assigned by the order of chief commanders or by the unit commanders who have additional function. While forming a retention group the objectives are set to formulate the objectives of retaining military personnel and keeping them for further additional service in the army. Setting objectives involves calculating the number of the retained personnel, predicting estimated losses and attrition rate, determining readiness

reduction coefficients, determining the indicators and providing army requirements in terms of manning and replenishment of the military personnel.

While selecting the retention staff several aspects and necessary skills should be taken into account: communication skills, how well they will be able to conduct the interview, conversations with target audience. Group members are required to be familiar with the system, to have up-to date information, to gain knowledge regularly about the system offers to employees and citizens. Group members also should be aware of administrative activities, gathering information, preparing inference and reports, being able to create individual files for interviews and surveys. Special exercises and trainings are provided to the group members in order to carry out their supervisory functions and responsibilities. They are introduced to defined functions, accounting rules and control mechanisms.

Trainings for military personnel is held periodically to enhance, improve and develop their professional level, such as: pre-training institutional, knowledge retention, quarterly training and training based on procedures

developed by the organizational unit. Methods of trainings are the followings: workshops, virtual tutorials, classroom working etc.

While working on the retention issues of the military personnel great attention is paid to the resources used, such as: received documents and regulations, Standard Operating Procedures (SOP), reports on retention analysis, retention materials (files, binders), control of the data of structural units soldiers, contract dates and survey results. Career advisers consult with newly recruited military personnel, informing them of units tasks and programs. As a result of consultation military personnel receives the essential and extensive information on how the army is operated , how to take care of soldiers, is informed about the promotion system, education opportunities, benefits, military school programs, ways of reclassification, designation sequences and other information that allows them to formulate short and long term goals for their military career.

It should be mentioned that the function of career counselors also includes to identify the selection of a military personnel and the designation relevance. Establish a retention-oriented consultation schedule and specify the feasible dismissal period. Design a career development plan for the military personnel, which includes eliminating family and other problems that may hinder career development. After two or three months of service the recurring sessions are held with the military personnel, to help career counselors make sure that the reality, incentives, promises and benefits corresponds to their wishes and expectations. If problems are revealed commanders should help to solve them.

As for the activities for specially trained retention NCOs, they are responsible for enhancing the readiness of the unit. Retention sergeants have a direct relationship (subordination) with unit commanders on matters related to the retention of military personnel. They are required to make recommendations on retaining plan implementation and activities, identify retention problems, and assist managers in making decisions. Organize timely planning of interviews with leaders. They participate in the training process as needed, Assist high ranking sergeants in the implementation and monitoring of „the sponsorship program". Retention sergeants also work in coordination with human

resource management specialists to provide proper and timely completion of contract extension documents. Conversations with soldiers about revealing and solving retention problems are regularly held. All kinds of publications, announcements and other methods are provided by the readiness of the units. Organize monthly, quarterly and annual briefings. As mentioned above, one of the tasks of retention sergeants is to conduct interviews with the soldiers. The purpose of a retention interview is to understand the soldier's intention, to understand the reasons behind the decision. These decision interviews are conducted at the end of military service and are aimed at extending the length of military service of trained (qualified) soldier, offering a variety of options and decision making capabilities. The periodicity of interviews on retention issues and the content of interviews conducted by various members of the retention team, e. g. 365-331 days before the expiration date of the contract, the soldier is interviewed by a retention NCOs to identify the requirements and incentives for retention by the soldier. 330-240 days before the expiration of the contract, the commander of the upper rank conducts an interview

with the soldier, and learns about the soldier's physical condition, weight and height standards, health condition, and incentives. 240-180 days before the expiration of the contract, high-ranking sergeant (commander) conducts an interview with the soldier and informs the motivators, which may support the retention.

In total, at least eight official interviews are conducted with the soldiers, which include a written plan for conducting interviews up to 30 days before the expiration of the contract. As a result, the army forms a continuous intensive chain of retention, communication with soldiers in relation with the commander staff [4].

3. CONCLUSIONS

International experience shows that to maintain modern requirements of the Army, the development, to develop mechanisms for managing the retention and attrition of military personnel, provides an effective retention system. And, its institutional development creates prerequisite for the system to cope with the expected challenges.

It is preferable to select personnel working on the retention of military personnel, to form a group based on their skills, performance

appraisal indicators and ensuring their professional development.

It is recommended to analyze the process of retention of military personnel, both in theoretical and practical aspects. Adequate systemic changes are carried out as needed: structural reorganization, proper delegation of functions. Providing financial, human, information, legal and technological resources.

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TRUST AND COMPETENCY: AN ORGANIZATIONAL PERFORMANCE PERSPECTIVE

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An organization can increase its performance by the optimal use of its resources (human, capital, material, technological) in relation to organizational goals. Even if the goals are set for the organization itself, ultimately these are achieved through the human resources available, in other words the organization depends on the knowledge, skills, abilities and other characteristics of its human resources for achieving its goals. Properly motivated human resources equipped with the right competencies, which are aligned with organizational goals have a decisive effect on the organization's performance. Furthermore, one of the main factors that lead to the achievement of an organizational goal is social cooperation, a characteristic that attests to the capacity to work together. The main driver for this ability is trust, an essential element of social cohesion. Studies (Zand, 1972; Salamon & Robinson, 2008; Searle et al., 2011; Whitney, 1994; Kramer & Tyler, 1996, Davis & Landa, 1999) show trust has both direct and indirect relationship on organizational performance. From this premise, this paper is providing a bird's eye view on the concepts of trust and competency and their impact on organizational performance as the central theme.

Key words: Trust, Organizational performance; competencies; skills; defense organizations.

1. INTRODUCTION

The COVID-19 epidemic has had and continues to have a significant influence on our society and economies. The recent start of the conflict in Ukraine did not help, raising the level of uncertainty and making the road to recovery considerably longer. Organizations around the world had to find creative ways to cope with the new ways of working caused by restrictions and lockdowns. From an organizational standpoint, the management of human resources will be different and will most likely not revert to pre-pandemic standards. This new environment comprising both external and internal factors heavily influencing the actual output of any

organization, gave managers and leaders a tough time in changing the way they worked within their organizations. Few organizations managed to issue guidance on how to manage the situation so managers had to rapidly adapt as circumstances changed, including teams which worked remotely. Many faced a massive task with motivating people to perform while they were dealing with the challenges of working from home while taking care of the children because kinder gardens and schools were closed or even coping with serious illness or deaths within their families. In a survey across more than 10 industries, undertaken by Qualtrics and SAP (March-April 2020), 75% of people felt more socially isolated, 67% of people reported higher stress levels, 57% handled greater anxiety, and 53% felt more emotionally exhausted. Shockingly, nearly 40% said their organization had not even asked them how they had been doing since the pandemic started (R. Smith, 2020).

The management consulting firm Gallup identified pragmatic elements within the COVID-19 strategies and policies from the HRMs of 100 of the world's largest organizations, revealing, in the context of humans going through life about 30 percent rationally and 70 percent emotionally, that the feelings most employees sought were *trust, compassion, stability* and *hope*

(P. Berg, 2020). With organizational performance constantly being in the spotlight in recent decades and human resources questioning how the pandemic and recent conflict will affect their jobs, building trust by not being an erratic leader and prioritizing employee and customer safety will have a decisive effect on critical areas that conform the organization's purpose and contribute to the intended outcomes. Inherently, the goal of the paper is to explore the salience of trust and human resources competencies by providing a brief overview on how they can influence organizational performance.

2. ORGANIZATIONAL PERFORMANCE MANAGEMENT AS A DRIVER AND ENABLER OF HUMAN RESOURCE PERFORMANCE MANAGEMENT

Nowadays the concept of performance is prevalent in almost all spheres of human activity. Although performance is a subjective perception of reality, thus explaining the multitude of reflections on the concept and its measuring instruments (Whooley, 1996, Rolstadas, 1998, Neely, 2002), most definitions of the term underline the idea of outcome, goal achievement, quality and less the aspects of efficiency and effectiveness (Lebas, 1995; Lorino, 1997).

2.1. Path to managing organizational performance

The online Britannica Dictionary defines performance as „*how well someone or something functions, works, etc.; how well someone or something performs*", showing that the term is used to characterize results in certain fields. This might create some confusions of the concept when used alongside the term organization, thus creating the confusion that organizational performance is equivalent to productivity, efficiency, effectiveness, profitability, etc. Didier Noyé believes that performance consists in „*achieving the goals that were given to you in conjunction of enterprise directions*", or simpler put, organizational performance means measuring the actual output against its intended outputs. From this perspective, managing the organizational performance consists in identifying the strategical axes, rendering them into precise objectives, organizing and mobilizing available resources for obtaining those objectives.

In this context, it is important to underline that organizations are different, based on a number of factors related to both organizational goal and the instruments and strategies selected to achieve it. These factors which determine the structure, goals and activities of the organization can be grouped into:

- *External factors* (those which are not under the control of the organization but have an effect on the performance);
- *Internal factors* (those which are under the control of the organization);
- *Individual choice factors* (those individual or group choices that have an impact on the performance of the organization).

Since all of these factors play a major role in shaping an organization's performance, using a methodology where interaction of these factors is tracked and measured in multiple dimensions becomes essential. Using a combination of measures aimed at responding to changes triggered by external factors, aligning available resources and organizational structure while providing focus across the organization can lead to getting outcomes such effectiveness, efficiency, satisfaction or producing organizational performance.

Properly aligning the internal factors that influence the organizational performance, factors over which management and human resources have a certain degree of control, with the organizational goal will define the overall level of performance.

In conclusion, performance management is the use of relevant information on organizational factors to make a positive change in organizational culture, systems and processes, by setting performance goals, allocating and prioritizing resources, adaptation of objectives and sharing results in pursuit of the organizational goal.

The model (Fig. 2) revolves around twelve organizational factors or dimensions:

1. External environment
2. Mission and strategy
3. Leadership
4. Organizational culture
5. Structure
6. Management practices
7. Systems

Fig.1 Graphical representation of organizational performance management influencing factors

2.2. Human resources influence on organizational performance

The Burke-Litwin Model (Burke & Litwin, 1992) provides a framework that argues that all factors should be integrated to a greater or lesser degree, and demonstrates how these factors should be linked causally to achieve a change in performance. Therefore, a change in one will ultimately affect all other factors.

8. Work unit climate
9. Task and individual skills
10. Individual needs and values
11. Motivation
12. Individual and organizational performance
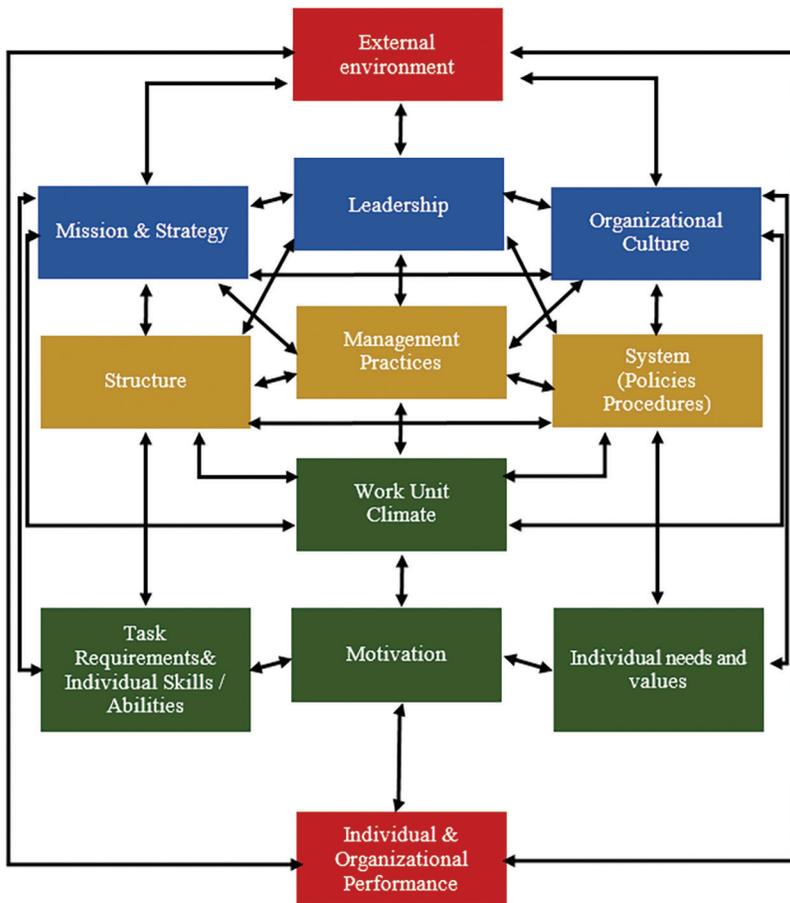
Fig. 2 The Burke-Litwin Model (Burke & Litwin, 1992)

The management of an organization can extensively alter the organization's structure, human resources policies and management practices, the use of its resources, and leadership style to incite changes in performance and can influence to a lesser degree the organizational culture and climate, the motivated conduct and teamwork.

It appears that the internal factors revolve around the Human Resources Management, because the effective use of human resources is of primary importance to the organization's long-term success. Because human resources are the organization and human resources run the processes that accomplish the organizational goal, in the context of all internal and external factors being connected, affecting or interacting with each other, it becomes a necessity that these must be harmoniously managed.

It turns out to be the duty and responsibility of the Human Resources Management (HRM) to obtain both internal and external information and feed it to decision makers leading to achieving the organizational objectives. In a more detailed explanation, we can support that HRM transforms organizational vision, values and missions into system policies and practices in accordance with organizational values by ensuring that people with the required competencies and levels of motivation are available and also by contributing to an organizational environment which stimulates performance, while continuously adjusting to external environment.

3. SKILLS AND COMPETENCY IN PERFORMANCE MANAGEMENT

Similar to the issue stated above regarding the definition of the term performance, there are no certain commonly accepted meaning in practice for the terms of *skills* and *competency*, the terms being used in a way that would suggest they refer to the same thing. While these terms are certainly related, there are important differences of which we should be aware of.

3.1. Untangling definitions

Skills can be considered as specific abilities that an individual possesses. Skills define specific activities that *can be learned* through training or by experience, and range widely in terms of complexity, at varying levels of expertise, sometimes based on years of experience and appointment to a certain role within an organization. Identifying the skills an employee possesses enables a manager to determine if the specific training and experience has prepared that employee for a specific type of a job within the organization. Basically, skills are used in a specific setting in order to reach a predefined desired result, or simpler put, skills are a series of procedural steps used to complete a task on the job. That means skills can be referred to as "*the what*" component of completing a task.

Competency is a broader concept, a bundle of various skills, abilities, knowledge, motivations and attributes (Fig. 3) It could be said that competencies incorporate skills into observable behaviors exercised in order to *effectively perform* de duties of a specific job. Being behaviorally-based ensures an assessment mechanism through measurable behavior. So, competency can be referred to as "*the how*" component of completing a task.

In conclusion, you can hone one's skills through courses or through experience but a combination of skills, knowledge, abilities and behavior will produce measurable results.

Fig. 3 Graphic depiction of competency

3.2. How organizations use competencies

There are several ways that any organization can effectively use well-defined competencies to achieve its goal.

Since we already established that to *successfully* complete a task an employee needs to demonstrate the right combination of skills, knowledge and abilities, we can affirm that human resource managers are provided with valuable tools that can be used at every step of an employee career – from candidate to promotion, through development.

Using competencies within organizations are important for illustrating both how an employee accomplishes its responsibilities in addition to what a person accomplishes, for enhancing employee contribution with the goal of ensuring organizational performance.

The effects of using competencies within organizations are graphically depicted bellow:
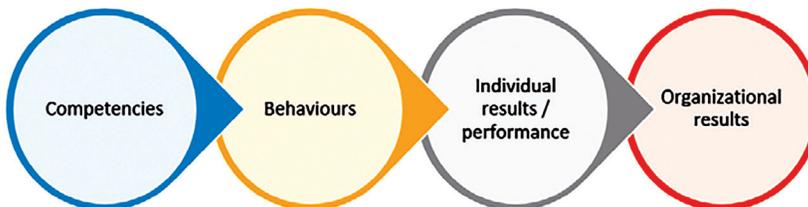

Fig. 4 Effects of using competencies (Beckett, 2018)

Some of the ways that an organization could use competencies are:

- *HR Planning*: adding competencies to job description helps unification of position description across the organization, while focusing on measurable results;

- *Recruitment:* linking interview questions to position competencies enables sourcing candidates who possess the competencies that cannot be developed through organizational training;

- *Appraisals:* using specific behavioral examples enables managers to realize how performance looks like at different levels of proficiency, while the employee can link directly the results with achievement of organizational goals;

- *Career progression:* having competencies mapped for each position within the organization guarantees transparency on which specific combination of skills, knowledge and abilities and at what level are needed for a certain position; it also enables closing competency gaps through tailored training.

"*Research strongly indicates that organizations most successful at employing competencies allocate the greater part of their assets towards aligning competency standards with strategy and integrating them into day-to-day practices*" (Mufti et al., 2011). The statement underlines the need for a comprehensive management,

meaning that competencies that impact organizational performance must be incorporated within talent management, performance management, career development, promotion and succession planning. The challenge becomes more obvious the bigger the organization is and the more rapidly the operating environment changes.

Even so, benefits like ensuring consistency, delivering results, building an organizational culture, empowering employees outmatch the challenges, therefore "*organizations need to seize the opportunity to improve internal continuous learning so as to improve the skills, attitude and behavior of employee towards the discharge of their individual tasks to be able to attain high performance potentiality*" (Osei & Ackah, 2015). Therefore, managing the human resource's performance is the ultimate need of the organization.

In a nutshell, regardless of the size or type of the organization, using competencies can be considered an investment since it will enable higher organizational performance with the ultimate purpose of reaching the organizational goal.

3.3. Organizational trust, management trust and organizational performance

In the introduction we mentioned that the increased uncertainty nowadays and people's

personal concerns about future created an increasing need for trust.

As the aforementioned terms like skill and competency, trust is also a confusing one, many misunderstandings and ambiguities revolving around what it entails. "*Trust is generally defined as the trustor's willingness to be vulnerable to another person (the trustee) based on positive expectations of the trustee*" (Colquitt, Scott & LePine, 2007). From an organizational perspective, *trust* could be defined as the "*willingness of an individual or group to be vulnerable to the actions of others based on the expectation that they will perform a particular important action, irrespective of the ability to monitor or control the performance*" (Mayer, Davis & Schooman, 1995). Both definitions point out two components of trust, a rational and an emotional one, and the fact that trust stretches beyond control, based on some existing norms or bonds.

Trust becomes more relevant when considering relationships, because organizations are built on (Reynolds, 1997) "*four sets of relationships:*
- *vertical relationships between managers and staff;*

- *lateral relationships within and between teams and departments;*
- *relationships with suppliers and other business partners;*
- *relationship with customers*".

Basically, there are three types of conducting a relationship, based on hope, based on power and based on trust. In the first type of conducting a relationship, people are doing things without any outside control or restrictions, hoping for a favorable outcome. In the second one, things are quite the opposite, things are done because there is fear of the consequences. Luckily, in the third way of conducting a relationship, things are done because people want to, not because they hope it will do them good in the end or because they have to. One thing to remember is that in a trust relationship the emphasis is on accountability, not on control.

As an organization is defined as a "*social system that consists of the patterned activities of a number of individuals*" (Katz & Kahn, 1978), it becomes of outmost importance to maintain a positive relationship between its members.

There are numerous studies proving the significant effects trust has for organizations and their

human resources, "*both direct and indirect benefits, such as improved performance, enhanced pro-social behaviors, reduced costs. A direct relationship has been identified between trust and organizational effectiveness, efficiency and performance. Trust has been found to improve organizational performance indirectly by fostering desirable work-related behaviors and creating a more conductive climate for cooperative organizational performance. In addition, trust has been linked to enhanced knowledge sharing and innovation, discretionary behaviors, higher motivation and positive attitudes. […] Thus trust has been connected to positive human behaviors in the workplace that support the achievement of the organization's goals*" (Searle & Skinner, 2011). Therefore, trust has to become a building block in the culture of organization.

Most studies on trust found a strong relationship between organizational trust and management trust, with a noticeable pattern of managers, leaders laying the foundations of organizational trust. It has been observed that employees that trust the management register a higher organizational commitment, which in turn causes them to spend more time and energy completing their tasks on time and at the appropriate levels of requirements, sometimes even engaging in actions that contribute towards achieving the organizational goal, even if it is not their specified role to engage in those activities. Management trust evolves to organizational trust through the generalization of the employees' actions associated with the favorable perceptions of the employee towards the management.

Despite the correlation between management trust and organizational trust, the reciprocity is different, since "*factors such as structure, human resources policies and procedures, and organizational culture would affect employees' perceptions of trust.*" (Paliszkiewicz et al., 2014). This statement leads to the conclusion that lack of trust in the organization results in the impairment of the entire system.

Trust is supported by four principles: competency, transparency, reliability and impartiality. Managing these principles will lead to an extensive control of the organizational factors, as shown in the Burke-Litwin model, creating a joint effort to achieve, and even surpass organizational goals.
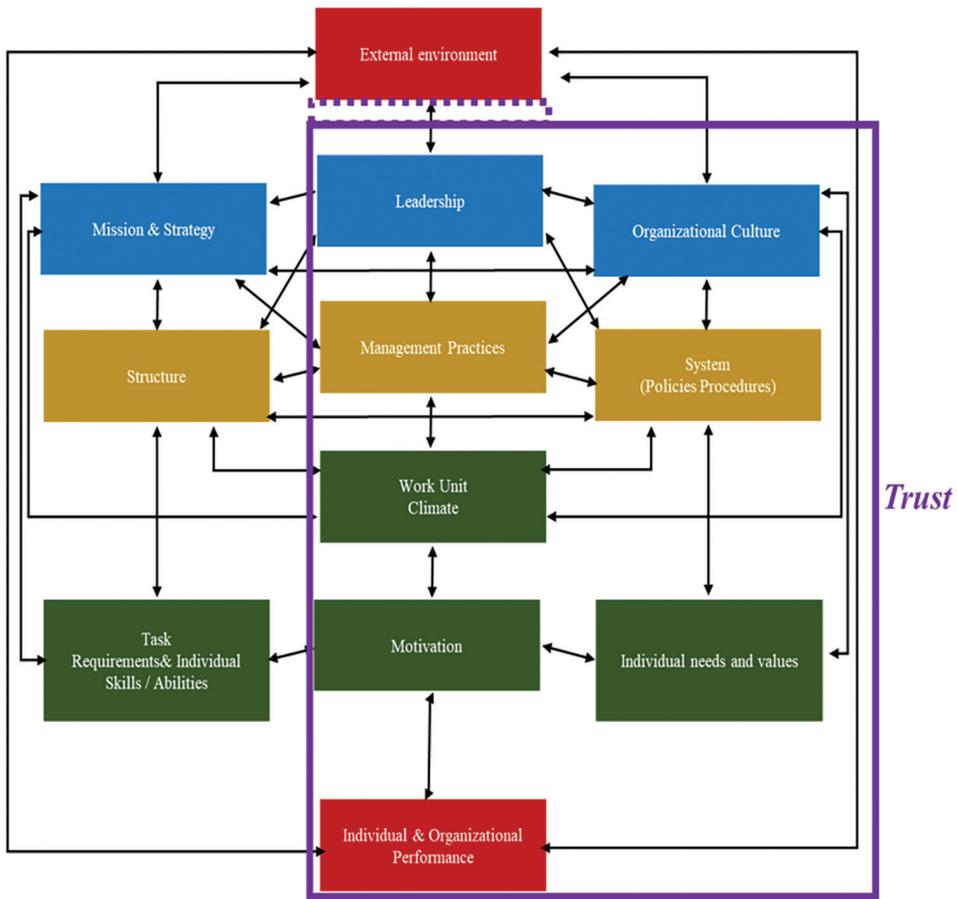
Fig. 5 Trust influence on the Burke-Litwin Model factors

4. TRUST, COMPETENCY AND PERFORMANCE MANAGEMENT IN DEFENSE ORGANIZATIONS

The changes in the international security enabled by the end of the Cold War shed a new light on how to ensure security in an unstable and multipolar world. Defense organizations started adapting its structures, following downsizing, modernization and increased political oversight. This wide approach led to new challenges for the defense sector, including "*the need to do more with fewer resources, the increasing expectations of the stakeholders, a rapidly changing international environment, advances in technology, and the changing expectations*" [1] placed upon an increasingly diverse organization.

4.1. Performance measurement and performance management in defense organizations

There are several ways in increasing organizational performance, based on how extensively the organizational dimensions of the Burke-Litwin model are manipulated, but basically it means finding ways to align the organization's operations with its strategic direction.

It became of increasing importance for defense senior managers to demonstrate that balancing defense capabilities within tight budgetary boundaries has a benefit translated in security terms. The need for transparency in the management of military means, ways and ends, in the context of continuous change of the security environment, increased the importance of performance measurement systems.

Many defense organizations have thus introduced performance measurement systems to support top decision making, but the lack of a comprehensive approach led to failure for some. Most issues revolved around the lack of a performance framework focused of security needs, difficulties in measuring progress in key areas and limited use of performance measurements to support top decisions. Some of the systems in use focus on supporting the reporting of defense performance to stakeholder and less on providing relevant information for decision making.

A performance management survey conducted by the Research Task Group approved by the NATO Research & Technology Board, involving 12 NATO Allies and partners concluded that "*nations with higher levels of military ambition do not use their performance measurement systems for reporting only, but also use the information that comes from these systems for proactive performance management*"[14]. The survey also proposed a Defense Performance Management Framework (DPMF) for strategic-level defense performance management, depicting high-level defense performance categories and possible performance measures for these, using as a benchmark relatively mature performance systems used by participating nations.

In conclusion, the transition from a compliance-based to a performance-based system by developing, implementing and using a system that characterizes the overall strategy of a defense organization, understanding and making use of the performance measures and national strategic objectives, is challenging and time consuming.

4.2. Competencies and performance management in defense organizations

Performance management systems rely on competencies of the human resource, since they measure the performance of employees

while continuously aligning the available resources, system policies and management practices with the priorities dictated by the organizational goal.

The complexity and hierarchical nature of a defense organization, the diversity and distributed nature of the human resource, and the fact that higher level direction is given from above in military organizations (centralized control and decentralized execution) puts an additional pressure on meeting the requirement of being cost-efficient and effective in peacetime, but able to transform with minimum organization to meet a crisis situation.

NATO attempted to develop a common language by categorizing competencies based on occupational areas and provide a framework for use by allied nation, using the current NATO Occupational Area Codes. Non-standardized data across the nations, poor data quality and lack of normalization in data increased the difficulty of the task and led to a categorization of skills and experience levels required in order to be assigned to a specific job or to be promoted. The report concluded "*that skill categories and experience levels are required for having the right personnel at the right place at the right time*"[2].

The nature of defense organizations puts emphasis on competencies focused on creating the conditions for successful outcomes. As stated in the previous chapter, competencies requirement varies depending on position and organization. Nonetheless, a set of crucial competencies need to be established and identified, regardless of the roles, positions and levels that exist in an organization. Moreover, these competencies should be organized in categories relevant for the organization. For example, US Army developed a framework that enables assessing, capturing, recognizing, and translating critical military competencies that others can understand and apply to support readiness, talent management and transition to Soldier for life [3]. Similar competencies frameworks are present at the level of the US Air Force, US Navy, US Coast Guard or even US DoD. This underlines a comprehensive approach on linking the organizational goal and direction down to individual competencies. In exchange, this approach eases the way to achieving the organizational goal in a transparent way, while providing stability and trust.

Clearly the desired competencies evolve as a response to external factors influencing a nation's security concerns. The Romanian Military Strategy 2021 introduces as an objective the development of core competencies through the military educational and training system.

This is an indicator for creating the premises for organizational performance by increasing competence and competitiveness.

The process of adopting clear performance indicators under the name of competencies in a military system is a long-term and difficult endeavor, but even more necessary in the fast-paced changing security environment and future trends.

4.3. Trust in defense organizations

There seems to be a lack of understanding of the factors that influence trust, and the mechanism that underpin organizational trust in a military context, even with trust being a fundamental enabler of military operations (Stouffer, 2008), a strategic advantage to military performance (Steele, 2013). Starting the strategic level, there is a void regarding guidance on how to address the requirements of trust within and between organizations. Only relatively recent studies begin to investigate implications of organizational trust and its implications and applicability to the defense organizations.

An Army White Paper - The Profession of Arms identifies trust as "*clearly the most important attribute we seek for the Army*", underlining that the aspiration of the Army Profession is to develop individuals who trust in one another and in the organizations' ability to serve the Nation, while caring for its people.

A similar approach on trust can be found in the Norwegian Armed Forces Joint Operational Doctrine, where trust is the core of all relations in a military context, and may be considered as the prerequisite for effective *samhandling* (cooperation). Trust is considered essential for effective decentralization, dealing with unplanned events, making the most of competencies, and targeted initiatives and drives, and is described as the main foundation of the Norwegian Army leadership philosophy: Mission command. Mission command highlights leadership through common attitudes and common approach, rather than management through compliance and strict control.

Unfortunately, it becomes pretty obvious that trust is emphasized in military literature mainly in discussions of military leadership, centered on interpersonal relations, as opposed to organizational relations, aside from its multidimensional nature. Even so, it is important to understand the increasing importance of trust in defense organizations and the clear relationship with organizational performance.

5. CONCLUSIONS

Managing a 21st century organization was already complex, given the rapid pace of change and technological advancements. With

the pandemic and recent conflict in Ukraine this has accelerated. For organizations to cope with present challenges and respond to future ones, a number of adjustments on factors that affect organizational performance are needed. These include strategies and measures to develop leadership and management capacity in order to better align individual with organizational goals.

Organizations will greatly benefit if they invest in developing a performance management system based on competencies. The imperatives of speed, stakeholders' expectations and competition must be managed on a constant basis. A well designed and implemented system could clearly emphasize organizational priorities and values, could focus recruiting efforts, could acts as a career progressing tool, could assist in developing job satisfaction while providing data to establish a base of competence and track organizational development. This paper underlined that these outcomes would be rendered possible in the context of trust, which would support such an organizational endeavor.

In defense organizations the approach is rather difficult with limited research being available on trust progression within military organizations and the challenge of incorporating national strategies. In some more mature military organizations that already use a competency-based framework alongside a performance management system it is determined that leadership characteristics shape the culture of trust in organizations and trust can lead to organizational performance. Thus, trust is helping to streamline and more effectively accomplish any given mission. By identifying the external, internal and individual factors it is possible to develop and implement specific strategies in different areas of a defense organization.

ENDNOTES

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[2] Multiple, *NATO Human Resources (Manpower) Management,* NATO Research and Technology Organization, February 2012;

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CONTEMPORARY TRENDS IN THE MANAGEMENT OF HUMAN RESOURCES AND OPPORTUNITIES FOR THE MILITARY SYSTEM

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This paper focuses on the importance of the human resources management in the organization, and certain ways that can improve the access to people as a resource. The premise is that there are certain fields and approaches in the human resource management that are constantly changing and, provided that they adequately adapt, can also improve the management of human resources in the military organization. Nowadays, for this particularly complex resource of any organization, there is a constant competition to have, to attract, to train and retain the most valuable personnel, meaning that even the military organization must find ways to compete with the civilian organizations to have the best people. Adequate human resources management in the military organization should provide well-trained personnel, with high core values and a well-established path in career in order to have balanced attrition rates, leading to mutual benefits.

Key words: human resource management; recruitment; training; retention; attrition; coaching; mentoring.

1. INTRODUCTION

In a highly connected to information world and a global market with easy access, the way the organizations will use their strategic approach to have an effective and efficient management of people, will maximize their employee performance and give them a competitive advantage that will lead to the organization strategic objectives accomplishment.

This is the main reason why the human resource management should keep evolving and adapting their operations and work, to face the new and constant changes from this field.

The last years brought waves of change to the human resource industry, such as the rise of artificial intelligence, the highly dynamic worldwide system that led to economic globalization, the greater diversity of human resource and,

most recently, a global pandemic that has redefined where and how the work can be done.

In this volatile, uncertain, complex and ambiguous world, the human resource management in the army, must become agile and well adapted to the current reality in order to maintain and increase its competitive advantage in the human resource market.

Through this paper I will analyze some of the trends that are influencing the human resource management and ways on how the military organization can adapt to them, in order to shape the future of the military organization human resource.

2. HUMAN RESOURCES MANAGEMENT INSIDE AN ORGANIZATION

2.1. Key features

The period we are living in is a very complex one, characterized by numerous and intense changes in all areas of activity. No matter what materials, how much money or the quantity of the information it uses, the main factor that influences the results of an organization and its most valuable asset is the human resources.

Because modern society is defined by constant changes in technology, the change itself has become the rule of the market, imposing the *adapt (evolve) or die* policy even in the human resource field. Any organization can buy the resource and the know-how in order to achieve its goal but when it comes to the people, the physical and intellectual abilities of this resource is limited. Without having the right people who know *what, when* and *how* to do it, it will be almost impossible for any organization to achieve its goals.

Human resources takes, as specialists decided, the first place at the strategic level of the organization. The fulfilment of the strategic objectives or their non-fulfilment depends, in the end, on the existence of the right people at the right place and at the right time, considering that on the labor market the supply and the demand can have special implications and create special problems. Of course we must keep in mind that no matter how much we use technology and AI in our organizations, the humans will still be important by taking decisions or by programming the machines.

In the management filed the human resources could be called 'personnel', 'people at work', 'manpower', 'staff' or 'employees', and no matter the term, they will represent all the individuals involved in the activities conducted inside the organization, at all of its levels.

The way the people are treated in an organization is part of the human resource management responsibility, from the hiring process, to the understanding of the each personal responsibility, to the payment, personal development and retention, in order to achieve the organization mission and objectives. Because all organizations involve people, they must be able to provide the right employees, pay their services, develop their skills, motivate them for higher levels of development, and ensure that they continue to maintain their attachment to the organization vision, values and objectives.

Human resource management is the strategic approach to the effective and efficient management of people in a company or organization such that they help their business gain a competitive advantage, designed to maximize employee performance in service of an employer's strategic objectives. [1]

So, the human resources management will be responsible for the maximization of human resources capital through its strategies focusing on policies and systems for employee-benefits design, employee recruitment, training and development, performance appraisal, and reward management.

Management of human resources must ensure an attraction, preservation, loyalty and development of highly qualified people in order to provide a competitive advantage necessary for the survival and success of the organization and in order to allow the organization to achieve success.

Having in mind the *adapt or die* dictum, the human resources management will be in the first line regarding the implementation of change, that may be in terms of process, organizational structure, systems and culture among others. Living in the current days, we may say that change is inevitable for any organization, in order to achieve a new status adequate to the new environment that is constantly changing. Human resources are unique in terms of their growth and development, as well as their ability to know and overcome their own limitations, in order to face current and future challenges and transformations. They are valuable, rare, difficult to imitate and relatively irreplaceable (regarding some activities), being the only resources capable of producing and reproducing all the other resources available to an organization. In other words, people represent the active resources of the organization, because their potential, expertise and passion, their initiatives and development contribute decisively to increase the efficiency and effectiveness of organizations, all these making a hard job on the managing strategies of the human resource.

2.2. Practices impacting organizations

In many ways, it can be said that military staffs today are conducting the 21st Century warfare with the 20th Century organizations, based on decision-making processes and principles defined in the 19th century.

Identifying the future human capital requirements will lead to the right education and training approaches for the future and will translate further into education capabilities that need to be adapted/change in order to have an updated human resource policy. Knowing where we want to go could help us understand what paths need to be changed, adapted or developed, and the main actors that can help or contribute to this process.

Accordingly to the non-military approach models, an improvement in the military human resource models should aim to attract the most talented individuals, provide them with proper training, use them efficiently, and support their post-retirement integration into society.

Militaries need military human resource models that flexibly assign careers to increase productivity and efficiency, offer attractive pay scales linked to skills and responsibility, promote mental and physical health, use more flexible recruitment, and ensure proper integration of retirees into civilian life. To be effective, these models should link promotions to performance, encourage and support professional and educational development, allow the militaries to have more control and predictability over their careers, means by which the military human capital will strengthen leading to improving overall force effectiveness, readiness, and performance levels.

Unfortunately at this point, in the Romanian Army as well, the approaches regarding the human resource transformation was done through a set of disparate change-management initiatives rather than as an HR-wide organization development effort. While some human resource policies and practices have been modified with a positive effect, these changes have not been accompanied by an extension of the armed forces' HR's strategic role, by a change in its operating model and structure, or by an important development in its workforce. As a result, the occupational culture remains deeply rooted in the past, in a time when HR was largely process focused and operationally oriented (*what I do*) rather than people and future focused (*what I deliver*). This is why the need regarding a change of the organizational culture (*values, beliefs, and behaviors*) is a constant one, in order to align the organization's strategy with the

current social environment. Because of its top-down, control-oriented management, in the Army can be found the senior leaders that usually *know best about matters of strategic importance and need unilateral control over such matters*, making the change process a little hard. This is one of the reasons why implementing some strategic changes regarding the improvement of the human resource management is hard to do and will require a general consent, before such need becomes a must because of the general situation.

When talking about attracting the right people with right skills for the right jobs, a proper *motivation* should be think in order to compete with other offers from the job market. So the question that arises is what motivates nowadays the people? According to a survey conducted by Deloitte regarding the millennials, suggests that when it comes to retention, the workplace diversity, leader transparency, and well-being is not as important as the pay or financial rewards for the work done in the organizations.

It's not that the culture and social purpose are not important for millennials at work, it means that in order to attract and keep the new generation in our organizations, an intrinsic and extrinsic reward must be taken in consideration, especially after de COVID-19 pandemic. An increased reward flexibility and choice should become more important inside the organizations as a strategy to adapt to the new changing circumstances.

"*While organizations spend untold millions each year to increase efficiency (work done in a way that optimizes resources) and effectiveness (work done in a way that optimizes outcomes), significantly less is typically spent to improve a third factor, employee engagement, which can amplify both dramatically*". [2]

As seen above, in order to have a proper *motivation* that can lead to a good *morale* and *performance,* one important leverage with a great impact still remains the reward for the work done. [3]

However we should keep in mind that after one point, the morale and performance will be affected by other factors that are connected to the social behavior; so as long as the task performed are involving mechanical skills this extrinsic motivation will work very good, for a more cognitive work things will change. For the bottom or top leaders, the intrinsic motivation will be more important from one point, and things like *autonomy* (the urge to direct our own lives), *mastery* (the desire to get better at something that matters) and *purpose* (the yearning to do what we do in the service of something larger than ourselves) will influence the retention of these talents and the results of the organization. [4]

3. MILITARY ORGANIZATIONS AND THEIR SALIENT FEATURES IN THE FIELD OF HUMAN RESOURCE

The main goal of military human resource management is to support the organization to reach its goals, in a close relation with the organizational strategy, with people behavior and characteristics.

The term "human resource management" (HRM) has been accepted by the Military leadership and over time has been integrated into policy and doctrine formerly used to describe the functions of "personnel management" and "personnel administration". Military human resource management is the major component of the overall human resource operations, evolving over time from a supporting role to that of a strategic enabler for the Military. Today's challenges require informed decisions on force structure requirements, recruiting and retention programs, well-being programs, and personnel readiness from both individual and unit perspectives. In order to meet all these challenges and to be able to manage the programs that comprise the functions and integrating systems of the human resource life cycle model, the leaders from this field must possess professional and specialized skills.

Human resource management is a system of systems – manpower system, resource system and personnel system – that performs specific functions. Although they share many of the same duties and daily tasks, between the civilian and the military human resources management, are also some important differences. There are some social values specific to the military's culture, in the military there is more stable job definition, but also a lack of flexibility regarding some job description.

Because of its particularity regarding the training and the specialization requirements, there is a long term impact of the recruitment in the military organization when compared with the non-military organizations. Most of the recruitment is made only for entry level (not for any level) and only after that, there is possible for the people to promote, rank by rank, according to some specific rules. All these particularities are leading to strong requirement for the development of an elaborate and well structured in house training, meaning that without having a good team of professionals working in the Human Resources Department, the organization cannot build performance. The key functions of the human resources team will include among other things, the

recruitment of staff, the training, the performance appraisal and rewards, recognition and employee motivation and communication in the workplace, workplace security, and much more.

The human resource managers will deal with employees during potentially stressful situations and this is why should involves individuals that are highly organized, ethical and skilled at negotiation, conflict resolution and communication, patience, fairness, empathy and firmness.

The human resource-related decisions, can influence both the success and the failure in the military organization, and because of the top down command chain, a poor leadership, could imply a fail on its main mission, meaning that human lives and military equipment will be lost. This is a good reason for the human resource management to consider all the aspects that involves finding the right place for the person (taking in consideration experience, training, skill, potential) in order to capitalize the strengths and fulfil the military organization objectives.

All the military training and all the commanders have the purpose to exploit the qualities, abilities and skills of the personnel in order to push the subordinates towards high standards of performance, raising their level of professional

satisfaction, pushing their limits in order to obtain the best results on the battle field (and *stay alive*).

A lack of judgement that won't involve a human resource management based on gender, religion, physical appearance or other subjective opinions, but a human resource strategy that involves a critical thinking when establishing the job requirements and choosing the right people, is part of a good human resource.

Even if it sounds very easy in theory, in the military organization the organizational goal is a must and that implies placing in certain positions, the people that are able to produce the required results, due to their current or future evolution achieved in time through education, training and personal skill development; in practice however the people will only prove their value and impact on achieving the organization goals during crises or wars, and the results will not be reflected by the KPI's but by human lives.

4. LEVERAGE POINTS FOR THE MANAGEMENT OF HUMAN RESOURCE IN THE 21ST CENTURY

4.1. Recruitment

Every Human Resource Manager does his best to hire exceptional people, who are fit for the job,

because they add the most value to the business and organization.

In the same time, the selective hiring has to be a structured and fair selection process, that reflects legal requirements and internal diversity goals, in order to bring in employees who add value.

In today's digital world, there are a lot of different recruitment tools that can be use to make the right selection, commonly used selection instruments been structured and unstructured interviews, IQ tests, personality assessments, work tests, peer assessments, physical tests, reference checks, etc. These (pre-employment) assessments are used to uncover key candidate characteristics like ability (soft& hard skills for the job), trainability (aptitude to learn and keep developing), liability (how much commitment and enough productive for the job).

Having on the market all these strategies and great tools for recruitment, the military HR doesn't have an easy job, giving the current high operational tempo, the small size of the HR component and the current battle from the job market. To be successful, the military HR should get the most out of human capital by providing a clear career path with an attractive value proposition, an ability to advance based on talent and demonstrated performance, training programs tailored to the chosen career path, and well-defined exit opportunities.

Through a recruitment campaigns, the military wants to attract top talent while communicating a message to the broader population that a military career is appealing and worthwhile. This requires the defense sector to consider how society, particularly schools and universities, perceives it and craft an appealing value proposition to potential recruits based on messages including patriotism, career opportunities, professionalism, adventure, humanitarianism, national values, and camaraderie, all of these using marketing techniques that will engage also the younger and more digitally generations.

Table 1. A comparison outlook on various countries and their recruitment campaigns and specific tools

Country	Top recruitment campaigns message	Tools examples
France [5]	My ***will*** is all terrain my ***future*** is rock solid ***Believe in yourself*** ***Grow together***	Posters, TV, YouTube (46,5 k subscribers - top video 5.4 M), Facebook (886 k)
Germany [6]	***Follow your calling***! Do what really matters! Whether they wear Navy, Army or Air Force uniforms, officers' careers entail ***great responsibility***. This career group also offers ***exciting and multifaceted positions***. [...] And they are more than just „managers in uniform".	Movie like posters and presentations, TV, YouTube channels (653k+ 495 k-top video 12 M/ 4.9 M), Facebook (452 k)
Romania [7]	***Aim high***! ***Be the Best***! If you only want a degree or just a job, ***you can choose any other profession***	Posters, TV, YouTube (46,5 k subscribers - 733k top video), Facebook (664,5 k)
UK [8]	What's the army's ***most powerful weapon***? Failure. You ***fail***. You ***learn***. So you ***win***, when it really matters. Recruiting now and always A career with us offers you ***challenge*** and ***adventure*** that you simply can't find in any other job	Posters, TV, YouTube (172 k subscribers- 5.4 M top video), Facebook (1,7 M)
USA [9]	Discover the career for you and ***opportunities*** you never knew existed The Army ***encourages*** me to ***pursue my dreams*** ***Be all you can be*** Most job training teaches you how to make something. Mine taught me ***what I'm made of***	Posters, TV campaigns, YouTube (228 k subscribers- top video 5 M), social media (5 M)

As seen above, the armies recruitment campaigns have started to use a variety of tools, including experiential marketing, to target young people, women and top talents.

Some of the campaigns included:

- "*America's Army*" video game (U.S. Army financed a video game with $1.5 million);

- *Army Strong* (USA), a campaign (budget of $200 million/year), portrayed joining the army as a commitment to transforming mentally, physically, and emotionally strong recruits into powerful individuals;

- *Virtual Army Experience* (USA), a mobile exhibit event to take people through a controlled mission simulation;

- *Officership* campaign (USA), emphasized the various careers within the army with focus on leadership and career progression in the Army Strong context;

- *This is Belonging* (UK), an integrated campaign to show the friendship and comradely that comes from being part of the armed service;

- *Snowflake* (UK), campaign resulted in the highest number of recruits in ten years by targeting 'self-addicts' and 'binge gamers', showing how every individual has the potential to do something that matters;

- *Army Confidence Lasts a Lifetime* (UK),was designed to show how joining the Army allows young people to build up a sense of self-confidence that lasts longer than short-term pleasures;

- the first-person video and reality TV-style testimonials, the ministry's web series, "*The Recruits*," follows 12 would-be warriors through basic training (Germany);

- "*Dare the army*" (France), a campaign design to show unvarnished the reality of military life and to attract young people and women (for a month, on all screens exclusively and with no recruitment campaign for the police or the fire fighters).

As a particularity, in the military system, together with the recruitment part that is a positive process because it encourages more and more employees to apply, there is also the selection part, that is a negative process as it involves rejection of the unsuitable candidates.

The basic purpose of selection process is to choose the right candidate to fill the various position in the organization through a series of steps by which the candidates are screened for their abilities. Going further, the army has established some basic criteria to select candidates, that will go through specific training and education in order to form and developed the required military skills.

4.2. Training and education

One of the particularity of a successful organization, is that after you attract the human resource, it invests in peoples education in order to form the right skills necessary for the job, and after the require abilities are formed, supporting the people desire to get better at what they do becomes a human resource strategy.

After recruiting the most suitable people, you need to ensure that they remain the frontrunners in their positions. This view has become even more relevant today as the rate at which technology is developing is growing exponentially, and this is why learning and development must become a priority.

Leadership is important in every organization, especially in the Army, influencing the cohesion of the group and even its results, the Army having a great impact on the conducted operations. *Great Leaders are made, not born* is a statement that allows (almost) everyone to take in consideration that the necessary tools to become one, are available for everyone.

Intellectually we might know that leadership can be learned but we don't always feel confident in our abilities, a state of mind that can be changed through tools like mentoring and coaching. Inside the organization, group learning can be used to identify employees with leadership potential, to train future leaders to understand group dynamics or enable leadership team development in order to develop new skills, improve interpersonal communication.

When talking about Army, we know that, as a particularity, the desire is to invest in the developing of leadership capacities early in a soldier's career, by challenging to lead their peers and subordinates at one point or another during their term of service (if there are 2 soldiers in a place, one of them is in command). This is important for the military organization because inside a group there will be always specific roles to conduct an operation, but as an important informal requirement, there will be an inside helpful leader of the internal team structures to support achieving the group objectives.

We must take into consideration that with the exception of the mechanical skills that must be formed mostly by on-the-job learning with the machines or with jobs required technology, other skills and abilities can be formed through some ways adapted to the present times. The reality is that traditional training methods were not keeping up with the fast advancements in the information technology industry and dedicated to expanding e-learning programs. The Pandemic imposed the Human Resource Sector to think and develop new ways to help their

people develop, with topics ranging from time management to leading change and motivating employees.

Even though many companies offered courses to their employees even before the Pandemic, the integration of extensive e-learning leadership development opportunities may offer employees more autonomy to complete classes on their own time and contribute toward an increased understanding of essential leadership principles.

the employers increasingly are investing in skills-specific forms of training, to stay connected to the market requirements, and thanks to the internet, everyone is connected and can learn *anything, anytime, anywhere*.

Learning is becoming increasingly important also for the latest generations, such as the Millennials and Generation Z, according to Gallup [10], younger employees rate learning and personal

Fig. 1 Rate of learning VS the pace of change inside an organization
(https://www.aihr.com/blog/human-resource-best-practices/)

The rate of learning should match the pace of change, because learning has become a way to stay innovative, grow faster, and sustain a competitive advantage.

Taking into consideration the high volatility on the job market,

growth are much more important compared to older generations. Because the next generation of workers is actively looking for development opportunities and sees these as a way to grow in their profession is determine

the organization to offer these opportunities in order prevent higher levels of employee turnover.

In order to respond to this need, a self-directed learning is having a greater role (even if leaders can't grow in isolation), but with the precise purpose to teach soft skills such as communication techniques and strategic thinking (that can later be use in the leadership development).

Some organizations [11] understood the fact that a college degrees is not a proof that the people have the right tools necessary to tackle the jobs requirement, so are either not requiring a college degree [12] or they are looking to shake up the education space by offering new programs designed to encourage the development of in-demand tech skills. Of course in Romania this could be possible as well (in some sectors), but we must take in consideration that the current legislation will compel the organization to pay more for those who have a college degree or more.

The military HR model needs to provide service members with the multitude of new skills and practices upon which military success now depends. By design, this military education and training needs to provide accreditation, to promote career progression and to create a list of desire standardized skills. Among the most important skills should be the ability to use information and communications technology, to manipulate data to navigate complex decisions, technical and business literacy. Of course we should be aware that these are some skills are highly desired and paid by other organizations as well, so for some specific roles the Army should be able to educate/train specialist and determine them through payment or other means of motivation or written obligations, to use their knowledge in the Army (at least for a period of time).

Because the education conducted in the military universities may have outdated or may form unneeded skills the Army can use a mixture of options to build capabilities in critical areas, in addition to using civilian specialists for non-operational demands:

- *Build capabilities by partnering with other militaries and the private sector* by sending military personnel to be educated in other countries that have a well-developed military education or an education system that providing high-quality academic, professional, and vocational training and accreditation,

in connection with the current operational needs and the new human capital model:

- Seek regional or international accreditation for military training courses, so after the graduation of different courses, the personnel will receive postgraduate degree accredited by highly respected institutions;

- Pay for personnel to take external vocational training courses- some countries are ensuring funds study to obtain nationally recognized qualifications relevant to a service member's duties;

- Use digital technology to deliver remote training - trough work-based distance learning programmes can be enable remote military education in business management, engineering management, logistics management, and HR management.

As seen above, one of the most important trend regarding the education is that the people are starting or are determine (even requested) to use more of their soft skills in order to achieve more hard skills, with the support of the organizations, in order to perform at their jobs. Basically the companies ensure that their employs have access to the platforms (anytime and anywhere through e-learning) and

the resources (anything) that allows them to grow, and so through this strategy, the organizations efficiency and effectiveness are growing as well.

A good training cannot be achieved without providing the people with a state of mind characterized by a positive motivation and a strong will. Having these environment set, the military will be able to improve their skills and become true leaders through the military process of training and education.

4.3. Mentoring

The pairing of a senior with leaders who have just taken on a new role can be very effective, especially if your goal is knowledge transfer or succession. Through mentoring, a person with experience, willing to share it, will ensure a smoothly integration in the new position of a lower rank person, a faster development of the abilities and will help maximize their potential. Traditionally, the relationship is between an older employee and a younger one for the purpose of growth and development. However, many other types of mentoring could also proven successful, like peer mentoring, where colleagues mentor each other (help develop

self-awareness, adaptability teamwork, collaboration, verbal communication) and reverse mentoring, where the traditional mentoring relationship is flipped on its head.

Receiving feedback is hard and determining whether or not the person giving the feedback has your best interests in mind can lead to confusion. By having a mentor that gives an objective point of view and is an advocate for your growth and development, you will be empowered to take your career where you want to go. Using an intensive one-on-one tutoring, the purpose of a mentor will be to help the mentee grow as a person and become the best version of himself. A good mentor will have patience and good listening skills, observing what's happening, assessing the path the mentee is on and then guiding the person onto the right track. Mentoring is as much about counselling as it is transferring knowledge and leadership skills for someone less experienced. These conversations with your mentor aren't brutally honest and painful to sit through but seek to shed light on new opportunities and overcome challenges in a way that invites you to take action.

All the interaction between the mentor and the mentee, it will be possible when their relationship is based on a honest self-appraisal and valuable guidance, because after defining goals and creating smaller steps to get there, mentors help focus mentees on what they need to do to advance, but also the mentor will help the mentee to stay on track and be accountable for achieving their goals (the way to measure the success of the mentorship).

Mentorships can also help develop leadership skills such as listening, compassion and giving and receiving feedback, the relationship itself between the two helping develop these skills that can prove essential for career success.

Starting 2020, the Romanian Army, has started to implement a mentorship program at a small scale that was extended in 2021, and again modified in 2022.

The main objectives as stated in the internal regulation were:

- to offer career related support for the lower rank personnel that have just graduated or for the personnel in a new position, to facilitate a faster integration;

- to support the personnel to shape new abilities and behaviors necessary to be able to move to higher positions;

- to help the personnel be aware of the regulations regarding the human resource management and the impact on their personal career

- to allow a synergy between the personal career and the institution need;

- influencing the future leaders by showing them the career perspective and developing their attachment to the military organization;

As seen above, the objectives are diverse, not so measurable and should help to integrate, to form new abilities, maintain awareness and attachment for current and future leaders. The fact that there are no soft skills nominated or some more scalable goals for the mentorship relation, combine with the fact that the mentors are appointed and not recommended by some well established skills, **knowledge** and solid integrity values can lead to a faulty relationship. With the exception of the papers (that need time and energy to be fill in), there are no certain results to this program, the non-SMART objectives giving a lot of freedom just to stick to the papers and not to some real tangible goals. However, the fact that in our traditional army, a new way of supporting the military personnel in order to evolve was stated and is supported by a regulation, can ensure future improvements regarding the role and the goals of the mentorship.

4.4. Coaching

Imagine that you are on a mountain ridge and on the right and left there are steep slopes, climbing to a peak where you desperately want to reach. What should / shouldn't you pay attention to? How much do you allow yourself to let your attention fly to anything but the next step? A professional coach will train you to control your attention for this type of climb.

Since its inception, coaching has been a way to assist individual development, aiming to overcome difficulties or optimize the implementation of a project or behavior. If at first it was aimed at performance sports and actors in the desire to create the perfect synergy within the teams for performance, later it became accessed by a wide range of people who pursued the same thing: overcoming one stage or moving on to another self level.

According to the International Coach Federation, coaching is "a partnership with clients in a creative and challenging process that inspires them to maximize their personal and professional potential."

In the business field, the Coaching process has been implemented quickly, proving to be the easiest strategy to increase

the productivity and efficiency of managers / teams.

Through coaching, the process will focus on future possibilities, not on mistakes made in the past, so this tool is to be use for development and not for the lessons learn from the past.

One of the most important achievements in the coaching process is that during the sessions the coachee becomes more and more confident in his own abilities and more dedicated in terms of his own ideals, the emphasis being on two aspects: *awareness and responsibility*. [13]

Through proper coaching, the coachee gets to discover the right resources, as well as how to access them, but taking into account that there is no "*must*" approach but only strategies and skills that can be approached to gain confidence and independence for the actions pursued.

Giving the fact that in the Army the team work takes to the best result, there is also the *team coaching tool*, that aims to increase its performance by mobilizing and engaging all its members, ensuring the congruence of efforts to achieve unitary objectives. The ability of a team to function and produce results depends not only on the talents and abilities of each

individual that make it up, but also on the way members work together, and the level of achievement of goals, values, goals and responsibilities.

To be able to have someone who really listens to you actively, without judging you and without trying to direct you, still seems to be hard to find around us in someone other than a coach. Due to the major impact it can have on an individual, it is necessary to capitalize on coaching through a rigorous training that will contribute to the creation of skills and abilities in this regard.

5. RETENTION AND ATTRITION AS OPPORTUNITIES FOR TRANSLATING DESIDERATA INTO ACTION

The retention of qualified military personnel is essential to preserve morale and unit readiness, and it will avoid the costs associated with training replacement personnel in essential skills.

Evidence shows that a positive, strengths-based approach to change, makes people and organizations more resilient, builds greater connections between co-workers, and enhances creativity, innovation and retention.

It's fairly unsurprising that members of large, mature, and

successful organizations are more likely to assume that their long-held values and practices are the correct ones. Many companies identify *core values* that guide the direction, actions, and behaviors of the organization.

However, especially for the Millennials, the pay check/financial rewards still remains an important reason that act like a leverage for leaving their current job. As seen in the recruitment part section, the job stability and different reward are actively used in the campaigns conducted to attract new people in the army. Even though most of the recruitment messages are enhancing the Army core, the values and the individual grow that can be attained, some countries understood that Leadership with an empty belly is not possible.

Tough working conditions, disruption in family life and stress and strain due to prolonged deployment in difficult areas are the other contributing factors in making the army "an unattractive career" and ever increasing requests for premature retirements.

In order to retain its personnel, the most used rewards are referring to enlisting bonuses, retention bonuses, salary food, allowance for housing,

clothing, health care system, access to free education, access to zero credit loans, a good working environment with proper conditions and access to advance technology and equipments. By covering the basic human needs, a military can focus on how to do his job at a high level and also how to grow. As seen above, the education system can be also a good tool to keep the personnel, by allowing/supporting them to access different programs in the system or outside. The intrinsic motivation will be determine by the possibility to attend courses, while the extrinsic one can be the commitment to stay in the system after graduation and the return of the cost in case of resigning before the established time. Of course one particular difficulty for many world armies is retaining the information and communications technology specialist, giving the fact that the payment, rewards and freedom offered by the civilian organizations can't be matched by the Army.

Because the human resource management is dynamic, the emergence of coronavirus disease and the accompanying shutdowns of in different sectors altered also the retaining of military personnel, because the high unemployment rate from the private sector was not

in place in the military. It was an unexpected advantage that was, for a short period of time a good way to attract people, but again without having proper measurements to retain them, it can become again just a way of losing specialist and money by the Army.

There is no best tool to retain the military personnel, because every individual has different skills, interests and paths, but having a predictable system with specific milestones could represent a good way to increase the retention.

Assisting the militaries with exit and integration into civilian society represents another way to retain the personnel. Militaries should receive support so they can make a smooth transition from military to civilian life, where they can have other jobs and integrate back into society, allowing the economy to capitalize on the skills they acquired during their service. A designing pensions, retirement benefits, and career transition support should be integrated into a predictable human resource strategy. For those who will be put on reserve status, a support that will include, if necessary, a proper legislation regarding the equivalence between military training and civilian qualifications,

even a career transition partnership with a private company that can act as a bridge between the military and the civilian life (with services including dedicated job-search portal, on-line curriculum vitae builder, workshops, training courses, career consultants and employment fairs).

All these will inquire of course long term strategies and commitment, a greater connection of the institution with the society that must go over the dangerous state of isolation from the military area.

CONCLUSIONS

New technologies, innovations, and globalization are changing the workplace and creating an environment of interdependence, while rapidly evolving organizations are increasing the need for leaders who can successfully navigate their organizations and teams.

Today's leaders are often "trying to implement third-generation strategies through second-generation organizations with first-generation management." This is an apt description of the Army's HR challenges, which exist in part because it reimaging its HR practices without simultaneously reassessing its HR capabilities.

Because in the Army there are people with different thinking patterns, values and behaviors, a real change will be only ready to be implemented after a paradigm change.

In fact, from a design standpoint Army HR is largely unchanged from two decades ago, even though its dedicated professionals are being asked to do different and more complex work in support of completely new organizational and human resource strategies, while Army HR's occupational culture remains quite administratively focused.

The main goal of military HRM is to support the organization to reach its goals, so this is why it should be linked with the organizational strategy, and also with people behavior and characteristics. Based on a long term strategy, specific HRM processes should be developed and implemented in order to make sure that the employees feel good about the organization they work for and add value to the organization

The formation and improvement of these features represent an essential problem of human resources management which, once solved, will lead to the development of a modern and professional military system.

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MICROLEARNING FOR PROFESSIONAL DEVELOPMENT

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Undoubtedly, teaching and learning have taken different forms throughout history. First, they were limited to the hand-in of information from one generation to the next, but in time, schools began to develop and thrive. Nowadays, due to the inordinate number of information that people need at their working place, both teaching and learning are on the verge of a revolution which will probably change education as we know it. However, as this process in underway, it is difficult to predict whether the steps taken now to modernize the educational system are all made in the right direction. Will microcontent and microlearning be the answer to some of the problem in education? If people learn only what is needed and necessary, will this solve the information overload? The aim of this paper is to answer some of these questions by providing a balanced approach regarding the scope, uses and design of microlearning for professional development.

Key words: micro learning, lifelong learning, professional development, microcontent, course design.

1. INTRODUCTION

Nowadays, the amount of information that a modern person would learn in order to function in the fast-changing modern environment combines itself with the permanent need to update knowledge in order to keep abreast to the latest developments in the area of expertise. Still, beyond other educational problems, some questions will normally arise: How can people learn everything they need? How much will they actually use? In case they concentrate only on certain aspects or knowledge, what will happen if they do not see the big picture?

In the last decades, the advancement in information technology and the wide-spread use of Web 2.0 features have resulted in a new generation of people who are digital natives and who are used to thinking in terms of microcontent.

They need instant access to information, are comfortable with parallel processes and multi-tasking, prefer graphics to text, like to function as part of a network rather than on their own and expect quick gratification (Prensky, 2001). Rapid reword means that people spend as little time as possible searching for information and learning it and prefer to have it ready-made.

Actually, social media has this effect on users since it favors the production of texts that rely on condensed information to fit into a format that allows only a small number of words. The popularity of messages on Facebook, Twitter, Instagram, etc. is based entirely on their frugality and on the way in which essential information is provided in a manner that is both simple and engaging. As a result, microcontent becomes an important part of online communication especially because users have less time to concentrate on longer pieces of writing or on searching for information and prefer this type of prefabricated structures.

In this context, education is trying to change the way in which knowledge is provided and, consequently, it becomes more standardized, going through a process in which only certain information is selected and delivered to the learners in the form of educational packages. What is left behind will take other forms that are part of personal learning, lifelong learning and of the quite recent microlearning.

Even if there is not clear when the term *microlearning* was coined, the credit for it goes to RESEARCH STUDIOS AUSTRIA (Behringer, 2013), which defined it as a number of little segments used for learning. It is obvious that learners are fighting a losing battle when it comes to traditional courses because the lack of time and the huge amount of information they need to acquire. Nowadays, even eLearning is considered somehow obsolete when it comes to certain fields that require individuals to permanently keep themselves informed with the latest developments in their area of expertise (Laru & Järvelä, 2013).

It may seem that the time for ubiquitous learning has arrived due to its availability, not only at anyplace and anytime, but also on any kind of device, microlearning becoming thus part of a kind of u-learning where information is provided in bite-sized portions.

Microlearning refers to courses that are designed and taught as part of a contract between one organization or department which needs to train its personnel and another person or entity responsible for the content and delivery of the courses. Still, microlearning may also take a less formal structure in the sense that it can include certain learning activities performed solely by a person and

based on the information coming from different sources outside the framework of a course.

2. THE EPISODIC CHARACTER OF MICROLEARNING

Microlearning courses contain chunks of information that address specific learning needs and are focused on a specific topic, a feature which makes them more suitable and popular for lifelong, personal and corporate learning. They are more flexible than traditional courses, more learner-focused. In traditional/formal courses, learners have to select the knowledge they need from a vast array of information in order to perform a specific task, but in the case of microlearning, the knowledge has already been selected and organized so that it will be easy to use. This way, the teaching-learning process is more reduced, the focus being not on acquiring information, but on using information in order to solve a task. Microlearning is thus more about episodic learning related to specific tasks which involve taking small, but conscious steps with the help of a large variety of technologies and teaching methods (Hug, 2007).

Microlearning is also regarded as connected to personal learning environments due to the fact that it is more or less self-directed and informal, having a simple structure based on elements of microcontent and resources that come from a variety of media, libraries, cloud, blogs, databases, social media, etc.

Microlearning can also be a brief learning experience acquired during some forms of planned and organized training which serve a specific learning goal (Malamed, 2015). Practically, microlearning can be any bundle of knowledge with a single purpose which teachers provide at a certain point even during traditional and eLearning courses. However, the concept refers not to micro-structures of this sort, but to the independent ones that serve a clear, immediate purpose and have a clear outcome while teaching becomes more task-oriented than in other types of courses. As a result, people get training, keep themselves updated, find new opportunities for professional growth and develop skills without losing time.

The popularity of microlearning has increased over the years. From 2004 to 2014, the interest in the topic was only sporadic, however, since then, it has gained momentum due to its practical use. Due to the challenges of the COVID-19 Pandemic, bringing groups of people together has become a problem in many countries since 2020. Actually, from the educational point of view, 2020 marked a turning point in terms of how teaching and learning were perceived.
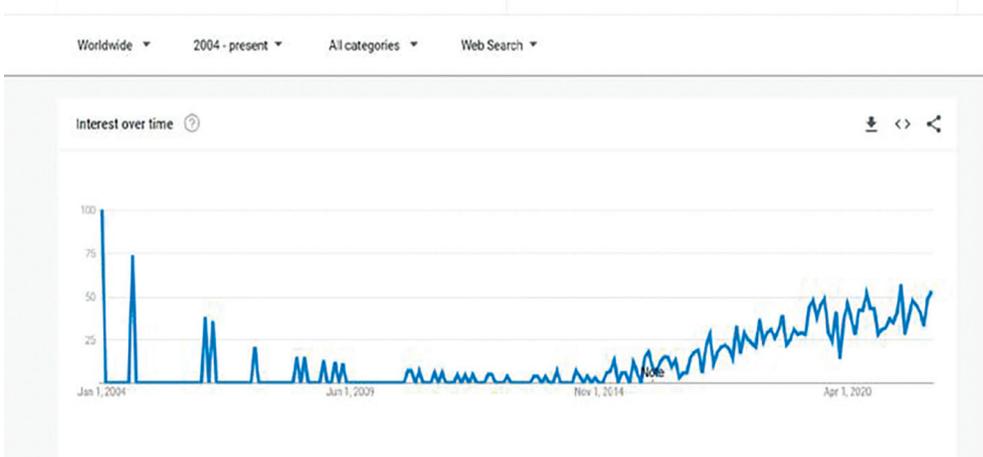
Fig. 1. Google searches for the term microlearning since 2004 until 2020

Under these circumstances, there is even more need to provide training over a short period of time and as a result, the term „microlearning" is now trending, the peak being in April 2020.
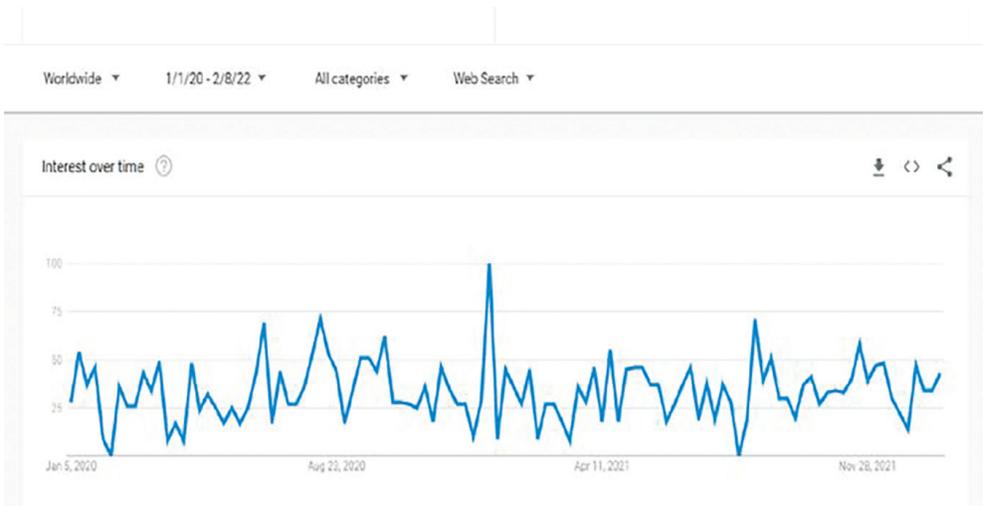

Fig. 2. Search for the term microlearning since 2020
via trends.google.com

Some of the characteristics of microlearning courses are summarized in tables a and b.

Table 1: a. Courses:

Well-structured	Need a logical connection
Self-sufficient	Need no other resources
Intuitive	Easy to navigate
Clear and direct	Easy to understand
Available	Easy to retrieve
Short-term	Easy to attend

Table 2: b. Content:

Simple/single topic	Will be easy to concentrate on
Reusable	Can be organized in different way and form other courses
On-demand	Will be provided only if required
Attractive	Will be interesting to those it is addressed to
Quick response	Can be used to gather quick feedback from learners

3. MICROLEARNING AS A SOLUTION FOR WORKPLACE LEARNING

The focus of nowadays teaching and learning is mainly on the practical, economical use of knowledge and less on other aspects. That is why, microlearning is in theory the answer to the question: How can we provide working people with the exact amount of knowledge they need in a timely manner?

In the business environment, microlearning will be the solution to train the employees while they are also fulfilling their working tasks (Torgerson K., Iannone, S., 2020). Definitely, the information available today is too vast to be learned over a short period of time and, that is why, employees end up learning certain information only when they need it for their daily routines (Mazareanu, E., 2019).

Actually, workplace learning is not an element of novelty for large corporations which use microlearning modules with the purpose of „building employee knowledge, continually reinforcing competencies, providing quick access to information, and even identifying and predicting problems" (Allela et al., 2020, p.285).

In the workplace, if the information is necessary to be used later, employees may learn it, but, most probably, they will store it so that they will be able to access

it without actually memorizing it, relying on external databases available on the Internet or cloud. Most information is actually never learned unless it is part of a recurrent task. What does microlearning do in this case is providing only the exact chunks of information that is likely to be used more often. As a result, most of the time employees may be functional without actually having in-depth understanding of the information they use. Of course, this depends on the type of information, task, etc. because microlearning does not imply necessarily that the learner will not connect the newly acquired knowledge with the previous one.

Microlearning seems to be more suitable for repetitive tasks and for reducing the time in which they will be presented to workers for them to learn and use. The result will be an automatized process in which people perform their tasks without actually knowing other information than the one directly connected to the task itself. In the end, it depends on the learner's choice, dedication, interest in that specific information for it to be remembered later.

Microlearning makes the process more convenient both from the financial and practical point of view as it involves less costs. First of all, a smaller number of classes means a more reduced number of trainers. Secondly, less time spent for learning means more time for

employees to dedicate to their daily tasks. Still, there should be a balance between the content of microlearning and the time employees have to dedicate to learning.

4. DESIGNING MICROLEARNING COURSES

Microlearning seems to be thriving while it is following the global tendency of providing minute information on an as-needed basis. This is actually how social media works, but if one needs more information, one needs to search for it. However, most of the time truncated data is enough to have a glimpse of a certain topic without having, of course, the big picture.

As microlearning seems to be less for in-depth understanding, but more for repetitive tasks, the courses have to be well-designed so as to provide the information needed. The same as for lengthier courses, those with microcontent should take into account both the nature of information and the allocated timeframe. These courses can take different forms, from traditional to blended, synchronous or asynchronous, with the help of a human teacher or without. They can be intended for self-learning, but as they are not comprehensive and are designed solely to focus on certain information/skill, they should be used wisely at the right time, place, and with the right type of learners.

Actually, in the absence of a standard model, people understand different things when they talk about microlearning and that is why the results are also very different. In fact, like any other courses, microlearning ones should take into account the following information:

- Learners: age, prerequisites, needs, expectations, etc.;
- Institution: technology available, timeframe, limitations, etc.

If other types of courses allocate more time to both teaching and learning, the frugality of microlearning may be a challenge in terms of course design. Firstly, learners' needs should be very well identified, because the limited timeframe does not permit to add a lot of elements into the design. If the course has too much information, learners will not be able to accomplish all the tasks and meet the objectives in a short period of time, if information is too little, the necessary skills may not be obtained. Secondly, even if the needs are well-identified, learners might be very different in term of knowledge, learning style, motivation, etc.

The same as traditional courses, microlearning ones should include three main components of course design: objectives, assessments, and instruction.

In addition, according to Theo Hug (2005), the design should take into account the following restrictions:

- Time. It is critical because according to it, the microunits will be designed.
- Content. It should be rather simple, easy to understand, based on preexistent knowledge.
- Curriculum. It should be part of a curricular setting, contain small elements of learning, etc.
- Format. It can be designed in a variety of formats according to learners' and institution's needs and restrictions.
- Process. It could have activities that are independent or integrated
- Mediality. It can be face-to-face, online, blended, etc.
- Learning models. It can include a variety of learning models ranging from reflexive, pragmatic ones to the corporate learning and others.

Another issue is connected to the materials used for the course, their quality and layout, but also to how much information they should include considering that the internet has made readers' attention drop. As a result, such a course should contain selected material packed in a reduced amount of available space.

There are many platforms that provide the tools for designing such courses. They offer the possibility to insert a variety of media into

the course itself, each of them with the purpose of both meeting the objectives and creating a modern and interactive environment. The materials used could be podcasts, videos, texts, infographics, self-check exercises, etc. each of them taking an average of 5 minutes or even less, but also other types of microcontent that could be both interesting and appealing such as memes or custom images that are used to transform knowledge into visual input.

All the above show that microlearning may be very different in terms of length and content according to its purpose. Carla Torgerson and Sue Iannone (2020, pp.8-9) have identified four ways to use microlearning, each of them containing activity ranging from thirty seconds to ten minutes:

- Preparation before a learning event,
- Follow-up to support a learning event,
- Stand-alone training,
- Performance support.

All these elements are meant to provide some guidelines in order to create microlearning courses that have a certain degree of similarity in terms of the design and use. Still, microlearning continues to be extremely diverse in format and use because it is meant to serve not only different learning objectives, but also different types of learners and institutions.

5. CONCLUSIONS

The fast-paced society and the need to learn knowledge and skills in a short period of time have led to the use of microlearning courses. These consist of short and simple courses that contain chunks of information with the purpose of helping learners to improve knowledge, abilities and skills in a timely manner. Moreover, the popularity of microlearning courses with the business sector also comes from the fact that they do not need a long period of time to complete, they are easy to design, and the expenses are kept at a low level.

However, in order to maximize these strong points, the design of these courses has to be conducted with utmost care so that their objectives will be met. Therefore, microlearning has a number of obvious advantages especially for lifelong and professional learning, but it cannot replace the traditional education which will provide the foundation on which any other educational products are based.

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PROPOSALS ON DEFENSE PROGRAM STRUCTURE: THE CASE OF THE MINISTRY OF DEFENSE OF GEORGIA

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Defense organizations absorb large amounts of public resources. The way to improve the effectiveness of the management of defense funds implies the introduction of a performance-based budgeting approach, which links the funding of public sector organizations to the results they deliver. One of the more advanced government-wide performance budgeting systems that uses performance information systematically in the preparation of the government budget is program budgeting, in which expenditures are classified into groups of similar activities or projects (i.e., programs) with common outputs and outcomes. A central issue in good program budgeting is the appropriate definition of programs and other elements of the so-called program hierarchy. This paper overviews the principles and approaches for formulating an effective defense program structure, analyzes the existing program structure of the Ministry of Defense of Georgia, identifies its shortcomings, and suggests ways to improve it.

Key words: program budgeting, results-based program, capability, output, outcome.

1. INTRODUCTION

Improving the efficiency and effectiveness of public expenditure is a priority for the government of any country. The way to achieve this is through the introduction of performance-based budgeting, which links "the funding of public sector organizations to the results they deliver" (Robinson & Last, 2009, p. 2).

Defense is an important part of the public sector, and defense budgeting is a specific instance of public budgeting, which is a specific instance of public policy. Budgets for defense organizations are the means by which large amounts of public funds are allocated.

As Fetterly (2018) noted,

In today's ambiguous international security environment, money is like ammunition – it must be targeted to be used effectively. (p. 4)

The way to provide defense in a more efficient and effective manner implies the introduction of managerial practices, and the implementation of a performance budgeting approach in the defense sector is a significant step in this direction (Bucur-Marcu *et al.*, 2009).

There is not just one model of performance budgeting, but a range of different models, linking funding and results, but in different ways. One of the more advanced government-wide performance budgeting systems that uses performance information systematically in the preparation of the government budget is *program budgeting,* in which expenditures are classified into groups of similar activities or projects (i.e., programs) with common outputs and outcomes, rather than only by economic categories (such as salaries, supplies, etc.) and organizational categories (e.g., ministry and department or agency within the ministry) (Robinson, 2011). Such a classification provides decision-makers with the ability to compare the costs and benefits of alternative expenditure options.

Having a significant defense budget does not guarantee security.

The main question is how efficiently and effectively the funds are allocated for defense.

As Harrison (2014) noted,

In defense [...] the way money is spent often matters as much as the total amount of money available. History is replete with examples of wealthier nations being defeated by more modestly resourced adversaries. (p.41)

The existence of a clear linkage between resource allocation and desired/produced outputs and outcomes is very important for defense decision-makers in order to provide them with the ability to compare the costs and benefits of alternative spending options and choose the most effective ones.

A central issue in good program budgeting is the appropriate definition of programs and other elements of the so-called program hierarchy (the hierarchical structure of program elements that prevails in any given country). Defining programs is the foundation of programming, and the fundamental principle in defining programs is that, to serve their intended purpose, they should be *results-based*, to the maximum possible extent (Robinson, 2013).

2. CONCEPTS

Historically, governments have used so-called incremental "line-item" budgeting that was

constructed under organizational entities. Each organization's budgets were determined only by input components (e.g., wages and salaries, materials and supplies, weapons systems, buildings, etc.), and decisions to increase or decrease the financing of items were made depending on the level of inflation, the expected rate of economic growth or specific policy decisions affecting the role and responsibilities of the organization (Asian Development Bank, 2017).

Since the mid-20th century, governments, especially in the United States, have made efforts to implement program budgeting, largely in response to the need for greater transparency about the purposes for which funds were allocated so that resource allocation decisions can be made with an increased level of information related to the resources required to achieve specific results/outputs (Asian Development Bank, 2017).

According to Robinson (2013),

A program can be defined as a group of different types of output and/or transfer payments that have a common intended outcome together, possibly, with other common characteristics such as a single target group. (p. 14)

PMBOK (2013) proposes another definition of a program, as

A group of related projects, subprograms and program activities managed in a coordinated way to obtain benefits not available from managing them individually. (p. 9)

In the case of the defense ministry, the program structure is a tool for strategic financial and resource management at the top level. Programs tie defense policy and strategy to budgets through the purposefully planned allocation of available resources over a midterm (usually four- to six-year) period. Collectively, resource inputs produce defense (military) *capabilities* (outputs) necessary to achieve national defense policy objectives (outcomes). Defense programs should describe the force in terms that can be quantified by *cost (inputs)* and *capabilities (outputs)* and enable defense leaders to manage both cost and performance. Every defense capability (combat, combat support, or general administrative function) can be considered as a program and, a function of the resources allocated to the program, can be considered as an actual capability (Taliaferro *et al.*, 2017).

Taliaferro *et al.* (2017) defines defense program as

The combination of assets, activities, and services along with the financial inputs they require to produce a capability. (p. 14)

Defense program has a hierarchical structure and includes programs, subprograms, program elements and projects/activities. Military units (brigades, aircraft

squadrons, aircraft carriers, etc.), munitions depots or factories and central headquarters or offices can be seen as examples of specific programs (program elements).

For a better understanding of the definition of the so-called *"results-based"* program that was mentioned above, the fundamental concepts of the *results chain* (so-called "logical framework") should be applied. This framework shows us the sense of the results chain: *inputs* are used in performing *activities* in order to produce *outputs* and thereby achieve or contribute to the achievement of *outcomes* (Robinson, 2011). Figure 1 defines these concepts in relation to
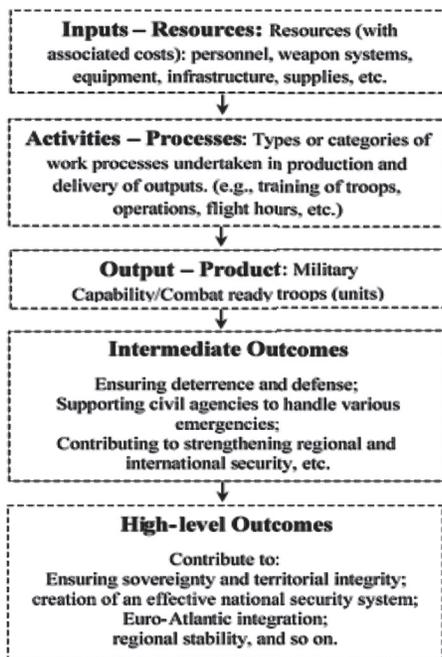
Fig. 1 Key Elements in the Results Chain

the defense sector.

Note. Examples of outcomes are given on the basis of Georgia's National Security and Defense policy documents.

Robinson (2011) suggests limited exceptions to the principle of outcome/output based programs, and these exceptions are driven by purely pragmatic considerations which have nothing to do with the basic objectives of program budgeting. An example of the exception to the principle of outcome/output based programs is the use of support programs (administration programs, corporate services programs, etc.). Such programs group together a ministry's internal support services, and corporate overheads, such as human resource management, internal financial management, centralized procurement, top ministry-wide management, etc. Support programs are not *results-based* programs and, therefore, they are not groups of *outputs* with a common *outcome*. Support programs are services provided to internal clients within the ministry and they contribute indirectly to achieving the outputs and outcomes of several or all of the other results-based (so-called "main") programs (Robinson, 2013).

It should be noted that there is no perfect defense program structure, but typically, it is organized in

several ways: by military service and/or major defense organizations; types of forces (or capabilities); functional areas; major mission areas, or a hybrid structure composed of elements of different approaches. Defining the program structure is a design choice of the defense ministry and the best one must be consistent with the goals of the institution, should take into account the existing culture, limitations and abilities (Taliaferro *et al.,* 2017).

Defense programs and programming processes have some specific features. One of them is (as was mentioned above) the predominant understanding that the main product, or "output", of a defense structure is the military capability it possesses to implement assigned missions (Bucur-Marcu *et al.,* 2009) in support of the achievement of the national defense (military) objectives (outcomes) specified in the National Defense (Military) policy/strategy documents.

Military capability is the ultimate yardstick of national power (Tellis *et al*., 2000). The definition of „capability" differs from country to country.

Australian defense planners define capability as

The capacity or ability to achieve an operational effect. An operational effect may be defined or described in terms of the nature of the effect and of how, when, where and for how long it is produced. (Australian Government, 2014, p.2)

The definition of capability given by the Canadian Ministry of National Defense is

A particular ability that contributes to the production of a desired effect in a given environment within a specified time and the sustainment of the effect for a design period. (Rempel, 2010, p. 1)

The NATO Glossary of Terms and Definitions (edition 2019) describes capability as follows:

The ability to create an effect through employment of an integrated set of aspects categorized as doctrine, organization, training, materiel, leadership development, personnel, facilities, and interoperability. (NSO, 2019, p. 23)

The United States Joint Chiefs of Staff defines capability as

The ability to complete a task or execute a course of action under specified conditions and level of performance. (Joint Chiefs of Staff, 2015, p. GL-7)

To be an output (a product), "capability" must be complete. The United States Joint Military Staff, like NATO, recognizes capability as a function of multiple components. Capability is produced by the integration of these components within a defense sector force element. Figure 2 is the United States' description of the components of capability, known as DOTMLPF, where the "t" implies "that capability exists at a point in time, which is determined by the epoch that defense planners are considering" (Taliaferro et al., 2019, p. 7).

$$CAPABILITY_t = f(D_t, O_t, T_t, M_t, L_t, P_t, F_t)$$

Doctrine:
Concepts
Field Manuals
Tactics
Techniques
Procedures
Regulations
Directives
Instructions
Policies

Organization:
TOE
Force Structure
Organizational
Chart

Training:
Individual
Unit
Basic
Specialized

Materiel and Equipment:
Maintenance levels
Spare Parts
Capital Equipment
Distribution of Supply
Services

Leadership:
Learning
objectives
Information
Policies
Procedures

Personnel:
Type
Number
Benefits

Facilities:
Installations
Property
Infrastructure
Training Areas
Firing Ranges

Note. TOE = table of organization and equipment. Source: Taliaferro et al., 2019
Fig. 2 Capability as a Function of Its Components

As we can see, "capability" is more than just equipment. It implies the combination of people, training, and equipment, across the entire DOTMLPF spectrum. According to the Pentagon (2019), "equipment without properly trained people to operate and maintain it is not a capability" (p. 6).

Tellis *et al.* (2000) note, that

A country may provide its military with generous budgets and large cadres of manpower, but if the military's doctrine is misguided, the training ineffective, the leadership is unschooled or the organization inappropriate, military capability will suffer. (p. 134)

Taliaferro *et al.* (2019) argue, that

Ultimately, force elements embody capability. If a given force element has a proper balance of capability components, it will be capable. If not, there will be a degradation of capability. Capability components must be able to be independently analyzed, described, and managed, and defense planners must understand how they integrate to produce capability within force elements. (p.10)

The definition of the composition of military capability given in How Defense Works (2020) is as follows:

Military Capability is made up of force elements which are generated and combined by the Military Commands to enable the

conduct of an operation or task. The Military Commands generate the force elements at the required level of readiness to deploy when needed. (p.21)

Based on an analysis of the above definitions and descriptions, a more concrete and tangible definition of a capability as the main output of a defense program can be formulated as follows: *The main output of a defense program is Military Capability as a comprehensive force structure consisting of its constituent force elements/capabilities (combat, combat support, combat service support, training, management, command and control) with an integrated set of aspects categorized as doctrine, organization, training, materiel, leadership development, personnel, and facilities, and with an appropriate readiness level assessed at a concrete time.*

3. PROGRAM STRUCTURE OF THE MINISTRY OF DEFENSE (MOD) OF GEORGIA AND ITS MAJOR DEFICIENCIES

After the Budget Code of Georgia was adopted in 2009, to ensure a transparent and effective allocation of resources to the state entities, the Government of Georgia initiated the development of the state budget project in a program format. According to the Budget Code, annual appropriations in the program budgeting format are allocated by priorities and programs/subprograms and the Program Budget covers information on programs and subprograms, their expected outcomes, outputs and performance indicators, along with information on capital projects (Budget Code, 2009, Article 9).

The Georgian government's priority, to provide a transparent and effective distribution of the state budget, represents the main guidelines for the resource management policy in all governmental organizations and in the MOD as well.

Since the preparation of the program budget started in 2012, the program structure of the Ministry of Defense has undergone significant changes and currently consists of 10 programs shown in Table 1 (State Budget for 2021).

Table 1 Defense Programs

Code	Name of program
29 01	Defense Management
29 02	Professional Military Education
29 03	Health & Social Care
29 04	Management, Control, Communication and Computer Systems
29 05	Infrastructure Development
29 06	International Peacekeeping Missions

29 07	Scientific Research and Development of Military Industry
29 08	Development of Defense Capabilities
29 09	Logistics
29 10	Increasing Capability of Georgian Armed Forces (SG)
	Total GEL

Source: https://www.mof.ge/5355

The existing program structure of the MOD makes it difficult to understand the main output, namely types and structure of forces with integrated capability components, generated with the defense budget.

None of the defense programs provide information on the main output or "product" of a defense program - *complete military capability*. Although there are two programs where the capabilities are mentioned (2908 and 2910, see Table 2), judging by their descriptions, purposes, expected outcomes, and the budget allocated for the programs (only "increase in non-financial assets") (State Budget for 2021), it can be assumed that they consist of capital acquisition projects and therefore do not "produce" complete capability but only provide one or two components of capability (materiel/ equipment and possibly facilities).

Program	Actual Performance (by year), in thousand Gel						2021 Plan, in thousand Gel	Forecast, in thousand Gel		
	2015	2016	2017	2018	2019	2020		for 2022	for 2023	for 2024
29 08 - Development of Defense Capabilities				124,550.4	110,837.3	56,884.2	110,000.0	55,000.0	60,000.0	70,000.0
29 10 - Increasing Capability of Georgian Armed Forces (SG)	21,709.9	82,377.8	99,079.5	22,881.1	8,232.6	24,374.8	50,000.0	0,00	0,00	0,00

Table 2 Capability Programs
Source: https://www.mof.ge/5355

It should also be noted that in today's resource-constrained environment, non-material (non-financial) solutions regarding development or enhancement of capabilities are not uncommon and almost always more acceptable to decision-makers, so funding for the mentioned programs will be very volatile, not excluding a complete cut in funding or closing the program due to the completion of the projects. Based on this, it is more reasonable to have force (or force capability) programs/subprograms (e.g., land forces, air defense forces, reserve forces, etc.) that will include all relevant program costs and the corresponding projects that make up programs 2908 and 2910, all the more, as discussed above, the capability can be considered as a function of multiple components (DOTMLPF), as an ability produced by integration of these components within a defense sector force element. The above-mentioned issue of volatility is relevant to the "International Peacekeeping Missions" program (2906) as well.

It is crucial for effective program budgeting that the structure of the defense program provides data for assessing the efficiency and effectiveness of military spending, the amount of resources used in relation to the results (outputs) obtained. Do defense budgets provide decision-makers (politicians, legislators, and policymakers) with the ability to compare the costs and benefits of alternative spending options (different types and structures of forces)? Which options are more effective: larger Land Forces or Air Defense and Aviation or Special Forces? Perhaps replacing active forces with reserves is the best solution?

The program structure of the MOD provides information on *inputs* (assets, activities, finance), internal *support services* (infrastructure, logistics, R&D, communication, etc.) but not on the *main product/ output* of defense – *capabilities,* embodied in the force elements. It contains features of so-called "input budgets", since it does not relate inputs to specific main outputs (e.g. air defense, land forces capabilities, etc.) (Hartley, 2011). Thus, it would be difficult for the defense leaders, the government and the legislature to identify from the existing defense program structure:

What kind and how much defense, [namely, the types and capabilities of the forces, they] are trying to buy with [the defense] budget. (Taliaferro et al., 2017, p. 9)

The existence of a clear linkage between detailed resource allocation and detailed desired/ produced outputs (capabilities) is most important for defense decision-makers in order to provide them with the ability to compare the costs

and benefits of alternative spending options and choose the most effective ones, all the more, there is:

A distinction between the budget available to the Defense Ministry ... [,] the budget released to Parliament [and its published version, which] does not reveal all the information available to the Defense Ministry and the basis for the choices which are reflected in the published version. (Hartley, 2011, p. 12)

In fact, all programs presented in the program structure of the Georgian Ministry of Defense are support programs.

4. PROPOSALS FOR THE DEVELOPMENT OF AN UPDATED DEFENSE PROGRAM STRUCTURE FOR THE MOD OF GEORGIA

The structural units of the MOD, depending on their functions, are integrated into the Civil Office of the Ministry or the Defense Forces of Georgia. As the Law of Georgia on the Defense of Georgia (1997) states,

The competence of the Ministry, the powers of the Minister, the number of his/her deputies and their powers, as well as the structural units of the Ministry and their core competence [are] determined by the regulations of the Ministry, [...] approved by the Government of Georgia. (Article 7)

The Minister approves regulations that determine structure and powers of the Civil Office of the Ministry and of the structural units within Georgian Defense Forces (GDF).

According to the Law of Georgia on the Defense of Georgia (1997), the GDF consists of four types (military service branches): Land Forces, Air Forces, National Guard, and Special Operations Forces. The GDF includes the following structural units: General Staff, Eastern Defense Command, Western Defense Command, Aviation and Air Defense Command, Special Operations Forces, Training and Military Education Command, Force Logistic Support Command, National Guard, Military Police Department, and Military Intelligence Department.

The environment in which the GDF operates requires one *main output - mission-ready forces with a full range of operational capabilities.* The GDF and the Georgian Ministry of Defense as a whole are only successful insofar as they produce such forces.

From the management theory perspective, the GDF can be viewed as an open organizational system with three distinct components: the production subsystem, the combat subsystem, and the integrating subsystem. Each of these components includes tasks that need to be performed, operates in a given environment, and requires and acquires resources.

The primary task, accomplished by the production subsystem, is to convert raw materials into intermediate goods required by the combat subsystem.

Its tasks are to decide what needs to be produced or accomplished by the entire system, and to make sure that the system performs as expected. It also acts as a source of funds for the
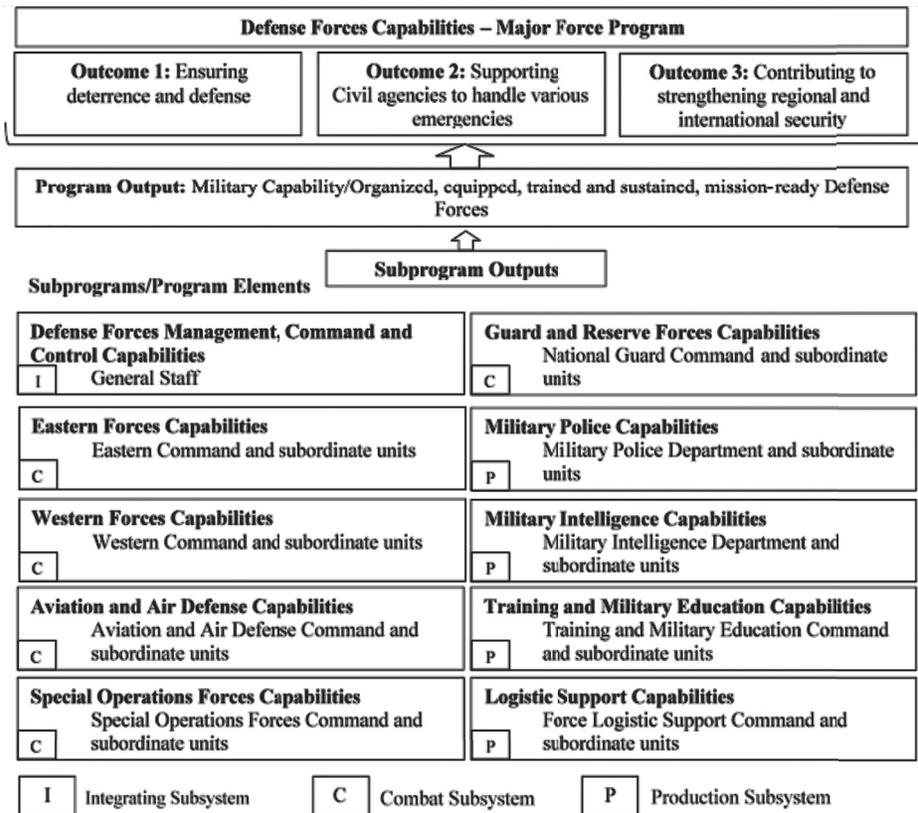

Defense Forces Capabilities – Major Force Program

Outcome 1: Ensuring deterrence and defense

Outcome 2: Supporting Civil agencies to handle various emergencies

Outcome 3: Contributing to strengthening regional and international security

Program Output: Military Capability/Organized, equipped, trained and sustained, mission-ready Defense Forces

Subprogram Outputs

Subprograms/Program Elements

Defense Forces Management, Command and Control Capabilities
I   General Staff

Guard and Reserve Forces Capabilities
National Guard Command and subordinate
C   units

Eastern Forces Capabilities
Eastern Command and subordinate units
C

Military Police Capabilities
Military Police Department and subordinate
P   units

Western Forces Capabilities
Western Command and subordinate units
C

Military Intelligence Capabilities
Military Intelligence Department and
P   subordinate units

Aviation and Air Defense Capabilities
Aviation and Air Defense Command and
C   subordinate units

Training and Military Education Capabilities
Training and Military Education Command
P   and subordinate units

Special Operations Forces Capabilities
Special Operations Forces Command and
C   subordinate units

Logistic Support Capabilities
Force Logistic Support Command and
P   subordinate units

I   Integrating Subsystem   C   Combat Subsystem   P   Production Subsystem

Fig. 3 Sample Major Force Program Structure for the MOD

The main task of the combat subsystem is to transform intermediate products received from the production subsystem into mission-ready forces of units and organizations.

The integrating subsystem connects all the subordinate subsystems of the GDF as a whole.

subsystems, obtaining them from the Ministry of Defense, Government, and Parliament. (1)

As with any part of the public sector, defense budgets should be prepared in line with the sectoral strategy, namely the national security and defense strategy. This includes identifying the needs and

key objectives of the security sector as a whole, as well as the specific objectives/tasks to be assigned to defense forces (Omitoogun & Hutchful, 2006). The outcomes of the defense program should be clearly linked to the defense objectives or tasks articulated in the strategic level documents.

Strategic Defense Review (SDR) for 2021-2025 identifies deterrence and defense, as key national defense objectives, which translates into three major MOD tasks: ensuring deterrence and defense; supporting civil agencies to handle various emergencies; and contributing to strengthening regional and international security. It would be logical to have a Major Force Program in the Defense program structure and define its objectives and outcomes based on the abovementioned national defense objectives and major MOD tasks and then identify as subprograms the force elements/outputs (combat, combat support, combat service support, training, management, command and control force elements) which will enable the GDF to carry out their assigned missions in support of the national defense objectives/ tasks (outcomes) (see Figure 3).

Defense program output - Military Capability - can be viewed as the sum of the capabilities provided by the Defense Forces components.

Anagboso & Spence (2009) note, that:

The Armed Forces require a range of capabilities, from those that are essential for fighting wars to those needed for peace support and humanitarian operations. (p. 49)

In order to do the right things (or to achieve effectiveness), defense policy-makers and decision-makers have to choose and develop the right mix of subprogram (intermediate) outputs to produce the final output of the defense program maximizing their preference value for outcomes, while subprogram managers have to do things right when responsible for producing outputs efficiently (Hanson, 2019).

Structural units not included in the GDF can be combined as subprograms into the Major Support Program, as shown in Figure 4. The program will include the development of overarching and internal policies and strategies; ensuring international cooperation in the field of defense; accountability, internal audit and control; providing effective risk-management and delivering the necessary assurance to the Minister; providing specialized support services to the defense organizations such as education, analysis, commercial, communications, digital, resources, finance, legal, project delivery and security, healthcare and medical capability, infrastructure, and etc.

5. PROGRAM ACCOUNTING AND COSTING

For the successful implementation of program budgeting, it is necessary that the programs be integrated into an accounting system that is compatible with the programs

and makes it possible to track and control budget execution from a programmatic point of view.

Accounting by program requires qualified accounting personnel who can determine the program for which the expenditure is to be recorded in the accounts.

Costs are classified in a number of ways and there are two major and very different aspects to this issue, relating to direct and indirect costs, respectively.

Direct costs can be easily identified within a specific program/subprogram or program element and are, in principle, the "easy" part of the program costing, and all that has to be done is to record them against the correct program or subprogram.

Indirect costs (overheads) are costs that cannot be easily identified with a concrete program/subprogram or program element; thus their allocation is less straightforward. Allocating indirect costs is a management accounting task that, although widely used in the private sector, is usually not part of the government's accounting toolbox. It includes the definition and application of "cost drivers" to allocate costs. A cost driver is a formula or principle that is used to determine the proportions in which overhead costs are shared between two or more programs (or subprograms) to which they contribute. Allocating indirect costs in a fairly accurate way is a complex business that requires not only additional highly qualified accountants, but also more complex IT systems (Robinson, 2011).
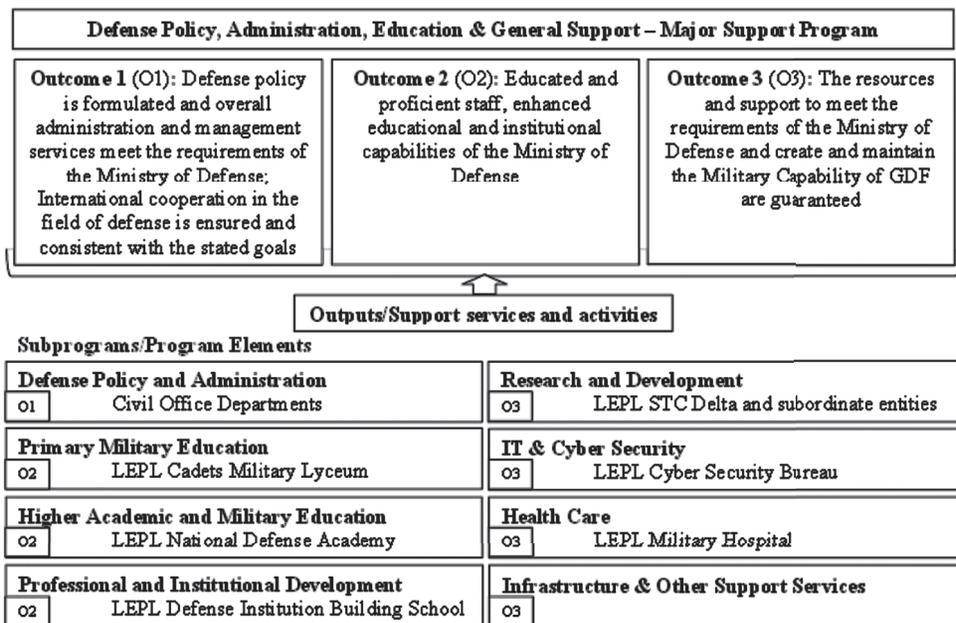

Fig. 4 Sample Major Support Program Structure for the MOD

An important issue for every organization, as well as for the Ministry of Defense, is the definition of cost centers, "the smallest grouping in the organization for which costs are collected separately and usually have a manager (or supervisor) responsible for the budget and performance" (Cleary, 2006, p. 183). Defense forces, for example, may view departments, commands, brigades, and battalions as cost centers, which will also have their own cost centers in the form of structural units.

Effective management of the budgeting and associated processes is impossible without the use of computerized financial management information systems (FMIS), the most basic type of which are computerized accounting systems. Availability of program-friendly FMISs is the key issue for successful implementation of program budgeting in the MOD. Also, one of the most important challenges for the ministry is the introduction of an effective management accounting system to provide program managers with timely, accurate, meaningful and insightful information without which the effective decision-making process is impossible.

It should also be noted that deficiencies in accounting were mentioned in the reports on recent inspections of the Ministry of Defense conducted by the State Audit Office of Georgia.(2)

6. CONCLUSIONS

The introduction of performance-based budgeting is a way to improve the efficiency and effectiveness of public spending, which is a top priority for any government in any country. Defense is an important part of the public sector, and its organizations consume large amounts of public resources. Improving the efficiency and effectiveness of managing defense funds and ensuring a successful defense budgeting process implies introducing a performance-based budgeting approach in the defense sector.

The paper examines the features of the application in the defense sector of one of the forms of performance-based budgeting - program budgeting, and provides a brief overview of the principles and approaches for formulating effective results-based defense budget programs. It examines and analyzes the defense program structure currently in place in the Ministry of Defense of Georgia, identifies its shortcomings, and suggests a sample of an updated defense program structure.

Although there is no perfect defense program structure and defining it is a design choice of the defense ministries, I suggest that the defense program structure must necessarily include Force (or Force Capabilities) programs, which bring together all combat, combat support,

combat service support, training, management, command and control force elements (capabilities) and provide a clear linkage between resources allocated and desired outputs (force elements with integrated capability components) in support of the outcomes, namely national defense (military) objectives specified in the National Defense (Military) policy/strategy documents.

An important issue for the Ministry of Defense is the development of effective computerized financial management information systems (FMIS), including computerized accounting systems, as a key precondition for the successful implementation of program budgeting.

One of the challenges for the ministry is to implement an effective management accounting system to provide program managers with timely, accurate, meaningful and insightful information, without which an effective decision-making process is impossible.

The introduction of the proposed program structure and the identification of program elements (e.g., departments, commands, brigades, and battalions) as cost centers will facilitate the use of various statistical tools to measure the defense program's effectiveness and efficiency and develop proposals for its improvement.

Finally, it should be noted that, based on lessons from international experience, the will of senior resource managers – the Minister of Defense, Deputy Ministers, the Chief of Defense Forces, and Deputy Chiefs - and their commitment to program budgeting principles are critical to the effective application of the program budgeting approach (Bucur-Marcu, 2009).

ENDNOTES

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ASSESSING MILITARY READINESS IN NATIONAL ARMY OF REPUBLIC OF MOLDOVA'S UNITS – METHODS AND CHALLENGES

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Republic of Moldova

In 2021, in the Republic of Moldova anticipated Parliamentary elections, which were won by the pro-European political party "Party Action and Solidarity" were held. After the election of the Moldova's Government, that was formed from the parliamentary majority, the governance program was entitled "Good Times". As a result entire nation is expecting changes in their level of life, expended social benefits, increased salaries and pensions, etc. However the "Good Times" came in not really a good period. Complex and complicated regional situation, energy crises, COVID-19 pandemics, factors that affect directly and indirectly the national security. In times like this, is critical for the country's key decision making authorities and decision makers to understand the undisputed importance of having a ready military force that can step-up in any situation, from providing territorial integrity to helping authorities deal in any emergency situations, but all that requires political maturity, commitment, resources allocation, and a desire to evolve and prosper as a nation.

In 2018, in the Republic of Moldova new National Defense and Military Strategies were ratified by the Parliament and Government respectively. These documents stipulate new threats and a new set of objectives that the National Army must accomplish. However, not even after 30 years of existence and continuous foreign assistance, the common task list for the units in the National Army had not been developed, standards were not properly set, and clear guidance of what is expected from a unit to execute is not quite clear. Finally, considering the continuously evolving operational environment and threats in the region, the existing capabilities in National Army are not sufficient to provide proper protection of the state's sovereignty and its territorial borders. Nor these capabilities exist to conduct the adequate peacekeeping operations in the Transnistrian Region, to support civil authorities in case of emergency, or to participate in multinational peacekeeping operations abroad, being fully interoperable with its strategic partners.

This work provides an overview of relevant strategic documents of the Republic of Moldova, and examples of theoretical approaches on determining/ evaluating readiness status of a military unit/force. The main objective of this

work is to provide the Military Decision Makers with some recommendations on changing the current state of affairs in the field of readiness assessment of the military units. The results should be taken into consideration in order to obtain efficient transformation, a process that has already started in the National Army. With the recommendation exposed in this work, such as: development of mission essential task list, development of national regulation for evaluation of the unit's readiness, development of evaluating criteria, establishment of readiness levels, proper equipping and training along with functional task-organization, and last but not list extend of the social benefits packages for the all personnel working in the Defense Institutions, it is absolutely possible to develop and maintain ready forces to support all national interests.

Key words: readiness, assessment, resource allocation, national interest.

1. INTRODUCTION

Over the years, there have been different definitions for readiness that have changed over time, and have varied in specificity [1], mostly because of the quickly changing environment in which nations are operating and continuously updated national interests that nations establish for them considering increasing effects of the globalization. Nations must maintain its forces continuous readiness status and ensure that they are capable of operating in order to support accomplishments of each national interest. It is essential that required/desired level of readiness is maintained so that the force is capable of serving and defending the nation as well as to justify that the tax money is well spent [2]. The United States of America's DoD officially defines the term *readiness* in Joint Publication 1 (JP 1) as "the ability of military forces to fight and meet the demands of assigned missions" [3], in simple words, the military *readiness* is the military's capacity to engage in combat and fulfil assigned missions and tasks. Therefore it is vital to have means to measure the combat readiness of the military force. This measure should indicate the force capability and status of operability with a continuous feedback in order to improve its activities and processes. To maintain that essential element of sovereignty of any states, it is important that the measure of combat readiness must be comprehensive enough to measure the elements contributing to the combat readiness of the military force [4].

However, considering current environment and predominantly applied joint approach towards states defense and security, the

term *readiness* is not exclusively used by the defense communities. During the past two decades, it has become increasingly common to see the word readiness used as an alternative expression for *preparedness* throughout both the public and private sectors [5], mainly referring to the issues that are related with the national security. As a result of increasing implication of military forces in different activities that are oriented towards supporting central and local authorities, the term *readiness* has largely been used related to the military force's ability to respond in a national emergency situation, natural disaster, or other considerably threatening events. In order to identify the directions that military force has to support, depending on each state's strategic framework, the military are extracting all needed information from a few strategic documents that usually are: National Military Strategy (NMS), National Defense Strategy (NDS), and National Security Strategy (NSS), that refine ultimately the states Military Doctrine and prepare the force for not only maintaining its ab*ility to fight and win*, anywhere, and at any given time, but also to provide the needed support for the entire population in an emergency situation.

According to the USA's DoD, one of the four main pillars that determine the military capability is the readiness, the remaining three being force structure, modernization and sustainability. Obviously readiness and sustainability being the main once and most expensive. All of those four pillars are very important and might form another subject of discussion, while in this work, the main focus will be on readiness. Readiness is achieved through a large variety of means, including and not limited to:

- Training and practice;
- Force structure mix (providing service units to support combat units);
- Mobilization, when necessary;
- Responsive management of available resources in order to meet all required needs [6].

Furthermore, the USA DoD is suggesting a glimpse on readiness through the three main words that define the term readiness, that are: ability, military force and assigned mission [7].

Ability is a clear indicator that some type of measurement must be implemented in order to determine the degree to which military forces can, or cannot, meet the demands of assigned missions.

Military forces is an element that usually refers to military unit or units, a structure that must be clearly identified, because that will ultimately indicate the composition of that force in terms of manpower (service members) and fire power (individual weapons, weapons systems etc.).

Assigned missions are that large variety of tactical and operational tasks that a unit may be tasked to accomplish by its higher authority at the national or international level with its specific limitations in order to support a state national interests.

the assigned missions. The inputs that will form the future ready units are dictated by all existing strategic documents and require all military personnel involved in the planning process to properly evaluate the requirements in order to focus on
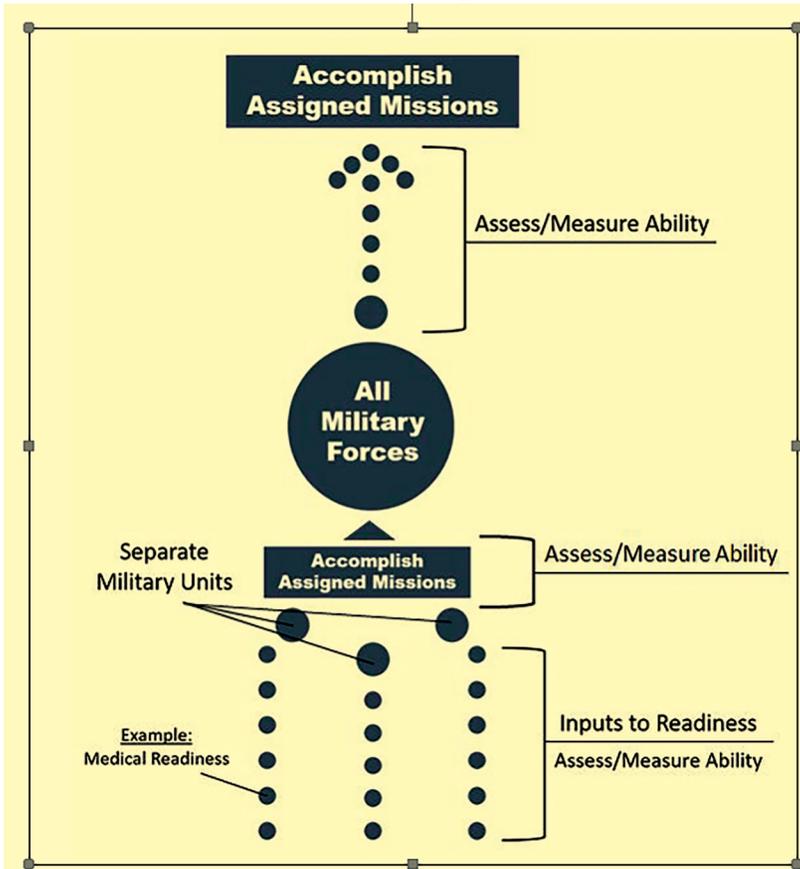
Fig.1 Basic Readiness Framework [8]

Fig.1 provides an easier understanding of what a readiness of the military force consists of, demonstrates a critical need of a self-evaluating models at all levels and the path a unit must undergo in order to become force ready to execute

the correct capabilities that the force must develop, maintain and be ready to perform.

With this particular paper, the author aims to provide relevant information with different points of approach towards the "readiness

evaluation" of the force for the main decision makers from the Main Staff of the National Army of the Republic of Moldova. The paper also strives to provide a relatively accurate assessment on existing differences between the requirements stipulated in the National Strategic Documents the Government commitment towards supporting those requirements and the necessity of developing a lucrative and efficient methodology, which fits the best Moldovan Armed forces, to evaluate the readiness status of the Army units. It could be a capability based approach that would match the national objectives or any other model decided. Therefore, the requirement to provide Moldovan decision makers with a solution that is suitable, feasible, and acceptable, to address the discrepancies in current methodology of evaluating readiness status of the force, is vital. Current points of concern for the Chief of the Main Staff include inappropriate budgeting that results in limited available resources, outdated military doctrine that is not aligned with the National Strategic Documents, outdated and improper military structure that do not foresees special entities that could provide necessary inputs for the main decision makers, and improper use of information, practices, and systems adopted by the National Army of the Republic of

Moldova with respect to its internal structure, level of development and the Government will to actually modernize its Armed forces.

Having stated the purpose, the author is aware of the limited time at his disposal therefore the content of this paper will be based mostly on theoretical findings and his personnel experience and knowledge of the system in which he serves almost for 20 years. To accomplish stated objective, the author will apply a "qualitative research" method through the entire work. The work will primarily focus on meaning, understanding the definitions, limited data collection, and finally inductive and comparative data analysis and results. Predominantly, a qualitative research is rich in description, shows depth of understanding, and is presented as themes or categories. It does not focus on asking "what" event occurred; instead, it focuses on understanding "why" the specific event occurred [9].

2.THE CURRENT STATE OF AFFAIRS

"That is not to say that we can relax our readiness to defend ourselves. Our armament must be adequate to the needs, but our faith is not primarily in these machines of defense but in ourselves."

Chester W. Nimitz

2.1. Evaluating national strategical framework

Before getting to discuss the readiness itself or evaluation of the force/units of a nation, it is required to understand the requirements of developing a specific capability and sustain it to a certain standard being it a national or any other standard which the nation has adopted in order to train, maintain and prepare its forces for the missions stated in its strategic documents. In order to better understand the situation around the Armed Forces of Republic of Moldova and particularly about its National Army, a short analysis of the existing strategic framework which forms the bases for the development of the country is presented below.

The very first strategic document worth mentioning is the National Security Concept (NSC) of the Republic of Moldova, adopted on 29 June 1995 and modified on 22 May 2008, represents the national security priorities of the country. It provides basic national security guidelines, indicates security vulnerabilities and threats, and stipulates the military will be used only for defensive purposes. In the NSC the Armed Forces of RM are viewed only as a means to repel any type of external aggression. At the same time, the NSC is seriously focused on the diplomatic means of national power through the European integration and international cooperation to provide national security, without a specific role the Armed Forces of Republic of Moldova have to assume in order to support all national interests [10]. Finally, the NSC does not provide any directives towards the selection of the means necessary to preserve the national security.

Second strategic document is the National Security Strategy (NSS) was approved by the Parliament of the Republic of Moldova on 15 July 2011. It identifies the national security objectives (ends) and the ways and means needed to achieve them [11] providing very bleared and general definitions in term of expectations as final objectives. In analyzing the current environment and focusing on the possible threats, the strategy does not foresee any substantial threats of foreign aggression towards the RM the main focus being oriented towards the Transnistrian Region "issue". It also considers that existing instabilities across the whole of Europe might directly affect the security of all European countries. Nevertheless, its main objectives are to maintain the national security, security sector reform, and to address the acute necessity of the National Army's modernization, without pointing

towards desired force structure or capabilities that National Army has to develop. As with the NSC, the NSS does not stipulate any means for executing this reform, dos not set any time frames, either through modernization steps or through allocation of funds to conduct the security sector reform.

As current political situation, or nay governing authorities, the strategy of 2011, relies heavily on the international community assistance. Main aspiration being oriented towards continuous cooperation, participation, and support in peacekeeping and humanitarian assistance operations. The international actors such as the United Nations (UN), European Union (EU), Organization for Security and Co-operation in Europe (OSCE), and North Atlantic Treaty Organization (NATO) are mentioned numerous times throughout the entire document, however the level and limits that would delimitate that cooperation and desired effects are not stipulated, main focus being oriented towards continuing the cooperation in order to contribute to maintain peace and security at the regional and global levels [12]. Finally, the NSS provides the base line and guidance for the National Defense Strategy (NDS.)

The NDS is a policy document that provides the basis for national defense planning for all of the state institutions that are involved in providing and supporting the national defense. The last NDS was ratified by the Parliament of the Republic of Moldova on 19 July 2018, a document developed by the Ministry of Defense with the support from all other ministries involved in assuring the state's defense. In accordance with the Point Number 6 of the NDS, among the following national interests, is clearly stated the European Integration vector and contribution to the international security:

1. Assuring state's sovereignty, independence, and unity;

2. Assuring stable and sustainable development of the state;

3. European Integration;

4. Territorial reintegration;

5. Wellbeing and prosperity of the citizens;

6. Participating in providing international security [13].

The NDS provides an accurate analysis of the security environment, which is continuously changing and contains more complex threats, starting in Europe, touching our neighbors Ukraine and finishing in the Middle East. It is important to mention that all of those changes require a significant governmental commitment in order to consolidate all means and provide necessary

support to conduct a meaningful reform and modernization of the entities involved in providing national security, in particularly the National Army of the RM as a main force provider in the country.

Considering the threats and risk-creating factors to the national security such as: the substantial military potential in the Transnistrian Region; the Russian Federation military presence in the Transnistrian Region; instruments of informational propaganda; attacks on critical infrastructure of the Republic of Moldova; cyber-attacks, instability, and conflict in Ukraine; economical provocation, and emergency situations caused by natural disasters, the NDS established the following objectives:

1. Strengthen, develop, and upgrade the capacity of the national defense system to provide adequate response to threats and risks that intend to undermine the national security and defense;

2. Adapt the legal framework to ensure the efficient functioning of the national defense system through an inter-institutional approach and in accordance with the integrated defense planning;

Developing the capabilities needed to meet the commitments made with reference to the international security and stability, as well as on peace consolidation [14].

Even though the objectives are more politically oriented, in the first objective is mentioned the necessity to "strengthen, develop, and upgrade the capacity of the national defense system to provide adequate response to threats and risks".

The NDS also provides the directions, at the national level, that must be undertaken in order to obtain the above mentioned objectives, through: (1) development of military capabilities; (2) development of an efficient mobilization mechanism; (3) parliamentary control; (4) adequate legal framework; (5) strategic communication; (6) consolidation of the national defense capabilities towards an eventual hybrid threat; (7) improvement of the crisis response capabilities; (8) providing security to the existing critical infrastructure; (9) effective border control; (10) standard implementation for the cyber defense capabilities; (11) RM credibility consolidation towards its external partners; (12) military education improvement; and, (13) development of a cooperative relationship with intergovernmental or regional organizations [15], however, the capabilities that have to be strengthened or developed are not listed or specified.

Following the NDS is the Military Strategy (MS) of the RM as the most recent and actual

strategic document, being adopted by the Government of the RM on 03 October 2018 that indicates the direction that Moldovan Armed Forces must undertake in order to achieve its objectives. Besides the accurate description of the threats and risks that Armed Forces could face in order to execute its constitutional predestinations of guaranteeing the sovereignty, independence, unity and territorial integrity of the country along with maintaining its constitutional democracy, the MS indicates the set of missions that Armed Forces must be able to perform:

1) Ensuring national defense by preventing, deterring and repelling threats and military aggressions against the RM;

2) Ensuring participation in international missions/operations;

3) Supporting civilian authorities in emergency and crises-response situations [16].

Furthermore, the MS states in one of its objective, with a specific relation to its military component the necessity of creating the optimal response capacity (capability) of the Armed Forces to the military and hybrid challenges of the existing security environment [17] without mentioning the desired force structure or pointing on specific capabilities that must be strengthen or developed, allowing in this way a lot of space of interpretation for the political opponents of the entire modernization process of the force as part of the Defense Sector Reform and risking its ability of justifying the financial requirements and receiving of much needed and planed funds. Even further, in its explanation of the subject and pointing at some specific tasks that Armed Forces must perform, the MS operates with some generic terms such as: development, consolidation, reorganization, assurance and extension [18], without mentioning any specific capabilities, special equipment or weapon and weapon systems towards which the focus should be oriented.

And continuing through that strategic document, when expected the least, at its end, the force structure component is mentioned. And even here, the requirements and preferences are very generic, pointing only at desired components (land, air and special operations component) and specification of the required structure: fighting units, supporting units, logistical units, and CBRN units [19], without indicating the desired size or level of required operating force. One exception being made with the special operations component, where the size is clearly stated, as one battalion size element.

The last but not lest strategic document, worth mentioning is the Military Doctrine of the Republic of Moldova, adopted on 14 July 1996. The doctrine is mainly focused on the Republic of Moldova's Armed Forces ability to defend the sovereignty and territorial integrity of the state. Considering the fact that RM was barely starting its independent path, the factors of uncertainty and minimal experience in internal state affairs, the document is mainly focused on neutrality of the country and its defense capabilities, as main form of combat for which the Armed Forces should be trained and prepared. The doctrine also considers international military cooperation as the main political and military tool needed to be developed to overcome all existing regional threats [20]. It is important to reiterate the fact that the Military Doctrine has not been amended since 1995 and its provision do not match the current environment and ambitions of the Republic of Moldova.

2.2. The current situation

In the National Army of the RM the J7 Joint Training Direction and Doctrines Directorate, is the entity with a specific mission to ensure the general planning, organization, leadership, monitoring and evaluation of the training process in the National Army and the institutions of the Ministry of Defense [21], arguably, one of the most important directorate of the General Staff of the Moldovan army. However, Considering the Directorate's limited capabilities and lack of qualified personnel during the last decade or so, the proper execution of its mission was almost impossible. As a result, units are trained using different programs that are not standardized across the Army. Different processes such as: Lessons Learned, CCREVAL Format, or Professional Evaluation of the entire personnel of the army, are processes that are copied from partnering countries that are implemented without considering the particularities of the National Army and without necessary time to accustom to the newly adopted processes. The current trend in the National Army is that all infantry brigades are trained in accordance with the existing programs, in use from the late 90s, and some independent units have their own training programs aligned towards NATO or UN cooperation. At the same time, the evaluation process of the readiness of all forces is established to be executed in accordance with the NATO Standardization Agreements (STANAGs). The author, as a former

battalion commander of the 22nd Peacekeeping Battalion, directed his staff multiple times to develop new programs aligned with the NATO STANAGs as a requirement to participate with his sub-units in the Operational Capability Concept, to which Moldova acceded in 2008. A STANAG is a NATO standardization document that specifies the agreement of member nations (or a partner nation) to implement a standard, in whole or in part, with or without reservation, in order to meet an interoperability requirement [22]. As a result, the 22nd Peacekeeping Battalion of the National Army of the RM is the only unit in the Moldovan Army that trains in accordance with the NATO STANAGs and national regulation and obtained for its sub-units certificates of NATO readiness.

Another important fact that needs to be mentioned is the education of the military personnel, especially of the officers that are occupying key decision positions that have been trained in many different countries such as: Romanian, USA, and other NATO countries. This often results in a different approaches to the planning process and its application by the Moldovan officers, because they are trained in different institutions, and finally, due to the lack of the common doctrinal base. As a result: army units are trained differently with different objectives and standards, many field manuals and training materials are written without an adequate level of analysis and research, in some cases, those manuals are adopted without proper assessment and evaluation, and the common understanding of the existing situation do not exist through the entire force. Furthermore, all that creates confusion at the tactical and operational levels. To exemplify the above mentioned point, the author will point out one simple issues such as "planning process": what is the planning process used throughout the Moldovan army? Is it the USA Army's Military Decision Making Process or NATO's Operational Planning Process? That is one of the many questions that needs to be answered before we, as an institution, could go any further.

Among all existing factors is worth mentioning that in Moldovan army, besides the J7 Directorate, no other entity exists in order to facilitate the implementation of any developed materials and also execute a proper control of the implementation process itself. A good example would be the existence in the USA Army of an organization such as Training and Doctrine Command (TRADOC.), obviously adopted to the Moldavan army's needs and established as a

smaller entity that will be able to focus on above mentioned tasks spearing some time and men power for the J7 personnel to better execute its missions, especially considering the limited manning of personnel of the J7 Directorate.

Considering the efforts that Moldovan army has made through the last decade towards the implementation of some aspects of the NATO doctrine, constantly being oriented towards increasing its interoperability with NATO members, there is still long way ahead in order to completely adjust the existing doctrine, fitting it to the current operational environment and national needs; provide adequate and standardized programs across the entire force; adapt or develop national evaluation criteria and standards that would much the national requirements, and conduct proper training in order to support implementations of the national objectives in conjunction with the implication of the desired capability for not only a pure military implication but also in support to the central and local authorities in case of the emergency situation. Creation of an organization such as TRADOC would increase the chances of having a completely useful doctrine that would respond to

the current operational environment, and indicate the ways and means to achieve that, of course having a proper evaluation component that would assure that public funds are wisely spent.

2.3. Summary

This chapter was focused on acquiring necessary information in order to better understand the existing strategic framework existing in the Republic of Moldova and the real situation that unofficially reflects the cruel reality that the Moldovan army is facing, from one side requesting to be treated as an equal and credible partner, having at the same time internal difficulties at Army level that create difficulties promoting a single doctrine and a single concept well trained and executed through the entire force. Different countries at different times can serve as examples of more or less successful transformation of their armies, therefore considering limited economical ability of the Republic of Moldova and its continuous political instability, the author tends to consider that Moldovan Army is still in a transformation process that in order to be completed or finalized, more time, implication and resources are needed.

Decision makers at the Moldovan army's General Staff will have to complete that difficult and costly modernization process, started in 2018, by starting clearly stating the required capabilities and prioritizing them properly, maintaining a balanced approach, in order to obtain the Governmental support, despite the governing political parties, and start implementing those provisions step by step. In doing so, the decision makers have to prioritize the threats, establish a clear position towards the existing Transnistrian Region "frozen" conflict, and consider the importance of the force's ability to have a proper protection, maintain its mobility, and be able to provide sufficient firepower to defend national boundaries in case of an armed conflict. A fact that some of the above mentioned changes will require significant financial investment, have to always be considered, however, to accomplish others, a great financial support is not needed, in any of those cases an imperial ingredient that currently is missing is the Republic of Moldova's Government commitment towards supporting and accomplishing the desired changes.

Considering that RM's strategic documents different years of implementation and their relative correspondence to the current operational environment, they still all provide a solid foundation for the employment of the National Army in order to defend its territorial integrity and support country's sovereignty. However, more clear priorities in terms of military objectives, capabilities, and force structure are still required. There is room for improvement, especially in: determining the basic combat units of the Moldovan Army; specifying required elements (size of the military unit or battle group); determining the units ability of performing the security requirements (are those units capable of: operating independently, conducting combined arms operations, defending the territorial sovereignty, or assisting civilian administrations in case of natural emergency situations?). Those are the main questions that military decision makers need to answer in a short term in order to create a proper basic understanding through the entire force, providing e reference point of where we, as an Army, want to be in the projected future. And when those questions are properly answered, a proper implementation of the modernization process is imperial, otherwise everything will end up being a "good plan" on paper, never executed or implemented.

3. DEFINING CONCEPTUAL APPROACHES TO READINESS MEASUREMENT

Considering the constantly changing operational environment, trending technological progress, and other numerous systematic approaches towards the measurement of the force readiness, in one of its aspects or another, the author considers the most appropriate approach the analysis of the two main categories: one that are oriented towards forces and other oriented towards units.

3.1. Approach oriented towards units

As it could be understood from the headline, the first category addressed by the author, will be the one oriented towards units. In this category, three main methods oriented towards determining the readiness of a unit should be considered, such as:

- *Asset reporting* – one self-explanatory method, basically oriented towards a proper assessment of the resources held by a single unit;

- *Unit modeling* – a system (simulation) that basically translates the information on existing resources into an estimate an affordable weapon systems or mission generation rates;

- *Functional testing* – units evaluation for determining the operational level or deployment status, through multiple exercises and testing systems [23].

First method addressed by the author, will be the *asset reporting method* that is used through all units, focusing not only on operational equipment but also on any other logistical resources. This method allows the units to maintain a continue accountability of all the resources available, facilitates the tracking of any assets in case of distribution, and identifies the assets availability in the entire Army for the J4 Logistical Directorate, in case of an emergency.

In the National Army of the RM, this method is translated into an inventory process and is conducted on a regular bases (twice a year is a mandatory process) and can be conducted in case of an unexpected situation. Those inventory processes are conducted under a strict supervision of the Army's J4 Logistical directorate, that have a main objective a proper accountability of all the resources and evaluation of all resources that are strictly related to the maintenance of the operational level of the units.

It is worth mentioning, that for any of the readiness evaluation methods or procedures, the inevitable

portion of discussion id sustainability, which itself is a very complex and diverse process, that will not be addressed by the author due to the limitation existing and not being able to address al particularities, but could easily consider an interesting toping for a future project.

Second method addressed by the author, will be the *unit modeling method* that is transforming unit inputs into estimates of unit "outputs" [24]. Considering the author background, the references and examples are to be made by referencing infantry units. In this particular case, the base structure will be taken as an infantry battalion, a structure that can be easier understood and digested. So considering that particular method, the "outputs" will not come in number of enemy targets destroyed or enemy troops destroyed in the defense positions or anything else related to the enemy troops. Instead, the method will provide the decision makers with "outputs" such as: number or companies or platoons available, number of special operating teams available to be engaged or dispatched in order to accomplish unit's missions.

This particular method is intensively used especially in the process of mobilization of troops in case of an emergency. The National Army of the RM in its internal plans have provisions and implications for this particular method, however due to its classified implementations, the subject will not be discussed in large details. Nevertheless, it has to be mentioned that this particular method is mostly used in situations when a particular force structure must be generated or created, in case of mobilization, and that requires a significant logistical implication that ultimately will dictate the state of readiness of such a force.

Last but not least method from the so called units approached category, is the *functional testing method* that is general contrast with assets reported and units' actual outputs [25]. That particular method should reflect the ability or capacity of the unit to execute its main and specific tasks and missions. It is important to mention here, that this is the first method that brings to the table also the results of unit's individual and collective training as well as the level of skill and experience presented by its key members. All of this results are ultimately reported to the higher echelons that keep track of the availability of the operational units.

In the National Army of the RM, all that is organized by different programs that are oriented not only

on a unit as an single entity but also on a different components of the unit, such as: headquarters, smaller units, support elements, logistical elements etc. The problem though comes into play in this particular method and is related to the discrepancies existing in the training programs and evaluating programs. An example could be for instance the Training Program for the infantry platoons that is dated by 2011 and is oriented towards obtaining a specific set of skills by the soldiers that are not matched in the modern warfare. At the same time, the evaluating programs are NATO oriented, the last set of programs is dated by 2019 and the requirement for evaluation do not match the training objectives and as a result a friction situation is created between the personnel of the evaluated unit and the evaluating group. Manpower strength of the unit and level on which its personnel is equipped also affects the unit ability to perform some of its tasks and missions, that is another problem in RM, expressed in continuous personnel fluctuation and low level of resource provided to the units.

In addition, even though the National Army of the RM has a Training Center, the pre-deployment evaluation of the units participating in the International Peace Keeping Operation in Kosovo (KFOR) is conducted outside the country, in Germany (twice per year) where Moldovan sub-units are part of the Mission Readiness Exercises and are evaluated by the foreign military personnel and the Army dose not benefit of any feed-back coming from such as exercises being limited to some post-action report filled by the national senior representor that is not necessary a representor of the unit that delegates the troops for the operation. As a result, lack of the inputs and effective lesson-learned process slows the development of the proficiency level of the troops and forces the Army to relay on continuous external assistance in affairs that can be solved internally.

In any of the cases, it is obvious that functional testing tends to focus more on unit training, attempting to understand what people can accomplish with the available resources [26]. That is because the operational performance is directly linked to manpower strength and the level on which the unit is equipped. However, if enough data could be collected and a proper analysis conducted it could have been possible to project a real time needed for the unit to accomplish a specific set of tasks versus focusing on exactly defined time frame in which

the unit must be able to execute its main and specific tasks and missions. Nevertheless, only testing is the most suitable verification, be it theoretical or practical, that can provide unbiased results on the individual's professional level and unit's ability to perform as a single entity under different situation and scenarios.

3.2. Approach oriented towards forces

Even though states with smaller forces do not prefer that approach, some of the major power (USA in particular) are considering the force oriented approach as one of the methods to collect data on resources and units in order to have a clear picture of what is available in case of necessity. It might seem that the below described methods will be more appropriate to describe the sustainment status of the force, author considers necessary mentioning them. The main methods of the force oriented approach discussed are:

- *Stockpile reporting* – manpower reporting and material inventories held to summarize the estimates of how long those can be operational in wartime;

- *Mobilization planning* – represents a set of plans and concepts oriented towards concentrating

the needed number of personnel, equipment and materials or on orienting industrial resources on production of military needs;

- *Deployment planning* – represents a set of plans for moving personnel and materials in different contingency situations;

- *Combat modeling* – represents a war gaming technique, force-on-force, structures, strategies, doctrines and tactics of the enemy forces [27].

The *stockpile reporting method,* is more oriented towards sustainment as it characterizes the sustainability in peace and war time. However it is viewed through the readiness lenses due to the fact that the lack of plans for providing necessary information in peacetime and war can generate serious problems in terms of providing adequate manning and distribution of the existing and required sources. As a result, a simple example can be provided in this case, for instance in the National Army of the RM the standard for the personal supply (class I) for each soldier should be for 24 hours. The operational unit are provided with 3 DOS-es of class I, etc. All those provisions are critical for providing proper functionality of the Army or for its particular units. Each country in its Armed Forces has

its own system of calculating the DOS for each class of supply, depending on the density of the implication and its economical capacity, therefore judging one system or another is improper for such an situation, it is important that such plans exist and are continuously tested.

As mentioned above, this particular method is suited more to evaluate the level of sustainment, but because those two areas are so interdependent, it's impossible not to mention that particular method in evaluating the readiness of the unit. Not being supplied properly, in accordance with the country's national regulation, that force cannot be counted as operational, the troops will be concerned on finding food and water but not on execution of the received mission.

Second method of the force oriented category is the *mobilization planning method* that is the act of assembling and organizing national resources to support national objectives in time of war or other emergency [28]. Speaking about mobilization system of a state requires certain classification level, nevertheless some theoretical issues can be addressed, and to make it more clear the author will divide the subject in mobilization of the force

and industrial mobilization of the state. If the concept of the *Force Mobilization* is self-explanatory and means the Armed forces of the state, or a part of them, are brought to a certain level of alert under which those forces must execute some specific missions in accordance with the national plans. The *Industrial Mobilization of the State* requires a larger implication at a national level, depending on the country, of the Government, Parliament or the President of the country in order to provide the needed materiel and services for the Armed forces.

Furthermore, analyzing the *Force Mobilization* concept, American doctrine provides us with a "total force concept" [29], which basically means that besides the active military components there is also a reserve component that must be incorporated. In case of the RM the total force concept exists and is implemented by the Ministry of Defense through the Army's recruiting centers and all central authorities at local levels. It is worth mentioning that due to the fact that military service in National Army is a mandatory service for all yang men between ages of 18 and 27, at the certain extend that facilitates the readiness level of the reserve, but after

a few years, without proper training the men are forgetting the required skills and the reserve transforms into an extremely costly enterprise that requires a large amount of resources to bring them to a basic skill level. If in some countries the reserve contingent training is conducted on a year-to-year bases in RM this is something note so common. The exercises are planned, but due to the lack of commitment by the RM's Government and not receiving all necessary funds, the National Army itself cannot organize such trainings and events.

The *Industrial Mobilization* is the process that RM cannot afford due to the fact that the country basically dos not produce anything, as a result is relying heavily on the external assistance in case of a contingency. Nevertheless, the existing *Mobilization Plans* are properly reflecting the current situation and as a result other domains of the development of the country alongside the private sector representatives are supporting the Armed forces in a clearly defined way with specific responsibilities being outlined and verified annually, in terms of commitment of a specific equipment or materiel or its substitution.

Next method addressed is the *deployment planning method* that represents a set of activities ranging from the assessing the feasibility of moving forces and their equipment, along with the supply packages, from one point (peaceful area) to another (war zone ore theatre of operations), considering readiness packages and ending with detailed schedules for their movement [30]. It is important to mention here that deployment itself does not address a single iteration, planners must consider the rotation of the units, redeployment operations, sustainment operations for maintaining the troop's readiness while deployed and any other contingencies. And of course national law must permit the actual deployment of the specific unit. In case of the RM the Parliamentary Decree is required if the National Army planes to provide forces to contribute to the international peace and security anywhere around the world. For participation of the Moldovan contingent in KFOR all required legal aspects are addressed, and as a result Moldovan soldiers are part of that particular mission since 2014.

Final method of the force oriented category worth mentioning is the *combat modeling method* that is a method usually used in situation

to consider effects of al alternative strategy and force structure in relation to known hypothetical enemy strategy and its force structure [31]. It could be in reality anything from the documented map-oriented sketch to a software that should consider: territorial changes (over time), cumulative casualties (for each side), and the remaining force (for each side at different timing), all that required to have a more proper projection of the own fore against enemy's strategy and estimated force structure. To be able to execute a combat modeling huge financial sources are required, as a result smaller states are not ready yet to allocate resources for development and implementation of that method due to the fact that their focus is currently oriented towards modernization of the Armed forces and reforming the entire defense sector in some cases.

However, it is worth mentioning that this particular method offers important advantages in developing own strategies by establishing own requirements and estimating outcomes, or even predicting the result of an armed conflict. Such a method provides also information with respect to a specific location, operational scale and magnitude and of course establish own forces readiness level and sustainability

volume. Even if the process requires a lot of data, assumptions, activities, and analysis the results are what matters, and those results could easily become the game changer in a course of an armed conflict.

Considering the efficiency of some of those methods it is important to mention them all, and when it comes to their implementation, each country should adopt its own system based on national needs and interests and develop its own methods in approaching the force readiness. All of the above methods are particularly suited for a specific situation, some more relevant to the peace time some to war time, but one thing should be cleared that all of them will require a proper logistical support, otherwise the readiness by itself col not be measured.

3.3. Quantitative and qualitative approach on determining combat readiness

As mentioned at the beginning of this work by the author, there are many different definitions for the combat readiness. As a result, currently, different states have different interpretations and connotations on measuring combat readiness. Furthermore, the instruments to evaluate and

measure the readiness of a unit are not standardized, and are generally agreed by each military organization separately. As a result in today's modern era, persist a lot of difficulties that resulted from different conceptualization approaches on measuring the combat readiness in different military forces, which create a huge impediment towards achieving interoperability.

In any Armed forces, exists a well-established reporting system that is used to monitor the combat readiness status of a military force. Usually, the Main Staff or the General Staff of the Army requires its units and sub-units, periodically, to submit their readiness status reports. These reports are compiled and analyzed to provide a clear picture of the standings of that particular unit or sub-unit. Most of the time, those reports contain information with all achievements of the unit. Therefore, those reports are critical in obtaining adequate and accurate information in understanding the level of the unit's combat readiness. The continuous monitoring of the readiness level allow the military force to monitor its status of combat readiness and its ability for deployment. At the same time, the units that are having difficulties in

obtaining their operational level and maintaining their readiness status are easier to identify and any apparent issues are in-time properly addressed. Nowadays, in order to measure the readiness status of a unit, most Armies are utilizing either quantitative (a numerical data for tangible elements) or qualitative (e verbal description of intangible elements) models. However, a model that would incorporate both of this approaches, that would depict the overall combat readiness status of the military force, do not exist.

The argument begins with the idea that measures of any of the military capabilities are unlikely to be the key for assessing combat readiness because existing and operable assets do not provide the information with the respect to the personnel readiness for combat that involves deployment desire and a will to fight [32].

To better understand that, an explanation on what are the quantitative or tangible variables is needed. Therefore, anything that can be numbered, or appreciated by a scale, tends to feet under the quantitative umbrella, such are:
- Number of personnel available;
- Communication assets;

- Mobility assets;
- Logistical capabilities;
- Number of weapons and weapons system available;
- Number of training activities, etc.

Some of the above mentioned variables can indicate the availability of resources, or can indicate that a particular dimension of a specific capability is ready in terms of the mathematical approach, by distributing the number of existing assets to the personnel available. However, all those variables are not presenting any clear indicators on the fact that the personnel is willing to engage in combat. Subsequently, in play are coming some of the key intangible variables such as *morale* and *intelligence*. As a prove point could be the historical case of inferior numerically Israeli Force that defeated a larger opponents during the Middle-East wars in the 1960s and 1970s, showing great knowledge of the military profession and a great spirit in defending its territorial integrity. Some other intangible variables that should be considered are:

- Quality of life (salary, housing, other social benefits);
- Health and personal safety;
- Family life;

- Relation with superiors, subordinates and colleagues;
- Neighborhood community;
- Work environment and career development [33].

Having discussed about both tangible and intangible elements, clearly that in any Armed forces, the tangible evaluation supported with the quantitative approach is more emphasized rather than intangible evaluation. Especially if the country is in the development process, by itself, focusing too much on its Armed forces with the respect to providing an adequate social services is very difficult.

3.4. A frame for an integrated assessment approach

As already discussed, the approach that a state can adopt depends on its national needs and interests, therefore Armed forces in implementing one or another approach are omitting some important variables that define the combat readiness of a unit. As a result, an integrated approach would probably solve all the existing problems. In order to lean towards the integrated approach, the decision makers must agree upon the fact that each of the approaches have their strengths and weaknesses.

For example: the units oriented approach is focusing more on conducting an inventory of the assets rather focusing more on training and obtaining operationalization of the units, the force oriented model is focusing more on number of units rather on some specific and critical capabilities that could determine the results of an engagement, the quantitative and qualitative approach is also focusing a lot on numerical statistics rather on providing clear guidance's on development and implementation of some policies that would support the intangible variables, etc. The examples are many and the point here is to have an agreement that using only one or another approach could not provide an accurate information on available number of ready units for national interests' implementation. The author supports the idea that some ways in linking those methods should be adopted by ach state separately. The reason for that is that in some countries the applied methodology works very well and provides result, regardless of its fractioned approach, to obtain that through the years, countries established a variety of functional entities that work do deliver the desired results and of course huge resources are allocated to support

such mechanisms. On the other side, there are countries that have limited capabilities in fully implementing one method or another, therefore, from the beginning those countries should develop their personalized integrated approach based on:

- National interests;
- National ambitions;
- National resources;
- National Military Doctrines.

Considering all of the above and the ability to provide estimates could project the medium and long terms objectives, predict a nation's role at the regional or global levels and could provide an adequate information for the decision makers in order to understand the size of the military force that needs to be brought to its operational level and maintains its readiness status as long as it is dictated by the national interests.

3.5. Summary

This chapter was focused on providing general information on the existing methodology in evaluating force readiness with a focus on one or another capability that could determine the readiness of a unit. It is important to understand that today do not exist a correct or wrong answer or a policy that would answer

all the questions related to readiness, and each state should adopt its own strategy in establishing the criteria by which they want to evaluate the readiness of its forces.

Decision makers at the Moldovan army's General Staff will have to adopt a system that will be suitable for National Army of the RM taking into consideration all particularities such as: very general national interests that are not providing a clear understanding of the direction country is willing to follow, constantly changing operational environment in the region, continuous political instability, low level of the quality of life, the military level of
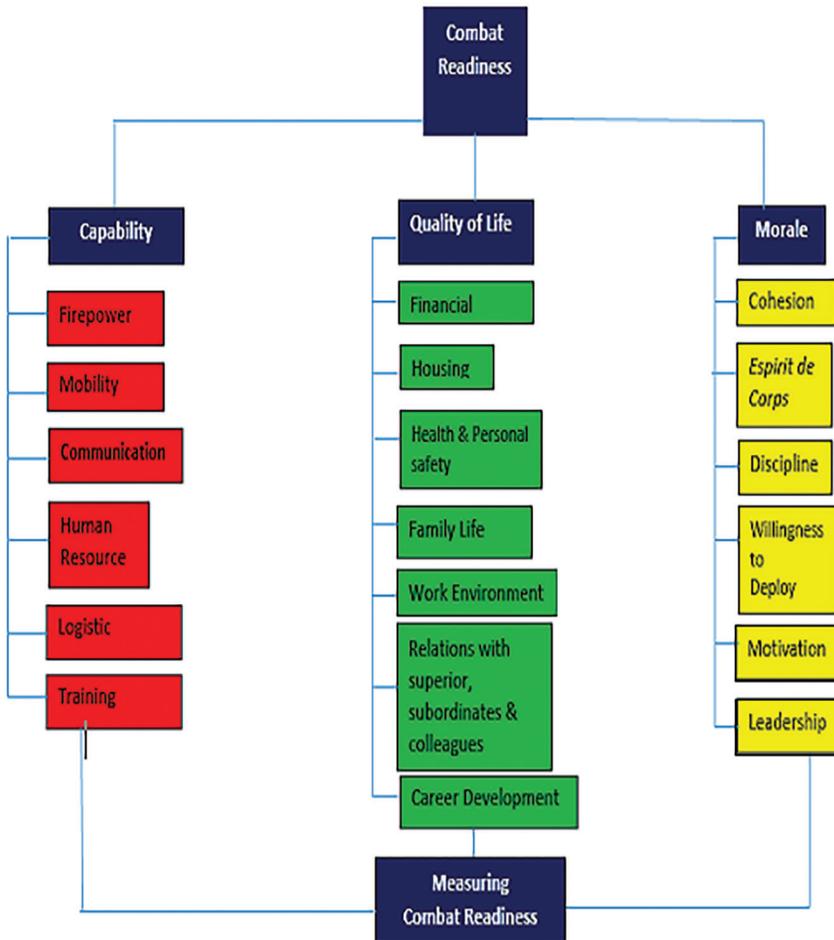

Fig.2 Approach on measuring the combat readiness [34]

ambition etc. in order to establish its own approach in determining the readiness status of its troops. In addition they must decide which capabilities need to be developed and what criteria should be implemented in order to have a feasible system that can deliver continuous results.

As a tool, the author provides, is an example of approaching the subject of evaluating force readiness (Fig. 2) that could serve as a starting point in order to obtain desired results for different nations.

4. FINAL RECOMMENDATIONS

"Readiness is an oft-mentioned – but frequently ignored – necessity."
Erik Prince

4.1. Force readiness

In previous chapters, the author mentioned different definitions and approaches that can serve as a starting point towards establishing a functional system that can provide decision makers with accurate information and ready forces in order to accomplish its national interests. However, to be able to provide some recommendations to ameliorate currently existing situation in Moldovan army in this regard, a few points are still pending that worth mentioning.

First of all, to be able to apply any of the approaches mentioned in chapter 2, some tenets and criteria have to be established, that will facilitate the determination of the level of force readiness. In American army those tenets are: manning, equipping, sustaining, training, installations, and capacity and capability [35] that have each some criteria of measurement such as:

- For *manning* – ability to generate and man existing structures or health of the force;
- For *equipping* – equipment on-hand, equipment modernization, and critical materiel availability;
- For *sustaining* – maintenance, strategic mobility, munitions, and Army pre-positioned stocks;
- For *training* – operational training, institutional training, and training support;
- For *installations* – services, infrastructure, energy and water;
- For *capacity and capability* – capacity and capability and of course the risk assessment [36], something that must be used as a criterion for all the tenets.

In addition to the proposed tenets and criteria, that can be changed, based on the existing national need, it is important to maintain the overall strategic objectives. For them, could also be provided some indicators of relevancy. These specific indicators should be developed as generic topics that can impact the readiness of a different tenet. Therefore, to achieve effectiveness those indicators should remain constant over a specific period of time, providing in this way data for comparison and increasing the effectiveness of the produced analysis. And because it is a strategic level, these indicators should be utilized to inform the decision makers of what policy lever needs to be implemented to obtain the desired effect by utilizing the most optimal resource allocation.

Furthermore, speaking of readiness level and to ensure common language, it is essential to establish a common framework that will allow the military decision makers to obtain accurate and comprehensive reports on force's "readiness level". In order to be able to conduct assessment of the readiness across all tenets, properly, an example, which could also serve as a baseline, is the American model, which includes four levels of readiness assessment.

Readiness Assessment Level 1 – Issues and/or shortfalls have negligible impact on readiness and ability to execute assigned mission(s) in support of the NMS as directed in the global employment of the force (GEF) and Joint strategic capabilities plan (JSCP);

Readiness Assessment Level 2 – Issues and/or shortfalls have limited impact on readiness and ability to execute assigned mission(s) in support of the NMS as directed in the GEF and JSCP.

Readiness Assessment Level 3 – Issues and/or shortfalls have significant impact on readiness and ability to execute assigned mission(s) in support of the NMS as directed in the GEF and JSCP.

Readiness Assessment Level 4 – Issues and/or shortfalls preclude accomplishment of assigned mission(s) in support of the NMS as directed in the GEF and JSCP [37].

Before concluding this section, the author must mention one more interesting thing. For decades, multiple USA DoD military and civilian representatives, along with non-DoD organizations that deal with the defense community have used extensively the tasks of *organizing*, *training*, and *equipping* military forces, as synonymy for generating

force readiness [38]. The repeated description of readiness utilizing these three terms over time has led the decision makers from the defense sector to conclude that only by organizing, training and equipping the force, the readiness of the force will not be achieved. Obtaining the readiness requires a more complex approach that involves all decision makers at the state level through appropriate Planning, Programming, Budgeting, and Execution process [39] focussed on the national level of ambition and will to obtain certain capabilities and standards.

As a result, today's planning process is not based only on these three contributors, main contributors, to the readiness level, it also encompasses subjects that determine the general readiness level, such as:

- Deteriorating facilities and infrastructure;
- Mismanagement of family housing;
- Construction of new buildings;
- Supplying (separate from equipping) of military forces;
- Supply chain vulnerabilities and challenges etc. [40], measures that require governmental support and constant sources allocation

that is critical to maintaining a ready force.

Having mentioned all of the above approaches, criteria and indicators, vital for development of a feasible regulation/instrument that can be utilized in order to provide both: military and civilian decision makers on one side and military units on the other side with clear definition, objectives, and guidance with clear time frames for obtaining the desired readiness level, the author can provide some guidance and recommendations for the key decision makers in order to facilitate the process.

4.2. Final recommendations for establishing functional system for readiness level assessment in Moldovan army

Prior of delivering the final recommendations, the author will perform an evaluation of the existing situation through the lenses of key military decision makers. While evaluating the real situation, clear tasks for the execution for the force must be established top-down from the Main Staff all the way to the last independent unit. Those tasks should be oriented towards having units ready to execute following duties: peacekeeping operation

in the Transnistrian Region, assistance operations to the national authorities in case of an emergency or natural disaster, and participation in multinational peacekeeping operations. Things that are currently missing in Moldovan army operational and tactical plans. The above mentioned tasks, are actually the three main directions proposed by the author that decision makers should orient their attention. On top of that, the military decision makers should provide realistic reports for the civilian authorities (Government, Parliament and the President of the Republic of Moldova) on what contributes the most to the readiness level, on existing organizational structures, level of training, and equipping that is currently on the military balance. Speaking of which, the main points of concern are:

- Constantly changing task organization, based not on a current analysis but on a personal desires of some decision makers;
- Lack of modern personal equipment, including vehicles and other types of equipment;
- Limited ability to honor the obligations assumed by RM to participate in multinational peacekeeping operations;

- Deficient budget allocations;
- Time for implementing the changes;
- Resistance of the entire enterprise for change; and,
- Lack of sufficient qualified personnel, at all levels, able to initiate and control all processes.
- In addition to the point discussed above, some other considerations must also be taken into count, such as:
- Revision of all outdated strategic documents, and lobbing for the Government and Parliament to make clear amendments on the direction of the Armed Forces, the direction that must be supported by any governing political party;
- Revision of the existing legislative system, that will approve the increase of the personnel figures of the units, based on security concerns and national objectives, and will also consider increase of salaries for the personnel, to make it more attractive for the younger generation;
- Change, or upgrade of the military doctrine has to be executed in order to match

the current requirements and allow unit commanders to focus on the adequate execution;

- Lack of a transparent plans of procuring special equipment for the Army units, including individual and collective equipment;
- Inability to hold experienced personnel not only due to the very low salaries, but also due to the existing disputes with regard to the current scarce social benefits.

Not all of the above-mentioned points of concern, will be discussed separately by the author, however it is clear that all of them have a significant impact on the readiness level of any units or on entire force. Currently, the Moldovan army is on its transformation path, at a very early stage, and its main effort should be oriented on providing necessary equipment and sustainment, performing adequate training, and allow the Armed forces sub-units to execute properly their constitutional tasks on Republic of Moldova's territory or overseas. This is important for the Moldovan army to be able to focus on its near-term objectives, review its current state of affairs, and obtain flexible transition to the mid-

term objectives by gaining sufficient time for conducting adequate planning, revising, and adjusting of long-term plans and objectives.

Considering all of the above considerations and the author's general professional experience, his experience in multinational operations, and the Professional Military Education he received from CGSC, it is proper time to present the final recommendation.

First of all, the specialist from the National Army Main staff and Ministry of Defense must perform a comprehensive analysis of all existing strategic documents at the national level and trace a connection to the military strategic documents making sure that in all of these documents are reflected current realities, that include and are not limited to: the Transnistrian Region issues, the unstable environment that covers the neighboring countries (Ukraine and Romania) and Europe, and all around evaluation of the security sector. Upon completion, the Minister of Defense must be informed on the results that will be than presented to the Government of the Republic of Moldova. All concerns related to the national security must be presented in a way that all civilian stake holders can understand them. The role of

the Ministry of Defense is critical at this stage, it is important that all security issues are properly lobbied and governmental support is gained. When the government accepts the directions presented by the defense community, and truly commit for their implementation (on a long term, regardless political parties governing the state), a working group for Military Doctrine development should be created. The working group that can rely on external assistance must produce a comprehensive document that will reflect all points of concern mentioned earlier in this paragraph.

The second issue that must be addressed at the Army Main Staff and Ministry of Defense levels are the "blind implementation and support" of other military institutions standards and practices in order to obtain proper functioning of the military institution as an entire entity. Task-organization, functioning and developmental standards, along with evaluation criteria and standards should not be simply copied from partner nations. The plans must be analyzed and used as guide-lines for further development, adaptation, and provisional implementation, considering specific requirements related to Moldova's society, culture,

and history in order to obtain desired capabilities. Therefore, bilateral and institutional agreements along with other assistance programs must be oriented towards the development of Moldovan army's personnel through different educational programs that include both PME and specialized education.

The next issue that must be addressed, as an urgent one, is the readiness issue of military units. In order to prepare a force able to execute their constitutional tasks to defend the territorial integrity of the country and provide support to the civil authorities in case of natural disasters or emergency, the evaluation criteria should be established. These criteria could be related to: force protection, mobility of the force, fire power projection, agility and flexibility, etc., criteria that can be identified only after a comprehensive Military Doctrine will be developed. Following that a list of essential tasks for the military units must be developed and implemented along with the level of readiness suited for the specificity (social and economic) of the Republic of Moldova. Currently, the readiness status of a military unit is assessed by the higher echelon with an appreciation such as: "not ready", "partially ready" or

"combat ready", the reality that is not that accurate and has direct influence on the Moldovan army's ability to influence the Transnistrian Region issue. Readiness status reflects the availability of resources and the number of qualified personnel. Therefore, addressing the issues mentioned above with increased attention to training and proper allocation of resources, readiness could be achieved and subsequently measured in order to match the desired outcome. Due to the fact that Republic of Moldova is not a part of NATO or the EU, and cannot completely rely on their military support in case of any foreign aggression, the National Army is the only entity responsible for the national defense, things that must be clearly understood by the national decision makers.

Finally, an absolute transformation of the Moldovan Army is vital and should be planned with short- and mid-term milestones, which will primarily focus on developing adequate task-organization, provide proper training, and equip the force. All that requires full governmental support in order to obtain a force capable to fully execute its constitutional tasks. The required capabilities can be developed and achieved, gradually,

only if the Government is committed to support the Defense Institution in becoming a more adaptive and flexible force.

Long-term planning is critical with the respect of renewing the existing vehicles fleet, major special equipment, and its weapons systems things that did not take place in last three decades of the existence of the Armed Forces. All that requires a significant budget increase for the Defense Institution as a whole. The much-needed transformation should not be limited only on the basic completion of existing units, but should also include the development of critical capabilities that will allow military units to execute their tasks. It is important to mention, that to be successful at all levels, the transformation should occur across all DOTMLPF-P domains at all three levels of warfare (strategic, operational and tactical.)

5. CONCLUSIONS

In conclusion is worth mentioning, one more time, that achievement of national interest should be the priority of any governing entities of the state, regardless of their political colours and ambitions. Armed Forces, as one of the main pillars of the state, must not be forgotten by its government,

comprehensive and continuous approach is needed in order to develop, maintain, and sustain a ready force capable of executing its constitutional responsibilities. All of that being said, das not mean that the Defense Institutions should wait for an appropriate attitude from the government, they must continuously promote the tenets that are vital for the nations existence, permanently lobby for the institution interests, that represent the national once, and insist on having a force, not that large in numbers, but agile enough, flexible, and capable to execute all given tasks.

In addition, the author had another chance to make a review of all strategic documents and army planning documents and military regulations related to the subject of force readiness evaluation, to identify the existing shortfalls and provide some recommendations.

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STRATEGIC MANAGEMENT OF THE DEFENSE INDUSTRY: A REVIEW ON CLUSTERING STRATEGY

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In addition to its military and political significance, the defense industry is also a strategic sector in terms of economy. There are several strategic decision areas in both the public and private sectors operating within the industry. In today's rapidly changing conditions, being able to develop and implement effective strategic decisions necessitates maturity in strategic management. In this respect, the clustering strategy implemented by the Turkish defense industry has brought many strategic advantages. Accordingly, this study aims to examine the strategic management process of the Turkish defense industry in the context of clustering strategy. Therefore, the dimensions of strategic management, its important components and the relationship between performance indicators and clustering strategy are examined. After a literature review on strategic management and clustering strategy in the defense sectors, evaluations and recommendations are discussed.

Key words: Clustering strategy, defense clusters, Turkish defense industry, strategic management.

1. INTRODUCTION

Strategic management, rooted from military strategies and planning, has gained popularity since the 1970s owing to its potential to create value in terms of effective and efficient use of resources for public and private sector organizations. In this process, being among the critical sectors, the defense industry has necessitated significant Research and Development (R&D) expenditures and high-cost investments due to increasing competition. However, it is not possible for all companies to bear these costs alone since developing and producing a new system, weapon, tool, or equipment is highly costly. Therefore, cooperation between businesses becomes essential [1].

In line with these developments, the dimensions of strategic management, its important components and the relationship between performance indicators and clustering strategy

are examined based upon the case of Turkish defense industry. After a literature review on strategic management and clustering strategy in the defense sector, evaluations and recommendations are presented in the conclusion part.

2. A TIMELY OVERVIEW OF THE STRATEGIC MANAGEMENT PARADIGM

Strategic management can be defined as managerial decisions and actions that determine the long-term performance of a firm [2]. While determining the organizational objectives, environmental scanning becomes essential. It is a process that requires strategy development, implementation, evaluation, and control activities. Accordingly, strategic management includes analysis, formulation and implementation activities in search of competitive advantage. It can also be seen as an integrative management field which benefits from disciplines such as marketing, organizational behavior, human resource management, and finance [3], [4].

In today's rapidly changing and developing information age and competitive environment, the survival of businesses is directly proportional to their continuous development and differentiation of their products and services, and this stage is called innovation. Innovation includes not only inventions made with technology and science, but also developments in services and products, and the production and marketing stages. Innovation and efficiency are the main factors for achieving sustainable profitability, and the profit gained by abandoning innovation can be described as capital consumption, not profitability. From a sectoral point of view, sectors based on knowledge-intensive services and products have a competitive advantage [5], [6]. The details of the strategic management process can be seen in Figure 1 below:
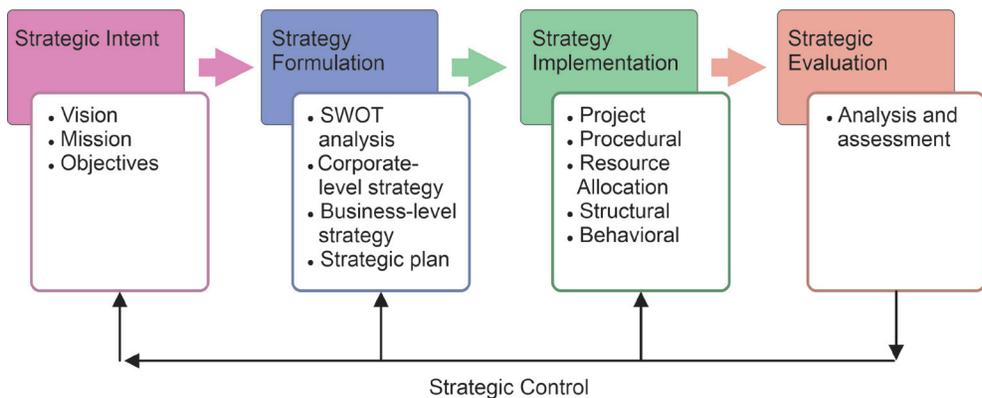

Fig. 1. Strategic Management Process [7]

Since the 1970s, several studies have been conducted in the field of strategic management. In a recent study [8], which examines the most frequently used keywords in the field, enlists them as the following:

- Alliances, joint ventures, and co-operation
- Capabilities, competencies, and resource-based view of the firm
- Cognitive modeling
- Competition and competitive analysis
- Concept of strategy as fit
- Corporate restructuring
- Corporate strategy
- Decision-making
- Diversification strategy
- Entrepreneurship
- Entry modes and strategic advantage
- Environmental modelling: governmental, political, and social influences on strategy.

On the other hand, starting from the financial theory and strategic management, the evolution of the field has been presented as functional strategies; global, international, and multinational strategies; growth models; industry analysis; leadership, management style, and learning, methodologies, theories, and research issues; organization: structure, strategy, and change, performance; planning and control systems; R&D, technology, innovation; strategy typologies and strategic groups; and top management [8], [9].

2.1. Strategic Management of the Defense Industry

There are two main views that dominate the defense field: international security issues and the economy [10]. As long as threats and the use of force are possible in the solution of international problems, the defense industries of the countries will remain significant in terms of foreign policy since defense industry capabilities provide the use of force and deterrence. Besides, defense industries are important in terms of economy and technology, as well as their contributions in the fields of military and diplomacy [11].

Revealing the strategic added values expected from the defense industry with both talent acquisition and an economic perspective requires multidimensional and time-consuming studies due to the nature of the industry. This situation requires a long-term strategic view. Considering the basic characteristics of the sector, which is envisioned to have relatively difficult market entry conditions owing to the necessary technological infrastructure, high investment costs, and current intense competition, the defense industry can be characterized as a monopoly or oligopoly structure. It is an economically strategic sector that can be characterized as new companies

established by the separation of a department from the main companies and the R&D intensity accordingly [12].

The next session explains the clustering strategy in the defense industry.

2.2. Clustering Strategy in the Defense Industry

Ensuring that defense companies operating in similar and complementary fields operate within clusters by establishing an ecosystem has become very important in the context of increasing the effectiveness of strategic management in defense industry [13]. According to Porter [14], who introduced the concept of clustering and worked on that subject, clustering consists of many enterprises operating in the same value chain, having economic relations while competing with each other, suppliers selling goods and services to enterprises, as well as universities, vocational training institutions, standards related to the business field, and auditing institutions which are located in the same geographical area. The scope of clusters can extend to a city, geographic region, country, and in some cases, a network of neighboring countries. Companies that come together will increase their competitiveness thanks to the advantage they create in the value chain.

On the other hand, when strategic management is investigated in terms of clusters, a very complex situation emerges since clusters consist of many small and medium-sized enterprises (SME) that are independent of each other, trying to continue their activities in different fields with their characteristics and different goals, and even competing among themselves, as well as different from each other in their sizes, cultures and management styles. Therefore, it is not easy for these different businesses to create an ecosystem in which they can act together by creating a common vision, a common mission, common goals, and a set of values. In this context, it is necessary to establish an effective communication network and to reveal the capabilities, areas of expertise, and capacities of each business in detail [15].

Clusters offer SMEs advantages for innovation through communication networks and strategic partnerships, increase their competitiveness at the international level, enable them to benefit from the input pool of large enterprises, develop new strategies and production techniques, and increase workforce skills. The most important sustainable strategy to create long-term value in the global economy is innovation [6].

The next session further discusses the clustering strategy based upon the Turkish case.

3. THE TURKISH CASE

Since a holistic view of the defense industry includes government, industry, military, and research components, the main stakeholders of the Turkish defense industry involve all.

Aviation Cluster (ESAC), Izmir based Aerospace Cluster Association, and Bursa based Aerospace and Defence Cluster (BASDEC).

The largest of the defense clusters operating in Turkey is SAHA Istanbul, the defense and
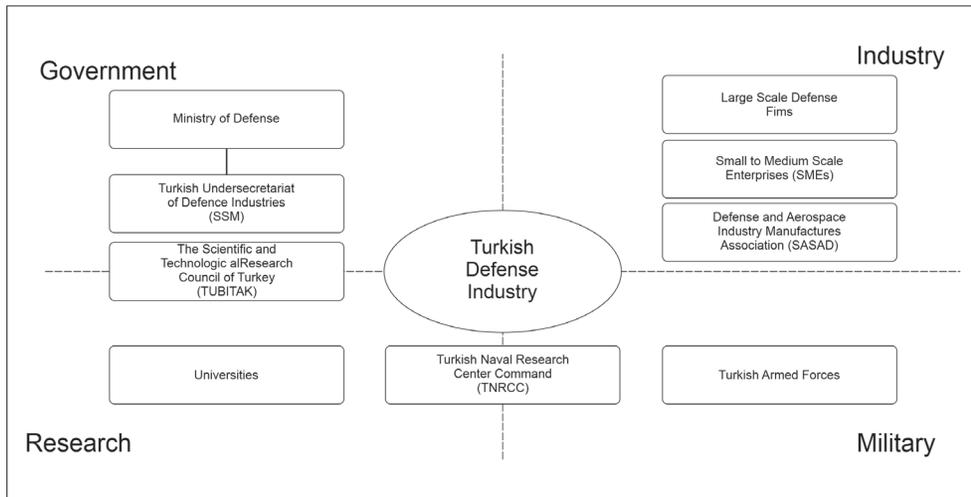

Fig. 2. Main Stakeholders of Turkish Defense Industry [15]

As clusters increase the sustainable competitive advantage by increasing the productivity of the enterprises in the cluster, triggering innovation, creating, and developing new job opportunities, their significance is also recognized by the defense industry. Major defense clusters in Turkey are Istanbul based SAHA Istanbul Defence & Aerospace Cluster Association, Ankara based Ostim Defense and Aviation Cluster (OSSA) and Teknokent Defence Industry Cluster, Eskisehir based

aerospace cluster located in Istanbul. SAHA Istanbul Defense, Aviation and Space Clustering Association was established in 2015 with the initiatives of 27 founding members, in line with the goal of achieving a common synergy by clustering the power of 65,000 industrial companies operating in the Northern Marmara corridor, with the aim of producing technological products with high added value for the industry. In addition to technical textile studies, SAHA Istanbul has also supported

a number of large-scale programs and projects such as "National ERP Developing Program", "Holistic Innovative Solutions for an Efficient Recycling and Recovery of Valuable Raw Materials from Complex Construction and Demolition Waste (HISER)", "Energy and Power Systems UR-GE Project", and "Production of Rare Soil Elements by Biological Methods" [16].

Many clustering studies have been initiated in the region by the OSTIM Organized Industrial Zone management. In this framework, a highly comprehensive and detailed cluster analysis based on competitiveness was carried out in 2007. There are also large companies operating in the regional defense sector, opportunities to cooperate with universities, and access to a qualified workforce. Located in the region, OSSA, with the aim of increasing cooperation and communication and by applying a successful strategic management process, brings SMEs together to share information about their core competencies and capabilities, problems, and solutions with major institutions such as the Ministry of National Defense, Presidency of Defense Industries, Ministry of Industry and Technology, Ministry of Trade as well as Force Commands, General Directorate of Military Factories, General Directorate Of State Airports Authority, and General Directorate of Shipyards. Moreover, contractor companies from 60 countries (i.e. Airbus, Boeing, Skorsky, CERN, IGSS Kuwait) are brought together with SMEs in Industrial Cooperation Days in Defense & Aerospace organized by OSSA [17].

As a result, comprehensive development has been achieved in recent years. In addition to signature projects such as TCG KINALIADA (the fourth warship developed under the national MILGEM ship program), PIRIREIS (the first of the new type submarines), and TCG ANADOLU (the multipurpose amphibious assault ship), ATMACA (the first anti-ship missile developed with native technology), BOZDOGAN and GOKDOGAN (air-to-air missiles), TUFAN (electromagnetic railgun system), ARMOL (the national laser gun), AKINCI unmanned combat aerial vehicle (UCAV), AKSUNGUR unmanned aerial vehicle (UAV), GOKBEY, ATAK, and T70 helicopters, with the synergy created by the defense clusters, the fifth period for the Turkish defense industry has begun.

This period is highlighted as a native industrial period due to increasing technological maturity with 75.000 experts working in more than 1500 Turkish defense companies. Accordingly, the number of projects has amounted to 700 (the number was only 66 in 2002). Turkish defense projects were used be carried out with a budget limited to $5.5 billion in 2002 while as of 2020, the project volume hit the record of $60 billion. When the projects in the bidding are also taken into account, it is expected that the total volume will extend beyond $75 billion [18], [19].

On the other hand, Turkish defense industry clusters prefer to preserve their association status which hinders the development of an institutional structure. Besides, university-cluster synergy remains below the expectations in Turkey [20]. The activities of clusters in Europe are carried out with government incentives and in coordination with organizations that do not have financial concerns such as chambers of industry, chambers of commerce, and development agencies. Accordingly, suggestions for an efficient strategic management process will be discussed in the conclusion part.

4. CONCLUSIONS AND SUGGESTIONS

It is concluded that, although clusters achieve significant success in less than ten years, in order for them to reach the expected level, they should develop their cooperation with universities and other research institutions by analyzing successful foreign practices, and applying every stage of the process within the framework of strategic management approach and developing professional strategies in this field. In this respect, by taking advantage of the flexible structures of SMEs, clusters should update their strategies according to changing situations.

Assessing from a managerial perspective, developing a strategic management process and carrying out activities efficiently necessitate a holistic, inclusive, and up-to-date approach adopted by both the cluster managements and expert groups. First of all, mechanisms should be established where company representatives can come together regularly to share information, take joint decisions, and discuss cooperation opportunities. Thanks to these mechanisms, it will be possible to evaluate the opportunities that will arise.

In order for Turkish defense industry clusters to reach the level of information and technology density that is targeted today, it is necessary to create a synergy between the clusters not only among their own members, but also with other clusters in communication and cooperation, and the incentives of the relevant public institutions. It is also important for the cluster member companies to support the implementation of the neighboring area strategy; organize activities and include them in the cluster strategic planning and management processes.

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INNOVATION ACTIVITIES
IN EUROPEAN UNION ENTERPRISES:
AN OVERVIEW

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Nowadays innovation is more than necessary for an enterprise to survive the competition on the market. The Community innovation survey from the EUROSTAT Database provides us with the data necessary to analyze the innovation activities of the enterprises in EU Countries. In this paper we will focus on the latest data from 2018 describing the enterprises with innovation activities by activity and size class and the enterprises that introduced new or improved processes by type of innovation, activity and size class.

Key words: innovation, innovation activities, innovative enterprises

1. INTRODUCTION

According to the Reference Metadata in the Community innovation survey 2018 (CIS2018), an "innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).

The minimum requirement for an innovation to occur is that the product or process (marketing or organizational) method must be new or significantly improved to the firm. This includes not only products, processes and methods that firms are the first to develop but also those that have been adopted from other firms or organizations." [1]

Also according to CIS2018, the "Innovation activities include all developmental, financial and commercial activities undertaken by a firm that are intended to result in an innovation for the firm.

Types of innovation activities:
- Successfully introduced product or process innovation;
- Completed by not yet implemented innovation;
- On-going, with work in progress that has not yet

resulted in the implementation of an innovation;

- Abandoned before the implementation of an innovation;
- R&D activities." [2]

2. DATA ANALYSIS

2.1. Enterprises with innovation activities

In the following 5 tables we synthesized the data concerning the innovation core activities by type of enterprise in EU countries.

For the practical view of the countries we have used the countries code, as follows: BE (Belgium), BG (Bulgaria), CZ (Czechia), DK (Denmark), DE (Germany), EE (Estonia), IE (Ireland), EL (Greece), ES (Spain), FR (France), HR (Croatia), IT (Italy), CY (Cyprus), LV (Latvia), LT (Lithuania), LU (Luxembourg), HU (Hungary), MT (Malta), NL (Netherlands), AT (Austria), PL (Poland), PT (Portugal), RO (Romania), SI (Slovenia), SK (Slovakia), FI (Finland), SE (Sweden).

In Table 1 we can observe the composite average for the EU-27 group of countries and also the maximum and minimum values as percentage of enterprises.

For the innovative enterprises and enterprises with completed innovation activities we have the maximum value in Estonia (73.1% and 68.6%). For the enterprises with abandoned/suspended innovation activities we have the maximum value in Cyprus (44.2%), and for enterprises with on-going innovation activities the maximum is in Italy (47.6%).

For this indicator we have the minimum value for all the four types of enterprises in Romania.

Table 1. Innovation core activities

Innovation core activities	EU-27 (%)	MAX (%)	MIN (%)
Innovative enterprises	50.3	73.1 (EE)	14.6 (RO)
Enterprises with completed innovation activities	46.5	68.6 (EE)	14.3 (RO)
Enterprises with abandoned/suspended innovation activities	7.4	44.2 (CY)	0.4 (MT)
Enterprises with on-going innovation activities	26.2	47.6 (IT)	2.0 (RO)

Table 2. Innovative enterprises

Innovative enterprises (%)	Countries	No of countries
14-25	RO, PL	2
25-36	HU, BG, SK, ES, LV	5
36-47	PT, IE, MT, CZ	4
47-58	SI, NL, LT, LU, FR, HR, DK	7
58-69	EL, FI, AT, SE, IT, BE, DE, CY	8
69-80	EE	1

In Table 2 to Table 5 we have made a grouping of countries depending on the type of enterprise innovation activities.

In Table 2 we have the innovative enterprises. The majority of the EU countries have at least 47% of innovative enterprises out of total number of enterprises: Slovenia – 48.6%, Netherlands – 49.7%, Lithuania – 50.5%, Luxembourg – 50.6%, France – 51.5%, Croatia – 52.5%, Denmark – 57.1%, Greece – 60.3%, Finland – 61.9%, Austria – 62.6%, Sweden – 63.1%, Italy – 63.2%, Belgium – 67.8%, Germany – 67.8%, Cyprus – 68.2%, and Estonia – 73.1%.

Table 3 shows the enterprises with completed innovation activities. 18 out of 27 EU countries have enterprises with at least 44% of this type of activities: Ireland – 44.1%, Czechia – 44.2%, Slovenia – 44.6%, Malta – 45.7%, Netherlands – 46.2%, Lithuania – 48.4%, Luxembourg – 48.6%, France – 49%, Croatia – 52.1%, Denmark – 54%, Finland – 55.7%, Italy – 56.7%, Greece – 58.5%, Austria – 60.3%, Sweden – 61.4%, Germany – 63.7%, Cyprus – 68.2%, and Estonia – 68.6%.

Table 3. Innovative enterprises

Enterprises with completed innovation activities (%)	Countries	No of countries
14-24	RO, PL	2
24-34	HU, SK, BG, ES, LV	5
34-44	PT	1
44-54	IE, CZ, SI, MT, NL, LT, LU, FR, HR	9
54-64	DK, FI, IT, EL, AT, SE, DE	7
64-74	CY, EE	2

Table 4 displays the enterprises with abandoned/suspended innovation activities. The greatest number of EU countries (8) have enterprises with less than 3 % at this indicator: Malta – 0.4%, Romania – 0.7%, Poland – 2.4%, Latvia – 2.5%, Sweden – 2.5%, Bulgaria – 2.7%, Spain – 2.7%, and Hungary – 2.7%.

Table 5 shows the enterprises with on-going innovation activities. 18 out of 27 EU countries have enterprises with less than 26% of this type of activities: Romania – 2%, Bulgaria – 6.1%, Cyprus – 6.5%, Poland – 8%, Hungary – 9.4%, Spain – 10.7%, Slovakia – 13.4%, Portugal – 13.7%, Latvia – 14.4%, Lithuania – 15.7%, Malta – 16.8%, Austria – 19.3%, Croatia – 19.9%, Czechia – 22.3%, Slovenia – 22.6%, Luxembourg – 23.1%, Netherlands – 23.6%, and Ireland – 24.6%.

Table 4. Enterprises with abandoned/suspended innovation activities

Enterprises with abandoned/suspended innovation activities (%)	Countries	No of countries
less than 3	MT, RO, PL, LV, SE, BG, ES, HU	8
3-6	LT, SK, PT, SI, HR	5
6-9	CZ, LU, AT, FR, NL	5
9-12	DE, EL, DK, FI, IE	5
12-15	BE, IT	2
more than 15	EE, CY	2

Table 5. Enterprises with on-going innovation activities

Enterprises with on-going innovation activities (%)	Countries	No of countries
2-10	RO, BG, CY, PL, HU	5
10-18	ES, SK, PT, LV, LT, MT	6
18-26	AT, HR, CZ, SI, LU, NL, IE	7
26-34	DK, SE, FR, FI, EL	5
34-42	EE, DE	2
42-50	BE, IT	2

2.2. Enterprises that introduced new or improved processes by type of innovation

In the next 9 tables we have synthesized the information regarding the percentage of enterprises in EU countries that introduced new or improved processes in their activity.

In Table 6 we can observe the composite average for the EU-27 group of countries and also the maximum and minimum values as percentage of enterprises. We

mention that for all the 8 indicators the minimum value was in Romania and the maximum value was in Cyprus.

Table 7 displays the countries with enterprises that have introduced business process innovation. 10 out of 27 EU countries have this percentage between 38% and 48%: Ireland – 38.5%, Netherlands – 40%, Luxembourg – 40.2%, Czechia – 40.3%, France – 40.5%, Malta – 40.6%, Lithuania – 44.5%, Croatia – 46.3%, Denmark – 46.6%, and Finland – 47.5%.

Table 6. Innovation core activities – percentage of enterprises

Innovation core activities	EU-27 (%)	MIN (%) (RO)	MAX (%) (CY)
Business process innovation	41.0	8.0	65.9
New or improved methods for producing goods or providing services	20.9	4.5	43.3
Innovations in logistics	12.9	2.7	60.4
New business practices for organizing procedures or external relations	15.2	2.8	39.2
New methods of organizing work responsibility, decision making or human resource management	20.5	4.2	39
New or improved methods for information processing or communication	22.8	3.6	60.7
New methods for accounting or other administrative operations	17.6	1.9	51.3
New marketing methods for promotion, packaging, pricing, product placement or after sales services	16.6	4.9	39.3

Table 7. Business process innovation

Business process innovation (% of enterprises)	Countries	No of countries
8-18	RO	1
18-28	PL, HU, BG, SK, ES, LV	6
28-38	PT, SI	2
38-48	IE, NL, LU, CZ, FR, MT, LT, HR, DK, FI	10
48-58	EE, IT, EL, AT, DE, SE	6
58-68	BE, CY	2

Table 8 shows the countries with enterprises that have new or improved methods for producing goods or providing services. 19 out of 27 EU countries have less than 25% enterprises with this type of activities: Romania – 4.5%, Poland – 9.7%, Spain – 11.3%, Hungary – 11.3%, Bulgaria – 11.6%, Slovakia – 11.7%, Latvia – 14.2%, Denmark – 17.2%, Luxembourg – 17.2%, Netherlands – 17.6%, Czechia – 19.8%, Ireland – 19.8%, Slovenia – 20.9%, Malta – 21.9%, Portugal – 22.1%, France – 22.9%, Sweden – 23.2%, Germany – 23.9%, and Finland – 24.4%.

Table 9 displays the countries that have enterprises with innovations in logistics: 14 out of 27 EU countries have this indicator between 10% and 18%: Netherlands – 10.5%, Czechia – 10.9%, France – 11%, Lithuania – 12%, Luxembourg – 13%, Denmark – 13.1%, Slovenia – 13.4%, Portugal – 13.8%, Finland – 14.6%, Germany – 14.7%, Malta – 15%, Belgium – 15.6%, Sweden – 15.8%, and Estonia – 16.6%.

Table 8. New or improved methods
for producing goods or providing services

New or improved methods for producing goods or providing services (% of enterprises)	Countries	No of countries
4-11	RO, PL	2
11-18	ES, HU, BG, SK, LV, DK, LU, NL	8
18-25	CZ, IE, SI, MT, PT, FR, SE, DE, FI	9
25-32	HR, EE, LT, AT, BE, IT	6
32-39	EL	1
39-46	CY	1

Table 9. Innovations in logistics

Innovations in logistics (% of enterprises)	Countries	No of countries
less than 10	RO, BG, ES, HU, PL, SK, LV, IE	8
10-18	NL, CZ, FR, LT, LU, DK, SI, PT, FI, DE, MT, BE, SE, EE	14
18-26	AT, HR, IT, EL	4
more than 26	CY	1

Table 10 shows the EU countries with enterprises that have new business practices for organizing procedures or external relations – less than 20%: Romania – 2.8%, Spain – 4.3%, Hungary – 6.3%, Sweden – 6.8%, Latvia – 7.7%, Poland – 8.8%, Bulgaria – 9.2%, Slovakia – 10%, Slovenia – 10.4%, Lithuania – 11.4%, Netherlands – 12.3%, Czechia – 13.5%, Estonia – 14.6%, France – 14.6%, Finland – 16.1%, Luxembourg – 16.3%, Croatia – 16.8%, Portugal – 18.2%, Malta – 19.4%, and Germany – 19.8%.

Table 11 displays the EU countries with enterprises that apply new methods of organizing work responsibility, decision making or human resource management. The majority of the countries have between 10% and 16% of the type of enterprises mentioned above: Belgium – 10.1%, Poland – 10.5%, Latvia – 12.3%, Netherlands – 13.6%, Denmark – 13.8%, Lithuania – 13.9%, and Slovenia – 13.9%.

Table 10. New business practices
for organizing procedures or external relations

New business practices for organizing procedures or external relations (% of enterprises)	Countries	No of countries
less than 8	RO, ES, HU, SE, LV	5
8-14	PL, BG, SK, SI, LT, NL, CZ	7
14-20	EE, FR, FI, LU, HR, PT, MT, DE	8
20-26	IT, IE, DK, BE	4
26-32	AT, EL	2
more than 32	CY	1

Table 11. New methods of organizing work responsibility,
decision making or human resource management

New methods of organizing work responsibility, decision making or human resource management (% of enterprises)	Countries	No of countries
4-10	RO, ES, BG, HU, SK	5
10-16	BE, PL, LV, NL, DK, LT, SI	7
16-22	SE, LU, CZ, FR, IE	5
22-28	PT, HR, FI, EE, MT, IT	6
28-34	DE, AT	2
34-40	EL, CY	2

In Table 12 we can observe the EU countries with enterprises that have new or improved methods for information processing or communication. 10 out of 27 EU countries have between 23% and 33% at this indicator: Estonia – 23.6%, Ireland – 23.9%, Malta – 25.6%, Croatia – 26.5%, Luxembourg – 27.1%, Finland – 27.5%, Denmark – 29.1%, Belgium – 29.5%, Italy – 32.4%, and Greece – 32.8%.

Table 13 shows the enterprises from EU countries that have applied new methods for accounting or other administrative operations. 16 out of 27 EU countries have less than 19%: Romania – 1.9%, Bulgaria – 6%, Spain – 7.7%, Slovakia – 8.5%, Latvia – 8.6%, Hungary – 8.6%, Poland – 8.8%, Slovenia – 11.3%, Sweden – 14.3%, Czechia – 14.9%, Portugal – 15.1%, France – 15.6%, Denmark – 16.8%, Lithuania – 17%, Luxembourg – 17.9%, and Ireland – 18.1%.

Table 12. New or improved methods
for information processing or communication

New or improved methods for information processing or communication (% of enterprises)	Countries	No of countries
less than 13	RO, BG, PL, LV, ES, SK, HU	7
13-23	CZ, SE, LT, NL, FR, SI, PT	7
23-33	EE, IE, MT, HR, LU, FI, DK, BE, IT, EL	10
33-43	DE, AT	2
more than 43	CY	1

Table 13. New methods for accounting
or other administrative operations

New methods for accounting or other administrative operations (% of enterprises)	Countries	No of countries
less than 10	RO, BG, ES, SK, LV, HU, PL	7
10-19	SI, SE, CZ, PT, FR, DK, LT, LU, IE	9
19-28	HR, EE, NL, MT, FI, IT, DE, AT	8
28-37	BE, EL	2
more than 37	CY	1

In Table 14 we can see the enterprises from EU countries that have applied new marketing methods for promotion, packaging, pricing, product placement or after sales services. 14 out of 27 EU countries have less than 16% at this indicator: Romania – 4.9%, Spain – 7.9%, Poland – 8.2%, Bulgaria – 8.6%, Hungary – 8.7%, Slovakia – 8.7%, Latvia – 10%, Netherlands – 12.5%, Belgium – 13%, Slovenia – 13.2%, Sweden – 14.5%, France – 14.7%, Lithuania – 14.8%, and Luxembourg – 14.9%.

incentives for implementation of innovation, innovation cooperation, source of financing of innovation, sources of information on innovation, innovation barriers etc."

In this paper the focus was on the innovation core activities in EU countries enterprises: business process innovation, new or improved methods for producing goods or providing services, innovations in logistics, new business practices for organizing procedures or external relations, new methods of organizing work responsibility, decision making

Table 14. New marketing methods for promotion, packaging, pricing, product placement or after sales services

New marketing methods for promotion, packaging, pricing, product placement or after sales services (% of enterprises)	Countries	No of countries
less than 10	RO, ES, PL, BG,HU,SK	6
10-16	LV, NL, BE, SI, SE, FR, LT, LU	8
16-22	PT, IE, DK, FI,HR, MT	6
22-28	CZ, IT, EE, DE, AT	5
more than 28	EL, CY	2

3. CONCLUSIONS

The Community Innovation Survey [3] collects data regarding the number of enterprises in Europe with "innovation activities, innovation expenditure, innovative products (new to firm; new to the market), turnover from innovative products, business process innovation,

or human resource management, new or improved methods for information processing or communication, new methods for accounting or other administrative operations, new marketing methods for promotion, packaging, pricing, product placement or after sales services.

Due to the fact that Romania has registered minimum values on

all these indicators we can conclude that, unfortunately, the innovation in enterprises is not a priority for the moment in our country's enterprises.

ENDNOTES

[1]https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm, pag. 5

[2]https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm, pag. 6

[3]https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm, pag. 2

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HOSPITAL MANAGEMENT TRANSFORMATION STRATEGIES IN ROMANIA RESULTING FROM THE NEW SOCIAL AND ECONOMIC CONDITIONS

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In the current conditions of biological risk, at a time when many countries are already threatened by the emergence of the sixth pandemic wave of COVID-19, the Romanian health system is under pressure that no one has anticipated until a while ago. The migration of a large number of people from Ukraine to Romania and other countries, using our country in transit, puts pressure on the medical system through the appearance of diseases considered eradicated or strains not treatable by vaccination. Under these conditions, the transformation of hospital management is vital for maintaining the optimal parameters of the national health system and ensuring national security.

Key words: public health, national security, hospital management, infectious diseases, transformation, change management, health financing

1. INTRODUCTION

Given the large influx of refugees from Ukraine, the National Institute of Public Health (INSP) called on the Public Health Directorates to closely monitor the health of Ukrainian refugees entering Romania and to report cases of diphtheria, polio and measles (***, 2022b). The questionnaire and reporting document was sent to all health units in the territory, with strict implementation deadlines.

Ukraine has one of the highest rates of drug-resistant tuberculosis (MDR-TB) in the world (over 7,000 patients), which is treated only with innovative drugs. For the safety of people who are accommodating or treating refugees, Ukrainians who cough, have respiratory symptoms or a history of tuberculosis can also consult a free radiograph at the nearest tuberculosis dispensary.

2. INFECTIOUS DISEASES, SERIOUS THREATS TO NATIONAL SECURITY

Tuberculosis is not transmitted as quickly as COVID-19, but the

disease can be transmitted to medical staff treating a person suffering from tuberculosis, especially when no specific measures are taken for the infectious disease departments. Studies show that there is a high risk of transmitting tuberculosis if the incidence with an infected person is manifested for about a month.

It should not be ignored that the treatment of a single patient with multidrug-resistant tuberculosis (drug-resistant) costs 40,000 euros, given that the treatment consists of innovative drugs, and Romania has problems in ensuring this long-term treatment including over 200 Romanian patients, from due to very high costs. In the main Romanian TB hospitals, the treatment is provided currently with Norwegian funds, based on some projects for 2022 and 2023, but long-term solutions are needed for the current situation (Meca et al, 2021).

MDR-TB research has shown that 6 out of 10 patients with multidrug-resistant tuberculosis die without treatment. Not immediately, but by the end of the year we could see the impact of refugees on an increase in the number of cases. In the coming months our hospitals must organize to screen for refugees, those who have symptoms or a history. Screening

can be done in Romanian hospitals and dispensaries, but the problem will be to ensure treatment, because the amounts are huge in the case of multidrug-resistant tuberculosis (Munteanu et al, 2020).

Approximately 30,000 new cases of tuberculosis are reported annually in Ukraine. The neighboring country has one of the highest rates of drug-resistant tuberculosis in the world. Regarding Romania, our country is on the first place in the European Union in the number of new cases and recurrences of tuberculosis.

In the WHO Europe Region, 18 countries are considered high priority on TB, and Romania is among them. Tuberculosis is an infectious disease that does not forgive anyone, regardless of social or material situation. Global efforts to eradicate tuberculosis have been severely shaken by the COVID-19 pandemic. In 2020, 231,000 people became infected with TB and 21,000 deaths were recorded (***, 2020).

Tuberculosis has the second highest mortality rate in the world, after COVID-19. At the moment, the WHO's concern is drug-resistant tuberculosis. Tuberculosis remains among the top 10 causes of death in the world. Every day, more than

4,100 people lose their lives to tuberculosis, and nearly 28,000 people get the disease that can be prevented and cured.

The incidence of tuberculosis has steadily decreased in recent years, so that in 2020 it was a decrease of almost 30%. The decline is beneficial but should be viewed with caution. In 2021, provisional data show a slight upward trend. The COVID-19 pandemic means a return 5 years ago in terms of tuberculosis control, according to the WHO, and the incidence is set to increase. Only investing in tuberculosis treatment, prevention and control can save lives.

In Romania, the incidence of tuberculosis in the rural population, where screening actions were carried out, is five times higher than the national average. Where reached through the screening caravans, the incidence was 252 cases per 100,000 inhabitants. The highest incidences were recorded in the southern and eastern areas, the traditional area with many cases. There are areas with a crowded rural environment, where the germ can be transmitted much more easily in that area and there are many poor localities where there is no easy access to medical services (Mahler&Croitoru, 2019).

The balance of 2021 reflects the sustained effort to detect tuberculosis, marking a slight recovery of the figures compared to the previous year. The incidence of tuberculosis was 39.5 cases per 100,000 inhabitants. In numbers, 7618 people were diagnosed with tuberculosis in 2021, of which 6418 new cases and 1200 relapses.

The counties with the highest incidence are Dolj, with an incidence of 65.5 cases per 100,000 inhabitants, Olt with an incidence of 63.7 cases per 100,000 inhabitants, Neamț with an incidence of 61.7 cases per 100,000 inhabitants. The lowest incidence in 2021 was registered in Sălaj, with an incidence of 17.2 cases per 100,000 inhabitants, Covasna, with an incidence of 16.9 cases per 100,000 inhabitants, Harghita with an incidence of 12.7 cases per 100,000 inhabitants.

Regarding the association of COVID-19 with tuberculosis, in 2021 73 cases of tuberculosis-COVID19-associated infection were reported, of which 64 with pulmonary localization, increasing compared to 2020 when 52 cases were reported, of which 43 with pulmonary localization.

As vital medical supplies are almost depleted in Ukraine, authorities have been forced to halt

urgent efforts to eradicate an outbreak of polio after Russia's invasion. Medical needs are already acute, and the World Health Organization (WHO) has warned that oxygen supplies are running low.

Fears about a public health crisis caused by the waves of refugees in Ukraine are growing as people leave their homes, health services are disrupted and medical supplies fail to reach Ukraine after the COVID-19 pandemic. In addition, the pressure on health systems stems from rising costs, with refugees receiving services paid for by the National Health Insurance House. In fact, the hospital units receive the money spent after a certain period, established by contract, and financial syncopes may appear in the management of the organizations.

Immunization and control efforts of polio outbreaks have been suspended in Ukraine due to fighting. Vaccination campaigns against COVID-19 have also been discontinued in many parts of the country. In October 2021, Ukraine reported the first case of polio in Europe in five years, a 17-month-old baby being paralyzed and another case involving paralysis was discovered in January 2022.

Another 19 children were identified with a vaccine-derived form of polio but no symptoms of paralysis. A national polio immunization campaign targeting 100,000 unprotected children began on February 1st, 2022 in Ukraine, but was stopped after fighting broke out and health authorities gave priority to emergency care. The World Health Organization says the lack of electricity in some areas has affected the safety of vaccine stocks.

The UN Joint Program on HIV/AIDS says there are still less than a month's stockpiles of medicines for HIV patients in Ukraine. People living with HIV living in Ukraine have only had antiretroviral therapy for a few weeks, and in the absence of uninterrupted access to these drugs, their lives are in danger. Before the Russian invasion, 250,000 people living with HIV lived in Ukraine, the second largest number in Europe, after Russia.

Given that the epidemiological filtering of refugee waves could not be carried out at the border crossing, there is a risk that serious contagious diseases have already been transmitted to people in our country. In addition, the incidence of these people in the public health environment has disastrous effects if

they are not known and reported, as the INSP initiative does not refer to HIV/AIDS.

3. HOSPITAL MANAGEMENT TRANSFORMATION STRATEGIES

Healthcare unit management, especially hospital management, is one of the most complex management models. The mentioned complexity derives from the fact that this specialized management deals directly with people's health and life.

In order for hospital management to be truly responsive to current challenges, countless processes are needed both to minimize risk and to provide safety and quality services to their patients. Given that hospitals are places of stress and constant pressure, this requires hospital managers have to make decisions quickly, with a very high risk of human error (***, 2021b).

Considering the challenges of the medical sector, it is imperative to consider several important steps for successful hospital management. The steps mentioned must be taken in such a way that any necessary changes or transformations bring the highest possible efficiency, with the lowest possible human, financial and material costs.

A primary concern of hospital management should be patient orientation. The patient's profile has changed in recent months with the outbreak of war in Ukraine. It involves those seeking health care, including people who have not been tested by refugees for contagious diseases.

For the beginning, at the level of hospitals, this new patient profile is much more demanding, especially in relation to emergency medicine. Today, this category of patients is not expected to be attended by specialists or family physicians, but rather emergency units, endangering the critical medical staff with contagious pathogens.

In these circumstances, it is very important to take an analytical stance. An analytical manager is the professional who uses qualitative data and quantitative data to be able to make more efficient and agile decisions. This is due to the fact that by adopting this position, the hospital manager is able to detect the strengths of the organization and identify the defects that need to be remedied in order to get better results in the shortest possible time.

In terms of staffing, hospital management must provide constant professional training, all the more

so as the challenges include the occurrence of cases of contagious diseases in wards for patients with non-communicable diseases. In this context, an essential action for the efficient management of the hospital is the constant training of employees.

After all, even if the organization has the best structure and the best equipment, employees are directly responsible for what happens to patients. These staff trainings must involve technical, behavioral and communication issues.

Efficient management invests in preventive maintenance and installations. Thus, two essential processes for a hospital are the maintenance of the equipment and the services that keep it in operation. In this regard, some smart strategies are to invest in preventive maintenance and facility management. Both help the hospital's management to ensure continuity of operations, cost reduction and patient satisfaction (***, 2022a).

At the same time, it is imperative that hospital management develop strategic planning. As in any other sector of activity, the hospital management must develop a complete strategic plan, connected to the socio-economic and military

realities of the moment. It should contain the organizational goals, the paths to be followed by the employees, the future goals and other data that guide the organization.

Paying attention to performance indicators should be one of the major goals of site management. Key performance indicators (KPIs) are great allies in hospital management and provide valuable information to specialists. This is due to the fact that, through predefined metrics, it is possible to monitor the results of the hospital's sectors and strategies. Consequently, through the KPIs, managers obtain valuable data to improve processes and constantly pay attention to the quality of services provided to patients, in conditions of controlled risk.

Based on technology and the purchase or rental of equipment, the modernization of healthcare institutions is not only due to innovative equipment but also to the purchase of services provided by professionals who do not belong to the hospital or healthcare sector, mainly. Under these conditions, hospital management can be based on several technical systems and software.

They organize hospital activities, monitor teams, store

critical data, and generate reports and many other features. All this helps to manage it more efficiently, as the processes become agile, flexible and secure. Services and products of a technical nature may be rented or purchased through the use of external funds managed by European bodies.

To promote in the profile market, sometimes even an investment in a sector or a marketing agency is required. Communication between hospitals and their patients has never been more important than it is today. For this reason, the marketing sector has become increasingly essential in the field of health. One reason for acquiring advertising services is that through the knowledge and strategies developed by professionals, organizations gain and retain patients more easily. In addition, they are beginning to position themselves more appropriately in the market, with high demand conditions and the emergence of new biological risks.

Last but not least, the implementation of change management strategies must be done with professionals, so that resistance to change does not affect the processes, as happened in many health facilities at the beginning of the COVID-19 pandemic. Fear, frustration, resentment must be

overcome and eliminated from the consciousness of the staff, being necessary for them to be aware that all transformations will lead to a better efficiency of the activity.

4. CONCLUSIONS & ACKNOWLEDGMENT

The transformation of hospital management needs to be achieved in order to optimize financial flows and ensure standard levels of biological protection, in the face of new challenges with the outbreak of the war in Ukraine and the emergence of waves of refugees. Applying change strategies at the staff level, through continuous training and professional training, is imperative.

In order to cope with the large volume of activity, hospitals need technical equipment, with the involvement of software applications. The application of marketing techniques will direct patients to the most appropriate hospital units for the conditions they report, thus relieving the pressure on the emergency units and reducing the biological risk to which staff is subjected.

Romania has a high income economy, which is why the invitation to join the OECD also involves the adoption of strategies to transform

the health system so that the supply of services is properly funded and patient-oriented. Under current pressure, hospital managers need to have measures in place to minimize the risk of transmitting contagious diseases and to keep all departments in working order.

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CHANGE MANAGEMENT: A WAY OF ENHANCING ORGANIZATIONAL EFFICIENCY

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Since the process of creating an organization is the implementation of activities in terms of effectiveness, any organization during operation must adapt to the new conditions that occur in the internal and external environment of adaptation, which more often requires organizational development through improved strategy, organizational structure, etc., resulting in increased effectiveness in the implementation of specific activities, where organizational development is defined as a process or a field of research that includes a wide range of activities.

Key words: *organizational change, organizational efficiency, change management.*

1. INTRODUCTION

The organizations represent a constant presence of the company's business. In this regard, the organizations are a permanent presence, which dominates the society even without leaving the impression. In terms of organization, proposed by authors over time, a multitude of definitions relating to "what is" and "what does it mean" organization, the emergence of multiple definitions with regard to the organization being linked to trends and schools of thought that arose and developed over time in the economic, sociological and psychological fields, political and administrative sciences. [3]

In an organization that operates efficiently, there is a alignment and articulation between mission, vision, values, policies, procedures, structures, organization and culture. A project of organizational development, although it is larger, has a long-term effect in the development of the organization. First of all, this project starts from a diagnosis of the situation, by conducting studies on customer satisfaction and organizational culture and

effectiveness, using methods and quantitative and qualitative tools. These studies show the link between the organization's strategy, structure, systems and styles of leadership and organization culture. Step two is setting goals to achieve. The next step is the forecast, which facilitates the achievement of plans for change and finding optimal solutions for achieving strategic goals. Step four is the implementation of the changes, where we can intervene by offering training and coaching solutions to facilitate the implementation of the plans. Step five is a permanent one which involves systematic alignment of the organization's philosophy to the way in which things happen. Such a project can last 6 months-2 years. [6]

Numerous aspects of organizational change have been detailed by various authors in the social and economic fields. These can be classified into: [1]

➢ Changes in the way organizations are established (legal status, ownership, scope of activities, etc.)

➢ Changes in tasks and activities (classification of products or services offered, suppliers, customers and markets);

➢ Changes in the technology used (equipment, processes, tools, materials and energy);

➢ Changes in management structures and processes (organizational structure, decision-making process, information system, internal control procedures);

Fig.1. *Organizational Change Management*

➢ Changes in organizational structure (management style, influences, values, and traditions);

➢ Changes in people (management, employee performance, competence, efficiency, work behavior and motivation);

➢ Changes in organizational performance (economic, financial, social, how the organization is integrated into the environment and fulfills the mission);

➢ Changes the image that the organization has created in business circles and in society.

Depending on the type of response to the environment, the literature has identified two main types of adaptive changes, namely:

- proactive;
- reactive change.

Depending on the degree to which the organization is ready for change, we can distinguish the following two types of change:

- Change is planned so that change is possible in advance and adequately prepared by the organization. When planning change, it is important to keep in mind that its success depends on both people and organizations having to cope with a limited number of changes within a given period of time, which vary from one employee to another, from one organization to another, and from one country to another;

- Unplanned change is natural change that results from the need to adapt and respond to situations that arise in the new environment.

- Depending on the way a change is implemented, we can identify it:

- The imposed change is initiated and carried out by changing the position of strength. Most of the time, this kind of change causes great resistance and dissatisfaction among the people involved. It is okay not to overdo it with imposed change, except for emergency situations where there is no time to discuss it and where not doing it or delaying it would be very damaging to your organization. Even in these situations, management has an obligation to explain to employees the decision to make a particular change precisely to reduce their resistance to change;

- Negotiated change is that type of change in which two or more affected persons or groups are involved and in which the actions to be taken are discussed. Negotiation is recommended when employee interests change, precisely to gain their support for successful implementation of the change.

Depending on the implementation of the change, four groups of change strategies are presented in the literature, divided as follows:

- Top-down strategies, in which employees are informed, assume that the organization's management sees the need for certain changes.

recruiting representatives from functions where the people affected by the proposed change sit. The main advantage is the extension of the issues affected by the change to multiple functions, as well as broader cooperation in implementing the change.

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Fig. 2 *Guiding organizational change*

- Bottom-up strategies place the responsibility for implementing change at the base of the pyramid, on teams of employees.
- Strategies between representative functions that require

The central problem of today's society is the management of change: we are facing changes in all areas of social life, political, economic and cultural. This is especially true for the organization of life - both in the public and private sectors. The na-

ture of our society is a series of inter-related, interdependent, bureaucratic entities, both public and private, that affect all aspects of life. We are born in organizations, we are educated in them, organizations spend much of our lives working in them. In developed economies, organizations produce goods and services on which we depend. They also create social roles, norms of behavior, and our value systems. [4]

The traditional universe of organizations provided some stability in our lives. The universe of organizations is undergoing a radical process of change. On the one hand, successfully initiating change and managing it can bring significant benefits to organizational survival, economic viability, and human satisfaction. On the other hand, failure to anticipate change, refusal to recognize the need for change, or delayed response to the organizational disasters that result can lead to a loss of control.

There are a number of obstacles that change efforts may encounter. By definition, change means a change in the status quo. So whenever change is initiated, resistance to it is likely to arise. Resistance is a legitimate and positive force when, from a relatively objective point of view, the change is harmful to the society that an individual or group of individuals is promoting. It is possible for individuals or groups of individu-

als who feel threatened to resist in order to counter the efforts of those who are trying to promote change. Resistance can be generated and changed through agent error. Resistance should be used constructively by agents of change. Whether active or passive resistance, an organization communicates a message, provides some data. [2]

Thus, the term represents the resistance analysis of various conditions that must be considered when selecting and structuring intervention strategies. A successful planning process can be one of the first steps in convincing employees that administrators and managers are involved in the change process only for the benefit of the organization. Peter Drucker points out that employees must be involved in planning for change. To successfully navigate the process of change, the various phases of the process must be carefully planned. To the extent that a process of change can be located on a temporal scale, can be identified three major stages:

1. The first phase is primarily concerned with assessing the current situation of the organization and its programs and identifying potential problems in devising alternative solutions;

2. The second phase, establishing a plan and ensuring implementation of agreed-upon consensus solutions. In many ways, this is the most important step for

a good schedule, reducing errors and driving actual implementation. Proper definition of the problems and formulation of alternative strategies are critical;

In the third phase, the success of the implementation is evaluated, and sometimes it is necessary to correct these actions properly. The transition process in organizations involves problems of technical, political, cultural and psychological nature. When you initiate a change, especially in the implementation phase, all these elements must be taken into account. [8]

such as structures, modes and systems. And yet reality forces us to change management, we rely on their individual and collective dynamics to mobilize them. [7]

Top-down communication by employees interested in change is certainly positive for information, but if no one hears the questions, participation will remain limited. Similarly, training employees to use a new device is important, but they rarely get around to evolving the way they work. In fact, changing actions, like breaking out emotions, raises questions, "What will happen to me?", "Will I be able to do what I ask?" or "Will not I lose what I did
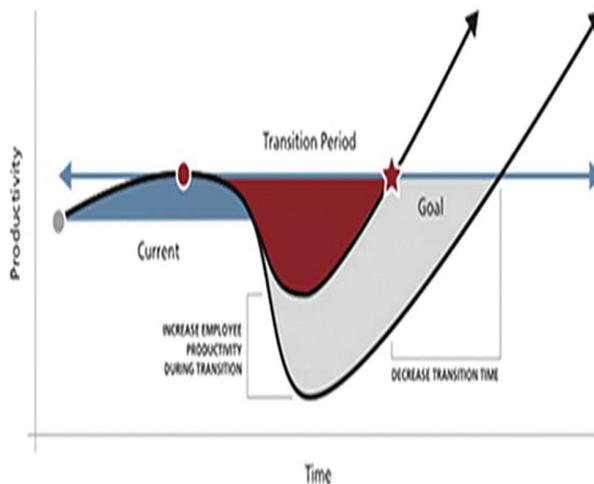

Fig. 3 *Managing change is key to productivity*

The change is usually represented as an iceberg, of which we do not see the submerged part. Generally, only the visible and operational aspects are dealt with,

today?" One of the most important tasks of change management is to respond appropriately to these questions in order to foster employee engagement.

Fig. 4 *Elements of a successful change of an organization*

In most cases, organizations call for a change in leadership, taking into account external conditions, because they do not have adequate internal resources. They may be present only at the beginning of the project or when difficulties arise. This is a sad fact, but it is not really justified. It makes more sense to recruit internally and form a change manager who will take advantage of the knowledge of the organization and its people, as well as its culture, its ways of communicating and working. And as change becomes more common in organizations, they have a vested interest in internalizing this expertise. [5]

2. CONCLUSIONS

The development of large companies around the world offers examples of success in business based on strong organizational cultures and stable decision-making, but also cases of failure, precisely because of the lack of flexibility of some infallible organizations. The last few decades of the development of the global economy in particular show that the only truly useful constant is change. What was present at a certain point in time in terms of efficiency and quality of activity proves to be useless or even embarrassing after a short time due to the rapid changes in the business environment. Corporate culture is in a constant process of change as it has to adapt to the environment both internally and externally. The external conditions created by suppliers, consumers, and especially the company's competitor's represent an environment that is constantly and rapidly changing. The demands

on the internal environment to foster employee engagement must change at the same pace. In order to align the interests of employers and employees at all levels and to ensure the efficiency of the results achieved, it is necessary to use all the expertise of the organizational level and to structure the achievement of synergies appropriately.

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LITERATURE REVIEW AS SCIENTIFIC METHOD IN DEFENSE RESOURCES MANAGEMENT STUDIES

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Literature reviews are the base of all types of research from defense resources management field. Therefore, any research should begin with an analysis of the literature relevant to the subject of the study, because this analysis allows the identification or positioning of the research in the current context. Literature review is, in fact, an analysis of what has been studied in the field so far, an analysis of the limits of existing research and the consequences of these limits, is an analysis that identifies the need to develop or complete existing studies. Metaphorically speaking, literature review is for scientific research what GPS (Global Positioning System) is for an object or entity on earth.

The aim of this article is to increase the quality of the scientific researches by presenting the literature review as a scientific method that can be used in the field of defense resource management at any time, even in times of crisis, which can provide valuable results with minimal resources only if the right type of review is properly chosen and are followed specific steps. Also, this article can be a guideline for beginner researchers.

Key words: scientific method, literature review, management, research, defense resources.

1. INTRODUCTION

Scientific research is the basis for the rational, sustainable and innovative development of defense field. The scientific research starts from an observation or a question, continues with the definition of a study object and with the formulation of some hypotheses, and later with the positioning of the study object within the scientific researches in the field of the study object and many other steps. This positioning of the object of study can be achieved only by mapping the scientific space of the field of study. This mapping is done by the method of literature review, which thus becomes the

foundation for all types of research in the socio-human, logistical and even informational and economic fields.

In the context of the exponential growth of data and the development of storage and processing systems through applications in the artificial intelligence field, it is becoming increasingly difficult to perform a literature review, and this article provides some easy-to-follow guidelines for conducting a rigorous and precise literature review.

A well done literature review, as a research method of study, creates a solid base for a complex scientific study or can become itself a research study.

2. CONCEPTUAL DELIMITATION

There is no universally accepted definition of *defense resources management*. However, generally, refers to defense organizations, which in order to fulfill the missions and objectives established by defense policies it is necessary to develop efficient and effective processes and mechanisms for planning, organizing, coordinating, executing and evaluating human resources, information resources, financial and logistical resources, on short, medium and long term.

In order to ensure a sustainable development and to integrate in the current geopolitical context the management of defense resources, it is necessary to carry out viable, objective and in-depth scientific studies.

According to the British dictionary, the *scientific method* is the mathematical and experimental technique used in constructing and testing a scientific hypothesis. The way in which observation is conducted, the interrogating of the observation's object and the search for answers through tests and experiments is not unique to any field of science. Thus, the social sciences, as empirical sciences, use mathematical tools borrowed from probability theory and statistics, along with their results, such as decision theory, game theory and operational research. Since the field of defense resource management is a field of interdisciplinary study, which integrates social sciences with economics and information technology, then the scientific methods used are very varied. [11]

Consideration of previous studies is essential for all areas of research, because in any research project, regardless of discipline, the author begins by analyzing previous research to map and evaluate the field

of research, to motivate the purpose of the study and to justify research hypotheses. This approach is called "literature review" or "theoretical framework" or "research fund" or "bibliographic study". [6]

Generally, *literature review* means identifying the bibliographic sources in the field of study, selecting the essential ones based on relevant criteria, synthesizing each selected bibliographic source, analyzing the syntheses and formulating the conclusions. Also, the finality of this process materializes in an article published in scientific journals where the research results are tested and evaluated by other researchers.

3. OVERVIEW OF SCIENTIFIC METHODS, TECHNICS AND INSTRUMENTS USED IN DEFENSE MANAGEMENT RESOURCES FIELD

We cannot talk about scientific research methods without mentioning Karl Popper or Thomas Kuhn, two defining personalities of the epistemology of the last century.

Therefore, a major contribution at the science theory was given by K. Popper who wrote in 1934 the book "*The Logic of Scientific discovery*", in which he presents the "Theory of Falsification" as a fundamental condition of

scientific research. He rejected the principle of induction, considering it scientifically unfounded, and proposed the hypothetical-deductive model. He considered that a single deviation was sufficient to invalidate a hypothesis, which remained true only for a long time, until it was invalidated (proved "false"). In his perspective, we do not start from pure observations (considered today an epistemological myth), but we always have certain hypotheses that we launch outside, because we do not have the observation, but we do it, and the world we live in is a world of invalidation of errors.[8]

Thomas Kuhn, the author of "*The Structure of Scientific Revolutions*"*,* written in 1962, and in which he introduces the term "paradigm" into philosophical-scientific jargon and elaborates an innovative definition of science: "*normal science means firmly based research on one or more past scientific achievements, achievements on which a certain scientific community recognizes them, for a while, as a basis for practice*" (e.g. Kuhn, 2008, p.72). It should be noted that Kuhn's theory has been widely criticized by other epistemologists, especially Karl Popper and his scientific community.

An analysis of the studies of the two scientists is not the subject

of this article, but I considered it necessary to mention them because disparate aspects of their theories are also found in current scientific research methods, even in defense management resources field.

There are a set of traditional research methods, technics and instruments which can be used, generally, in management field and particularly, in defense resources management field, such as: laboratory study and empirical study or qualitative studies and quantitative studies or deductive and inductive methods or analytical and synthetically methods.

But in defense resources management area the most objective and valuable results are obtained through integrative, trans-disciplinary studies, which used mixed research methods or defined and structured new research methods and tools. For example, the field of Naturalistic Decision Making (NDM) that was started in 1989 to understand how people make decisions in practice which was developed by Gary Klein and his collaborators. Because NDM researchers found that decisions made in natural environments characterized by insufficient information and analysis time are based on intuition, they issued the premise that laboratory studies do not allow the understanding of

intuition, as an essential factor in the decision-making process, because is not consciously generated.[3]

So, they used a complex method, Cognitive Task Analysis. Although methods of cognitive task analysis capitalize on components of the methods used since the late 1800s by psych-technicians, today it focuses on cognitive aspects of human-machine interaction that are not directly observable and is done to gain insight into knowledge representations, thought processes, mental strategies, and goal structures that underlie task performance, and the development of tools for training, testing and selection, for the development of expert systems and as a basis for computer simulations. The main sources of information for data collection are the observations and verbal statements of job experts, data that are collected both by the usual methods using interview techniques, questionnaires or analysis of team communication, and by other methods that include association techniques, sorting techniques, structure forming techniques and grid techniques. Also, for the analysis of cognitive tasks are used the method of critical decision, cognitive procedure and GOMS architecture. [13]

But, all these research studies started with a literature review that identified the limitations of existing

studies. Therefore, in the next part of the article I will analyze the literature review, as a single research study or as part of a complex research study.

4. LITERATURE REVIEW METHOD

4.1. Overview of literature review method

A literature review is first a synthesis of existing researches in the interest field by a set of criteria previously established, according with the objective or with the hypothesis of the study and then an analysis of the syntheses. A literature review include, also a synthesizing of each bibliographic source selected in accordance with study field.

Should be paid a particular attention to the selection and organization of bibliographic sources. For this purpose, 3 types of bibliographic sources have been defined: primary, secondary and tertiary. [20]

Primary sources are those documents that contain the original information, issued for the first time to present reality at a certain point in time. For example: scientific reports and journals, statistics, government documents, interviews, some manuscripts and biographies.

Secondary sources are those documents that contain interpretations, comments, criticisms, analyzes and syntheses of primary sources. For example: some biographies, reviews, textbooks, some articles in newspapers and magazines. Particularly, if the critical analysis of some primary sources generates new, useful information, then these could also be considered primary sources. [21]

Tertiary sources are the documents in which the primary and secondary sources are registered, stored and organized, in order to easily identify them. For example: bibliographies, library catalogs, encyclopedias and treatises. These can also be found online in catalogs such as Google Scholar, Harvard Business Review, Academic Search Premier, and many others. [20]

In order to be able to say that a literature review is well done, it must be evaluated, both in terms of the research methodology and in terms of its results. Therefore, it is essential that each stage of the research to be explained and to be accurately constructed, in order to facilitate the evaluation of the followed steps and the results obtained.

In Table 1 are presented the phases for conducting a literature review compared to those for evaluating a literature review.

Phases in conducting a literature review	Phases in evaluating a literature review
Phase 1: designing	
• Is this review needed and what is the contribution of conducting this review? • What is the potential audience of this review? • What is the specific purpose and research question(s) this review will be addressing? • What is an appropriate method to use of this review's specific purpose? • What is the search strategy for this specific review? (Including search terms, databases, inclusion and exclusion criteria etc.)	• In relationship to the overall research field, is this literature review needed and does it make a substantial, practical, or theoretical contribution? • Are the motivation, the purpose, and the research question(s) clearly stated and motivated? • Does the review account for the previous literature review and other relevant literature? • Is the approach/methodology for the literature review clearly stated? • Is this the most appropriate approach to address the research problem? • Are the methodology and the search strategy clearly and transparently described and motivated (including search terms, databases used, and explicit inclusion and exclusion criteria)?
Phase 2: execution	
• Does the search plan developed in phase one work to produce an appropriate sample or does it need adjustment? • What is the practical plan for selecting articles? • How will the search process and selection be documented? • How will the quality of the search process and selection be assessed?	• Is the search process appropriate for this type of review? • Is the practical search process accurately described and accounted for? • Is the process of the inclusion and exclusion of articles transparent? • Have proper measures been taken to ensure research quality? • Can it be trusted that the final sample is appropriate and in concordance with the overall purpose of the review?

Phase 3: analysis	
• What type of information needs to be abstracted to fulfill the purpose of the specific review? • What type of information is needed to conduct the specific analysis? • How will reviewers be trained to ensure the quality of this process? • How will this process be documented and reported?	• Is the data abstracted from the article appropriate in concordance with the overall purpose of the review? • Is the process for abstracting data accurately described? • Have proper measures been taken to ensure quality data abstraction? • Is the chosen data analysis technique appropriate in relation to the overall research question and the data abstracted? • Is the analysis process properly described and transparent?
Phase 4: structuring and writing the review	
• Are the motivation and the need for this review clearly communicated? • What standards of reporting are appropriate for this specific review? • What information needs to be included in the review? • Is the level of information provided enough and appropriate to allow for transparency so readers can judge the quality of the review? • The results clearly presented and explained? • Is the contribution of the review clearly communicated?	• Is the review article organized coherently in relation to the overall approach and research question? • Is the overall method of conducting the literature review sufficiently described? Can the study be replicated? • Is the result of the review reported in an appropriate and clear way? • Does the article synthesize the findings of the literature review into a clear and valuable contribution to the topic? • Are questions or directions for further research included? Are the results from the review useable?

Table 1: Phases in conducting and evaluating a literature review
Adapted from Hannah Snyder, Journal of Business Research, Volume
104, November 2019, Pages 333-339, *Literature review as a research
methodology: An overview and guidelines,* https://www.sciencedirect.com/
science/article/pii/S0148296319304564#bb0125

The comparative presentation of the two processes allows the easy observation of the connections between the two processes and the interdependence relations between them, as follows:

- Accurately going through each stage and making them explicit leads to the fulfillment of the condition of transparency and permits to another researcher to obtain similar findings by going through the stages presented in the study. [6]

- The realization of a logical and precise syntheses can leads to the fulfillment of the condition of falsifiability of the research.

- The analysis of the syntheses with objectivity, in depth and the clear explanation of the analysis can leads to the fulfillment of the condition of utility and innovation of the research.

Because, in the evaluation process of the literature review, the fulfillment of the following conditions is pursued: to be replicable, to be falsifiable, to be transparent, to be innovative and to be useful.

According with Hannah Snyder there are different types of review methodologies, such as: systematic, semi-systematic and integrative approaches. [6]

In my opinion, it cannot be said that one type of review is better than another, but that the type of review must be chosen in correlation with the defined purpose and object of study, because each type has its own characteristics that define it. Therefore, in the next part of the article, I will present the most important characteristics of each type of literature review.

4.2. Review – systematic type

Characteristics of literature review systematic:

- A systematic review can be explained as a research method and process for identifying and critically evaluating all empirical evidence that meets the pre-specified inclusion criteria to answer a particular research question or hypothesis. In this way, bias can be minimized, thus providing reliable findings from which conclusions can be drawn and decisions can be made [6].

- Initially, the method of systematic review was developed in medical science, later attempts were made to create guidelines in the social sciences and implicitly in defense resources management.

- These studies are also used to determine whether an effect is constant between studies and conclusions can be drawn about future studies to be performed to demonstrate the effect or can be used to find out which study level or sample characteristics have an effect on the phenomenon studied, such as whether studies conducted in one cultural context show significantly different results from those conducted in other cultural contexts [6].

- It have strict requirements regarding the databases in which articles are searched and selected for inclusion in the review.

- They are effective in synthesizing the collection of studies by providing evidence of the effects of existing studies, evidence that could be used later in developing strategies and policies and in operational and tactical practice.

- It is a good choice when you what to cover almost all articles ever published on the studied topic.

- It is not effective in the case of the study of broad topics, which have been subjected over time to interdisciplinary debates.

4.3. Literature review – semi-systematic type

Characteristics of literature review semi-systematic:

- A semi-systematic review can analyze how research in a selected field has progressed over time or how a topic has developed in different research paradigms. In general, the review aims to identify and understand all potentially relevant research paradigms that have implications for the subject studied and to synthesize them using meta-narratives, but does not allow measuring the magnitude of the effect [5]. Although this method covers a wide range of topics and different types of studies, the research process must be transparent and have a developed research strategy that allows readers or critics to assess whether the arguments for the judgments made were relevant to the chosen topic or if the methodological approach was the most appropriate.

4.4. Literature review – integrative type

Characteristics of literature review integrative:

- It is also called a critical review approach. An integrative review usually aims to evaluate, critique, and synthesize literature on a research topic in a way that allows for the emergence of new theoretical frameworks and perspectives [9] or to be able to re-conceptualize and expand. The theoretical foundation of a specific, mature subject as it develops. For emerging subjects, the goal is rather to create initial or preliminary conceptualizations or theoretical models and often requires a more creative collection of data from different fields or research paradigms.

- An integrative review method should result in a new conceptual framework or theory. Although an integrative analysis can be performed in several ways, it is necessary to ensure the transparency of the way in which the integration was done and the way in which the articles were selected [9]. Only in this way can well-done integrative analyzes make a valid and strong contribution to his

field of research, otherwise, in most cases, reviews labeled as integrative are only summaries of studies and are not really integrative.

4.5. Software used in conducting a literature review

There are some software which can be used in order to obtain a well-structured literature review in different domains, such as:

- Covidence, it is an online platform, the core component of the Cochrane toolkit, which supports parts of the systematic review process, including title/abstract and full-text screening, documen-tation, and reporting. Also, It is suitable for researchers and students at all levels of experience.[17]
- EPPI-Reviewer, is a web-based software developed by the Evidence for Policy and Practice Information and Coordinating Centre (EPPI) at the UCL Institute for Education, London. It provides comprehensive functionalities for different levels of coding and screening. It stores, references, identifies and removes duplicates automatically. EPPI-Reviewer allows full-text screening, text mining, meta-analysis and the export of data into different types of reports.[18]

- CADIMA, is a free, online, open access review management tool, developed to facilitate research synthesis and structure documentation of the outcomes. It was developed by the Julius Institute and Collaboration for Environmental Records to establish a software program to support and guide users through the entire systematic review process, including protocol development, literature search, study selection, critical evaluation, and results documentation. It allows for systematic mapping and quick reviews. [19]

5. CONCLUSIONS

A literature review can help identify areas where research is insufficient or contradictory. It is also a great way to summarize the results of existing research to identify their limitations and to discover areas where further research and development is needed.

In recent decades, as a result of the rapid evolution of information technology and its widespread use, new human needs have been identified and implicitly new objects or fields of study (as cognitive task analysis which has been developed to study human-machine interaction or as software in the field of artificial

intelligence), but the literature review in the field of study is still necessary, because it can map the field of study, can provide both input for extensive studies and new ideas and perspectives when it is done rigorously or can create guidelines for policies and practices.

The field of defense resources management is a complex and extensive field of research that can be understood and explained by rigorous studies conducted from the definition of the object of study and working hypotheses to the formulation of conclusions and evaluation of research quality.

Therefore, in order to have an effective start, it is necessary to carry out a well-organized and structured literature review, and in this article the essential information were presented in order to be able to do this.

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DEVELOPMENT OF WAR THEORY.
AN OVERVIEW

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It is impossible to find a nation in the world that has existed and still exists that has not faced the trials of war in its history and has not tried to emerge from this war with fewer losses and better results. As for the ways to achieve this, after various observations and generalizations, extremely different and dissimilar views and opinions have emerged from time to time. However, since these ideas and considerations could not go beyond the level of social evolution of the time, the issues of interest were explained in a simple way and were based more on subjective thinking. Although the conclusions of the authors of simple ideas, unscientific generalizations and theories are of historical importance, they failed to reveal the objective causes of wars and the regularities of war management. They also created misconceptions about the emergence and operation of wars. This article briefly aims to create a picture of the development of ideas and concepts about the essence and nature of war from ancient times.

Key words: *war, politics, military art, theory of war, state, military security*

1. INTRODUCTION

The history of military thought has very ancient roots. Even in the examples of oral creativity of the period predating the discovery of writing, one can find interesting ideas about the people's war trials, the struggle of good and evil, the heroism of the people's representatives and ways to win over evil (Светлов: 2009, с. 5; Микрюков: 2010; Ларкин: 2014). Even in the most ancient examples of written sources, there is a lot of historical

information about the wars of the time, their conduct, management and consequences. This information leads to the conclusion that the most diverse peoples of the ancient world sought to understand the nature of wars and their regularities, and also tried to form a certain experience in this area. Because the ability to wage wars in a specific historical context was considered as one of the main factors in the protection of statehood itself.

Although the earliest examples of the history of every idea to date contain different views on the causes of wars, most of these examples have viewed wars not as a chaotic, spontaneous event, but as a controlled process. In other words, the ancient intellectuals did not doubt that in order for wars to become a successful process, concrete measures must be taken, purposeful preparations must be made, and battles must be based on well-thought-out plans. In other words, providing the necessary guidance for the preparation and conduct of war was considered an integral part of such military success in ancient times.

2. ANCIENT AND MEDIEVAL THINKERS ABOUT WARS

More serious and logical approaches to understanding and comprehend the essence and nature of wars can still be found in the works of ancient Chinese thinkers and philosophers.

VI-V centuries BC, several interesting works on the theory of warfare appeared in ancient China. One of the works of special value in this regard is the 'Treatise on Military Skills' written by Sun Tzu, who lived in the VI-V centuries BC. Although Sun-Tzu's treatise is mainly devoted to the problems of military skill, it contains interesting views on the military-political activity of the state and the head of state in the field of warfare. According to the author, politics has a dominant role in relation to military work, and the direction of military activity is determined by politics (Handel: 1991, p.13). Explaining the nature of wars in his own way, Sun Tzu said that war is a great task for the state. It is the basis of life and death, the way to destruction or survival. (Светлов: 2009, с. 16).

The works of ancient Greek and Roman thinkers are a new page in the development of military science to understand the nature of war and to study the activities of rulers in connection with war. The high development of martial arts in the Greek and Roman states, the special role of wars in socio-political life did not escape the notice of thinkers of the time, and interesting

ideas and considerations about the nature of war has emerged. Although the political nature of the war is not properly revealed in these views and considerations, certain new ideas have been put forward about the responsibilities and duties of the military-political leadership of the state in connection with the conduct of wars. In this regard, conclusions and generalizations of the Greek philosophers and thinkers Socrates (V-IV centuries BC), Thucydides (460-396 BC), Herodotus (484-425 BC), Xenophon (430-354 BC), Plato (427-347 BC), Aristotle (384-322 BC), the Roman thinker Cicero (106-43 BC) and others are of scientific and historical importance for tracing the history of the development of military thought.

Socrates attributed the cause of wars to the inner qualities of the people. According to him, the main causes of war are human imperfection, the inability to distinguish between good and evil, as well as the violation of the rule of law within the state due to the fault of the rulers (Екадумова: 2012). According to the ancient Greek philosopher Plato, war is a natural state of nations, and therefore wars are both necessary and inevitable (Мильштейн et al., 1957, c. 10). In other words, as noted by experts, Plato put forward an idea that served to perpetuate war in human life. The Greek philosopher distinguished two types of wars, which he regarded as the natural state of nations - civil and foreign wars. Civil wars have no special place in Plato's theory. He did not consider the conflicts between the Greeks as a war. According to him, the war was a military confrontation between the Greeks and the barbarians. Plato regarded foreign wars as the greatest form of war, and he had a special respect for those who showed courage in such wars (Шерпаев: 1999, c.7).

There are a number of interesting ideas about the nature of wars in Aristotle's works. First of all, he is the author of the 'just war' concept. According to him, the main goal of just wars is to achieve peace and development (ван Альтен: 2015, c. 9). Aristotle also considered the wars for slaves to be a 'just war' (Мильштейн et al., 1957, c. 10). Aristotle also divided wars into two types - civil and foreign wars. He saw civil wars as conflicts within the Greeks, and foreign wars as wars with barbaric neighbors. Aristotle, who justified wars, said that they encouraged people to be just and restrained, and that living in peace would lead them astray (Екадумова: 2012, Глава 1).

Similar ideas can be found in the writings of ancient Roman

thinkers. For instance, according to Marcus Cicero (106-43 BC), the beginning of wars stems from the qualities inherited in human nature, that is, the desire to get rich and the desire for power. According to the author, these passions forced people to engage in armed conflict. Cicero added that human nature is not capable of avoiding war, it can only be included in the normative framework of human culture. According to Cicero, the formation of such a culture required great effort and hard work on the part of the people. It was assumed that after such efforts, people could determine the legal norms of warfare. (Ларкин: 2014). In the early Middle Ages, when Christianity had a strong influence in the West, it is possible to observe the strengthening of religious views on the nature of wars and their conduct. For example, the IV century theologian of Milan, Amvrosi (340-397) sought to explain wars from a religious point of view and called on Christians to take part in wars to protect them from religious infidels (ван Альтен: 2015, c. 12).

The idea of linking the essence of wars with religion can be observed in the works of the eleventh century oriental literary monuments 'Siyasatnameh' (Policy Paper) (Nizamülmülk: 2007) and 'Gabusnameh' (Keykavus:

2006). The 'Siyasatnameh' was written by Abu Ali Hasan ibn Ali Khaja Nizamulmulk, the vizier of the Seljuk rulers of the eleventh century. Nizamulmulk, who had extensive experience in statehood, also commented on state and military issues in his advice on public administration. Neither the 'Gabusnameh' nor the 'Siyasatnameh' has a separate opinion on the nature of wars. However, the general content of these works suggests that both authors linked the beginning of wars and their conduct with religious destiny. Amir Teymur (1336-1405) (Tamerlane), one of the great commanders and rulers of the military history of the East and the world, also linked the emergence of wars with religious origins, destiny, and pointed to its eternity. In the "Tuzuk"s (testaments) which are attributed to this great commander, Amir Teymur not only linked wars to religious destiny, but also to the need to establish peace in countries where oppression and violence took place and where Sharia law was not observed. That is why he considered it necessary for powerful rulers like him to intervene and start a war to end injustice in countries where the rule of law has weakened and disappeared. (Əmir Teymur vəsiyyətləri: 1991, s.89-91).

3. MACHIAVELLI AND EUROPEAN THINKERS ABOUT WARS

It is often observed that the special attention paid to the study of military knowledge in Europe emerged from the XV-XVI centuries. Among the intellectuals and thinkers of this period, the name of the Italian political thinker Niccolo Machiavelli (1469-1527) should be highlighted. Machiavelli, who authored a serious work on the subject of the military, The Art of War, saw the emergence and conduct of wars as a normal occasion due to his vision. According to him, one of the main tasks of the state and the rulers was to keep the wars in constant focus. Machiavelli suggested that the policy of the state should be aimed at achieving two main goals - 1) the acquisition of new territories and 2) the preservation of their freedom. He did not consider it right to impose any restrictions on wars. The author noted that states must be able to wage war and be ready for it, because the victory brings honor and prestige to the state. Machiavelli wrote that a wise ruler should think of nothing but war, the rules of war, the science of war, and that waging war is a task that the ruler should not entrust to anyone else. (Макиавелли: 1939, с.32).

According to Erasmus of Rotterdam (1466-1536), a Dutch thinker who was a contemporary of Machiavelli, the beginning of wars was caused by a decline in the level of morality and intellect among people. As he saw the monarchs as the cause of wars, E. of Rotterdam called on them to reconcile their interests in war and peace with the interests of the people. Therefore, he considered it important to subordinate foreign policy to the interests of the people, to strengthen borders to prevent wars and to expand trade relations between nations. The Dutch thinker was of the opinion that while the measures taken did not prevent wars, they could at least minimize them. (Екадумова: 2012, Глава 2). The German theologian Sebastian Frank (1499-1542) also linked the wars to subjective factors and the will of the people. Frank stated that people must wage war against wars in order to achieve peace, and he called such wars holy wars (Бочарников et al., 2013, с.12).

Since the 17th to the 18th centuries, European countries entered a new stage of economic progress. Such developments led to political activism, as well as opened a new page in the evolution of socio-political thought. From that period, a revival has been observed in the development of martial arts. The specific historical conditions were also accompanied by the emergence

of new theories of war, the emergence of new ideas and considerations about the role of the state in wars.

Thomas Hobbs (1588-1679), one of the philosophers and thinkers of this period, expressed his hatred of war, but also put forward the idea of its permanence. He attributed the start of wars to the imperfection of the human mind, the imperfection of the public consciousness, and did not rule out the presence of political elements. According to T. Hobbs, it was the desire to compete, distrust and gain fame that led people to war (Шерпаев: 1999, с.10). In the works of the XVII and XVIII century philosophers Charles Louis Montesquieu (1689-1755) and Jean-Jacques Russo (1712-1778), one can find some interesting ideas about the nature of wars. For instance, Jean-Jacques Rousseau, considered wars as a result of civil society dominated by private property. According to him, as long as there is private property, which creates inequality, there will be wars (Ларкин: 2014).

The works of classical German philosophers of the XVIII century and special contributions I.Kant (1724-1804) and Hegel (1770-1831) who made a special contribution to the development of philosophical thought, also contain a number of ideas about the nature of war. Kant described the natural state of people as a state of war. Kant also saw the instability of the internal situation in the country as one of the reasons for the war. According to Kant, a state ruled by lawlessness and injustice would always try to interfere with its neighbours. He saw such incidents as one of the reasons for the war in interstate relations. In his opinion, many states were trying to occupy the territory of another state in order to ensure lasting peace, which led to wars. In order to prevent wars that threaten humanity, Kant considered it necessary to establish lawful relations between states and to enlighten and morally improve people (Екадумова: 2012, Глава 3).

Unlike Kant, Hegel did not believe in the possibility of lasting peace between people and states, and tried to reveal the essence of war by applying a new method. According to him, a possible lasting peace could lead to stagnation in all spheres of life. On the other hand, development required a periodic movement among people. According to Hegel, wars arose from the nature of existing ones, and he saw these wars as a matter of protecting the spiritual health of nations. He believed that ultimately warring states would be strengthened, that internal strife would be prevented, and that nations would be more united. (Екадумова: 2012, Глава 3; Шерпаев: 1999, с.12).

4. JOMINI AND CLAUSEVITZ'S THEORIES ABOUT WARS

The rapid development of socio-political thought from the XVIII century laid the foundation for the formation of military science as a separate field. The independent formation of this field of science was also associated with the rapid development of martial arts, the need to develop a scientific and theoretical basis for the success of the growing mass wars. From this point of view, the XVIII and XIX centuries can be characterized as a period of revival of military science, military-scientific knowledge. Among the military thinkers of this period were the English general Heinrich Lloyd (1756-1763), the German Henry Dietrich Byulov (1757-1807) and the Austrian military man Erzerg Karl (1771-1847). In their writings, these generals focused more on war and martial arts. However, their work is of particular importance in raising military science and military thought to a new level (Свечина: 1926, с. 69).

The study of the nature and essence of wars has been raised to a qualitatively new level in the works of Henry Jomini (1779-1869) and Karl Clausewitz (1780-1831), who were at the height of world military-scientific thought in the nineteenth century. H. Jomini for the first time among military thinkers sought to create a theory that could shed light on all areas of military work. He tried to formulate his theory through the prism of military art, and therefore his military-scientific research was dominated by those issues, and he even envisioned war politics as one of the principles of it. It is clear from the author's subsequent explanations that the principle of war policy refers to the political nature of the war, and that this area is more relevant to the activities of state rulers. In other words, H. Jomini pointed to the political connection of war at the beginning of his famous work "The Art of War" (Jomini et al., 2007, p.7).

Jomini paid close attention to the assessment of the nature of the state's policy in determining the nature of wars. Jomini unequivocally accepted that wars were started by states. According to him, states engaged in wars in the following cases:

-To reclaim certain rights or to defend them;

-To protect and maintain the great interests of the state, as commerce, manufactures, or agriculture;

-To uphold neighbouring states whose existence is necessary either for the safety of the government or the balance of power;

-To fulfil the obligations of offensive and defensive alliances;

-To propagate political or religious theories, to crush them out, or to defend them;

-To increase the influence and power of the state by acquisitions of territory;

-To defend the threatened independence of the state;

-To avenge insulted honour; or,

- From a mania for conquest (Jomini et al., 2007, p.9).

H. Jomini also distinguished the following types of war: offensive wars to reclaim rights, of defensive wars from political point of view, and offensive in a military point of view, wars of expediency, wars with or without allies, wars of intervention, aggressive wars for conquest and other reasons, wars of opinion, national wars, civil wars, and wars of religion, double wars, and the danger of undertaking two wars at once (Jomini et al., 2007, p.10-26).

A more complete definition of wars can be found in Clausewitz's famous work on war. This work is a vivid expression of Clausewitz's lifelong research and experience, and remains one of the most valuable works on war in the world to date. Clausewitz, who achieved more serious and scientific generalizations by studying and continuing the military knowledge that existed before him, remains one of the greatest representatives of the history of world military thought. Clausewitz's theoretical legacy is one of the main sources cited today in the study of a number of areas of military work. In fact, Clausewitz's work can be considered the culmination and higher level in the history of military thought before him. Therefore, Clausewitz's scientific and theoretical work remains relevant until today.

One of Clausewitz's greatest contributions to the history of military thought was his insights into the nature of war. He defines war as duel on a large scale, an act of force (violence) to compel our enemy to do our will (von Clausewitz et al., 1976, p.75). In Clausewitz's view, the war should never be thought as an autonomous but as an instrument of policy (von Clausewitz et al., 1976, p.88). As he famously wrote, war is merely continuation of policy by other means. The political object is the goal, war is the means of reaching it (von Clausewitz et al., 1976, p.87). According to him political intercourse does not end with the outbreak of war, and this intercourse is not replaced by something else, ruled by no law but its own. On the contrary, he states that the main lines along which military events progress are political lines that continue throughout the war into the subsequent peace. Clausewitz wrote that political relations does not

stop between peoples and between governments when diplomatic notes are no longer exchanged as war is just another expression of their thoughts reflected in diplomatic notes. (von Clausewitz et al., 1976, p.605).

Clausewitz argued that war could never be considered in isolation from political relations. If this were attempted, the ropes linking war and politics would be broken, we would be left with something pointless and devoid of sense. It was said that policy converts destructive element of war into a mere instrument, by turning the horrors of war into an ordinary weapon, demanded that all forces be mobilized to raise this weapon. Since war is an integral part of politics, it has to accept the character of this policy. As policy becomes more ambitious and vigorous, then war also expands and becomes more dangerous (von Clausewitz et al., 1976, p.605-606).

According to Clausewitz, it is not right to make politics dependent on the war. Because policy provokes war, and it is a guiding intelligence and war is its instrument, not vice versa. Clausewitz wrote that war does not happen suddenly and that it is impossible to ignite it at once. War emerges as a continuation of a long-standing policy (von Clausewitz et al., 1976, p.607).

When Clausewitz spoke of politics, he was referring to a policy aimed at protecting the interests of the state on the basis of certain norms, rather than personal interests, the implementation of individual claims, and the activities of judges subjected to ambition. In order to clarify the nature of war, he also tried to clarify the nature of such a policy.

Towards the end of the XIX century and the beginning of the XX century, German Field Marshal Henry Moltke (1800-1891), French Marshal Ferdinand Foch (1851-1929), Alfred Schliffen (1833-1913), and Hans Delbrueck (1848-1929) contributed to the development of military thought and the formation of military science. These servicemen had a rich military experience, holding high military positions for a long time. Therefore, in the works of these military theorists, practical issues, more actual issues of military art of the time are more widely covered, and in their works, war-politics, war-state policy issues have not been the subject of such a broad analysis. Only Field Marshal H. Moltke devoted some space to military and political issues in his famous work "War Exercises" (Moltkes kriegslehren). However, in this case, he could not bring anything new to the views expressed by Clausewitz (Мольтке:1936, c.9).

5. SOCIALIST THEORY OF WARS

From the second half of the XIX century, the socialist theory of war began to take shape. This theory is associated with the names of Karl Marx and Friedrich Engels. The conclusions reached by Marx and Engels in defining the nature of wars and armies were regarded as a theory that even revolutionized Soviet military science. The socialist ideologues claimed that Marx and Engels, by criticizing the pre-existing military-theoretical knowledge, applied the materialist-dialectical method to them, laid the foundation of the objective science of war and peace, and developed a methodology for solving problems related to these issues (Волкогонов : 1984, p.7).

In the military-theoretical ideas of K. Marx and F. Engels, the views on the nature and causes of wars, the relation of war with politics, the classification of wars were written through class conflict. For example, according to them, the emergence of wars was associated with the emergence of class societies, private property. Marx and Engels emphasized that the strengthening of the exploitative nature of private property, the sharpening of contradictions within the exploiting society, and orientation of the results of material production mainly into the aggressive goals were the main causes of war. At the same time, they believed that the elimination of class society, private property would end the war. According to Marx and Engels, class inequality and antagonistic relations arising from class inequality within society were the main reasons for the outbreak of wars. They also argued that the policy that led to the war, accompanied by armed violence, was rooted in the inequality created by the economic relations of the exploiting society (private property). According to Marx and Engels, the cause of wars must be rooted in the economy regardless of the reason of its inception. In other words, inequality in economic relations eventually led to sharp confrontation and war. For instance, Engels stated that violence is a means of war. The goal is to gain economic benefits (Волкогонов et al., 1977, c. 18-19).

The theoretical approach of Lenin (1870-1924), characterized as a new stage of Marxism, is also characterized by a class approach to the definition and classification of wars, their causes and driving forces. It is known that the theory of socialism, founded by Marx and Engels, was continued by Lenin and raised to a new level. He was characterized as a great theorist and strategist of the socialist structure of

society and the proletarian revolution in the former Soviet military-historical literature (Азовцев:1981, c. 3). Lenin described the war as a continuation of politics by force, and stated that the basis of this idea was formed by Clausewitz. He regarded Clausewitz as one of the most profound philosophers on military issues, and wrote that Marxists rightly based Clausewitz's popular view of war on the nature of wars (Ленин: 1957, c.421).

According to the scientific and historical literature, although Lenin accepted the opinion of the German general and war philosopher K. Clausewitz that "war is a continuation of politics by other means", he replaced the phrase "by other means" with "violent means" and improved his thinking. But Lenin did more than improvement of one expression. He also approached Clausewitz's definition of war from a different perspective. Actually, the fact that war is an act of violence (war is an act of violence to compel the enemy to do our will) is also presented by Clausewitz as discussed in part four of this article. Lenin made his own definition by combining both Clausewitz's definitions on war. Even in some of Lenin's works, he simply repeated Clausewitz's famous idea and presented war as a continuation of politics by other means (Ленин:

1957, c. 76, 77). In other words, from a formal point of view, there is no difference between Clausewitz's definition of war and Lenin's definition of war. The difference is in the content behind each of them. In Clausewitz' view, the policy that led to the war was a continuation of the foreign policy of the states. He saw the war as a continuation of the state's foreign policy pursued by other means, such as the use of the army. In Lenin's view, the policy that led to the war was a policy based on private property and the existing economic relations, which were intensified between exploited and the exploiting classes.

Lenin argued that in a class (stratified) society, the country's domestic policy reflected the interests of the ruling class (stratum), so this policy had a strong influence on the nature and character of the country's foreign policy. It was the desire to secure the interests of the ruling classes that led to the war. Lenin unequivocally linked the beginning of the war with class interests, and saw the way to its elimination in the destruction of class society. In this sense, the term "violent means" in the phrase "war is a continuation of politics by violent means" was given a special meaning by Lenin, and this meaning was associated with class struggle. For example,

if this expression was replaced by "other means" (or means of force) as mentioned by Clausewitz, then Lenin's term "violent means" would have lost its political meaning. Because "means of force" could mean a legitimate armed forces organized and maintained by the state, however, "violent means" refers to an organization that serves the interests of the ruling class and is armed to ensure the interests of the ruling class by application of violence. Therefore, the destruction of class society, the abolition of private property, and the destruction of the armed forces which was an organization to implement the violence with dictum of one class on another class, was considered to be the main conditions for eliminating the causes of wars. Lenin saw the way to achieve this in the class struggle, in the destruction of the property class and the state that reflected their interests, in the creation of a proletarian dictatorship that would destroy this state (Ленин: 1957, c.373).

Thus, Lenin and his advisers began to fight for the establishment of the socialist revolution in the whole country against the private owners, who made up almost half of the population of a large country like Russia. This struggle was not only a political, ideological, economic and moral struggle, but also a military.

The Bolsheviks, led by Lenin, were able to gain the upper hand in this struggle through great massacres. The Bolshevik government was not only established in Russia, but also spread to the countries that had once declared independence from Russia through war. As a result, the requirements of Lenin's doctrine of war were implemented in both Russia and the Russian-occupied republics, and were accepted as the dominant ideology. That is, by inciting the civil war in the country, the private property class was destroyed and the power of the proletarian dictatorship based on weapons was established.

6. NEW APPROACHES ON WARS

As long as the Soviet Union and the socialist front existed, Lenin's theory of war continued to be an integral part of socialist theory. After the collapse of the Soviet Union and the end of the socialist front, new views on the socialist theory of war emerged. In particular, the military-political processes, wars and military conflicts that have taken place in the world in recent decades have given rise to many new ideas about the definition of war. It should be distinctly noted that Clausewitz's famous definition remains the leading thesis for defining the essence of war. However, as the global context

and technology evolves, so new approaches, ideas and thoughts on the nature of war emerges. As war is such a complex and multifaceted socio-political event that it is impossible to cover all its nature and aspects in a simple definition. On the other hand, the methods and means of warfare are changing in contemporary world. Most of the regional wars in recent years have been fought by non-state actors and are taking place on a smaller scale. At the same time, the use of asymmetric wars has increased. These also require further clarification of the concept of war in the academic literature. The emergence of new ideas and concepts for a deeper understanding of the nature of war is also related to this need.

It is impossible to comment all the ideas in one article and concepts put forward by various authors on the definition of war in recent years. There is also been disputes as to which forms of conflict to include and which not to include in defining war. This task has even been more complicated as word "war" has been used by the politicians to describe a whole array of policy agendas alien to traditional ideas of warfare such as a War on Drugs, a War on Poverty and a War on a Cancer and etc (Pilbeam: 2015a, p.88).

According to Bruce Pilbeam one of the most useful modern definitions of war is articulated by Hedley Bull, who defines it as (Pilbeam: 2015a, p.90):

"War is organized violence carried on by political units against each other. Violence is not war unless it is carried out in the name of political unit; what distinguishes killing in war from murder is its vicarious and official character, the symbolic responsibility of the unit whose agent the killer is. Equally, violence carried out in the name of a political unit is not war unless it is directed against another political unit." (Bull: 2012, p.178)

Like many other theorists and thinkers H.Bull also recognize violence as fundamental element of war. However, he does not limit war waging agents only to states by employing wider category of 'political units' which can also include non-state actors. Moreover, he stresses the importance of political units as warring parties that any armed to conflict to be called a war. This definition eliminates any armed conflict among parties for economic gains to be called as war no matter how severe are the consequences. Moreover, in this definition the war is considered war if only it is legitimate. However, no doubt the character of contemporary wars is

changing, the number of illegitimate conflicts is raising, monopoly on who wages legitimate war and a line between legitimate wars and murder or crimes becomes foggier than ever.

In the academic literature there are several labels that has been forwarded to describe the nature of contemporary wars such as 'postmodern wars' and 'hybrid wars' and 'new wars' in which the last one has achieved the greatest and most lasting prominence (Pilbeam: 2015b, p.105). Mary Kaldor, one of the most important theorists of new wars in her book 'New and Old Wars: Organized Violence in a Global Era' (published in 1998, 2006 and in 2012) distinguishing new wars from old ones with Clausewitz seen as the most significant theorist of the latter. Kaldor suggest that what policy makers and military leaders define as war is specific phenomenon which took shape in Europe between fifteenth and eighteenth century which bound up with evolution of modern state (Kaldor: 2012, p.15). Standing armies under control of the state was an essential element in monopolization of legitimate violence and state interest become the legitimate justification for war (Kaldor: 2012, p.19).

Kaldor argues that in the context of globalization and increased number of failed states, autonomy of states on monopoly of the legitimate organized violence erodes. In this environment all the essential elements what defines war, *goals, actors, finances and methods*, has changed. In new wars non-state actors such as paramilitaries, warlords, criminal gangs, mercenaries, private security contractors share the monopoly of using violence with state actors. Kaldor describes new wars as mixture of war (organizes violence for political ends), crime (organized violence for private ends) and human rights violations (violence against civilians) (Kaldor: 2012, p.207).

Kaldor claims that goals of new wars are about identity politics (claiming power on the basis of identity such as ethnicity, religion or tribe) in contrast to the geo-political or ideological goals of earlier wars (Kaldor: 2012, p.7). She argues that aim of contemporary identity politics is to gain access to the state for not to implement programmes in broader social interest as was the case in old wars, but to promote the agendas of particular groups (Pilbeam: 2015b, p.106).

Another main characteristic of new wars is related with how it is conducted. Kaldor argues that in conventional wars battles were the decisive and to capture territories was the goal of war. However, in new wars battles are avoided as

much as possible and territories are controlled through political control of population rather than military advances. The aim is to control population by getting rid of different identity and opinion by instilling terror which is achieved by mass killings, forced displacement, as well as range of political, psychological and economic techniques of intimidations. (Kaldor: 2012, p.7). Kaldor strongly argues that in new wars most violence is targeted against civilians rather than combatants (Kaldor: 2012, p.212).

The change in actors, goals and warfare leads to change in war economy. Kaldor call it new 'globalized' war economy which is exactly opposite of war economies of two world wars where source of finance was states and it was centralized. However, new war economies are decentralized. The finance is coming from external resources (humanitarian aid, diaspora, support from neighbouring countries), smuggling of valuable commodities (oil or diamonds or human trafficking), pillaging, drugs, and hostage taking (Kaldor: 2012, p.10). In these conditions continuous use of violence is key to keep economy to function which makes new wars longer and inconclusive. Here Kaldor argues that new wars tend to be mutual enterprise rather

than a contest of wills as is implied by Clausewitz. The contest of will implies that enemy must be crushed and therefore war tends to extremes. However, mutual enterprise implies that both sides need each other in order to benefit from its economy and therefore new wars tends to be endless and actors are interested in enterprise of war rather than winning or losing. The inner tendencies of new wars are not war without limits (in terms of application of force/violence) but war without end (Kaldor, 2012: p.218). In Kaldor's definition war is not an instrument to subdue your enemy, on the contrary it is an instrument together with your enemy waged on civilians for political and economic gains.

Furthermore, Sean Mcfate, a professor of war in US National Defence University, in his book New Rules of War in Durable Disorder, challenges some commonly accepted fundamental characteristics of definition of war. He argues that believing that wars are fought purely political reasons are wrong, as economic self-interest is not less important than the political self-interest (McFate: 2019, p.180). Another commonly accepted character in war definition he challenges is that of who gets to wage war. Assuming that states – only states – have the privilege of legitimately

waging war is a Westphalian idea, which is an obsolete and wrong as he argues that war has move beyond most war experts' understanding (McFate: 2019, p.181). Mcfate agrees with majority that 'war is the armed politics' which is the only true law of it. In this line he sheds light on two aspects of this definition. Firstly, this idea (war is the armed politics) means that victory is as much political as military. Moreover, he reaffirms greatest thinkers by recognizing that war is neither inherently evil, nor it is inherently military although it does involve organized violence, or the threat of it, and it does wreak human suffering. It will be failure to search for bloodless solutions to bloody problems, resulting in greater bloodshed. Here, Mcfate argues that militaries misread this powerful truth by preferring to eliminate the enemy first, then negotiate political issues second. However, you do not need to win battles to win the war (McFate: 2019, p.222).

In the second aspect of the definition, Mcfate proposes that politics is not the sole province of states, and war can be waged by the state and nonstate actors alike. It can be waged for many reasons, for economic gain, religious beliefs, identity, culture, glory, revenge, and many other things, in addition to purely political ones. Additionally,

he rejects classification of war as 'conventional' and 'unconventional' and stresses that there is only a "war" (McFate: 2019, p.184). He also makes clear difference between war and warfare, as the nature of the first one does not change, but the latter change due to weapons, tactics, technology, leadership and circumstances (McFate: 2019, p.27). In this regard, he claims that in contemporary global context the political power does not come out of barrel of gun (McFate: 2019, p.104) as his main thesis in the book formulates around the idea that brute force, military power is not the determining factor anymore in winning wars. There are other powerful means like weaponizing refuges, information, election cycles, money, and the law (McFate: 2019, p.228).

What is certain that contemporary wars, however they are called, are very different to those of the past in terms of actors, goals, warfare and sources of finances. In modern context, with impact of globalization, increase number of failed and weakening states, character of war has changed. States has lost its monopoly in use of legitimate violence. Legitimacy of violence has also lost its ground in contemporary wars. All sorts of non-state actors are waging wars for many reasons other than political ones. In these realities

sticking to one simple definition of war makes it hard to capture the character of new wars.

7. CONCLUSIONS

No doubt wars have always been the indispensable part of human history. It would be naïve to wish for a world without war. However, understanding essence of it, could minimize the effects of it or would enable those actors that would attempt to stop it. The debate on the cause, nature and ways to conduct it will always be topical theme of human history. From the earliest times, intellectuals have tried to express their thoughts and ideas in this direction. Clausewitz's definition of war has played an important role in defining the nature of war. However, as we see in the discussions of new war theorists even challenge the ideas of Clausewitz which has been the reference point for the wars of last two hundred years. The monopoly of states on legitimate use of violence is seriously challenged, even so the goals to conduct wars demonstrates different patterns than previous ones. Non-state actors are as capable as states to wage wars. Those who are responsible for the national security of country from foreign aggression believe that 'subduing enemy with brute force is the way to achieve one's political goal' eventually will

have totally different approach to 'war' as an instrument than others who believe that political power does not stem from the barrels of gun anymore or from who believe war itself is the goal as mutual enterprise for political and economic gains. To provide a single definition to war risks to oversimplify the phenomenon which could ultimately hamper understanding its essence.

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ENCRYPTED CLASSIFIED VOICE INFORMATION AND THE MANAGEMENT OF ITS SUSTAINABILITY

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The problem of management of the reliable information security is one of the most important problems of our time. The problem of protecting information from unauthorized intervention and external impact is always topical and seriously investigated. A modification of the encryption algorithm related to the symmetric encryption method during the transmission of classified voice information is consudered in the paper. A management of the assessnent of a level of protection of encrypted classified voice information against cryptographic attacks is investigated by using of calculation of the keys number of encrypted data. This method is based on the rule of reflected sliding encrypted voice information.

Key words: voice information, symmetric encryption, decryption, calculation method.

1. INTRODUCTION

The problem of protecting information from unauthorized intervention and external impact is always topical and seriously investigated. In this regard, the value of the concept of information security is growing in connection with the development of human society, the emergence of private property and the further expansion of the scope of human activity. The emergence of personal computers, local and global networks, satellite communication channels, an effective technical reconnaissance and confidential classified information has significantly exacerbated the problem of information protection. Thus, the problem of management of the reliable information security has become one of the most important problems of our time [Sichev:2007, p.9].

Currently, the main target of cyberattacks is information exchange systems between users - sources. In this sense, Azerbaijan pays

special attention to the protection of the confidentiality of national information sources and the security of military information. To ensure information security in the public and private sectors of the country, normative legal acts have already been prepared, the articles of the Criminal Code on the prevention of cyber attacks have been improved. Laws on protection of state secrets have been amended and other important steps have been taken.

Voice information (speech) has a special place among the information required for secure exchange. Numerous objective and subjective factors influence the expansion and development of the technical arsenal used for the protection of voice information. From this point of view, considered to be taken into account during the study of the issue of ensuring confidentiality in the process of transmission of the conversation the following opinions have been formed:

- Human speech and hearing aids are considered to be a perfectly adapted and obstacle-resistant system, in this regard, small distortions in speech do not prevent its understanding [Kravchenko: 1999; Tsviker & Feld-keller:1971].
- Devices and communication systems involved in the processing and transmission

of voice information are constantly progressing and developing. For mobile devices and computers, the speech interface is considered the most convenient way to exchange information. Appropriate changes affect leaks of speech information, as well as methods of unauthorized access to this information. This process requires an adequate approach to the development of defense strategies and the improvement of methods for the protection of speech signals.

- In principle, new automated and computerized processing systems are becoming more widespread. These systems process, collect, and store large amounts of information, including speech. In this regard, the development of new technologies and methods of protection management of speech information is required [Grishin: 2008].

The choice of methods of encrypting and decrypting the transmitted data in order to secure it is, as always, relevant in modern times. The purpose of choosing these methods is to prevent outside interference in the transmitted

information. Encryption has always been the target of encryptors. Once encryptors have created tools that can detect vulnerabilities in encryption, it makes no sense to use this encryption rule.

The proposed encryption methods for transmitting information are reflected in many articles [Bauer & Friedrich:2007; Encyclopedia:2005; Shayer:2003; Singh:2006; Pashaev et.al: 2016a; Pashaev:2016b; Hasanov:2019]. Which of the proposed methods is preferred depends on both the type of information being collected and the area to which it relates. The complexity of the encryption process can make it difficult to decrypt. New algorithms are added to the encryption process to protect against crypto attacks.

The application of floating-point encryption to voice data encryption is described in detail in [Hasanov:2019a]. During the investigation, some technical problems were encountered in solving the problem. In order to eliminate these problems, or not to encounter them again, it is necessary to add innovations in the process of data encryption. Therefore, it is necessary to take other measures. These problems include the fact that the length of the keyword plays a special role in the encryption of voice data, and the closeness of the data obtained without encryption with similar keywords.

2. PROBLEM STATEMENT

Let's take another look at the method of encrypting voice data [Hasanov:2019b]. It is believed that the encryption operation is carried out by using of a program controlled by the operator. Like text-based information, voice information is also vulnerable to cyberattacks. To protect such information, the article [Hasanov:2019b] provides an algorithm for generating a second keyword using the primary keyword and an encryption algorithm using a second keyword. Voice information protected in this way requires an investigation into the reliability of encryption during a cyber attack.

The problem that a third party will encounter when attacking this information will be to set the primary keyword encrypted by a special algorithm. Exploring the different options for assigning such a keyword will certainly take a long time. It should be noted that the importance of a number of characters in the primary keyword is large. The greater the number of characters that make up a keyword, the longer the time it takes to identify it. The problem statement is to estimate the amount of time it takes to decrypt a data in a cyberattack, depending on the number of characters in the keyword.

3. VOICE DATA ENCRYPTION MECHANISM

Before solving this problem, let's recall in detail the mechanism of the method of sliding imaging encryption of voice information [Hasanov:2019b].

Normally, in order to transmit voice information expressed by "0" and "1", it is digitized from a microphone or received from files with audio content, divided into parts called "chunk", and then transmitted on the basis of protocols based on appropriate rules. For such transmission, it is important that the transmitter and receiver operate on the same protocol. The mechanism for sliding imaging encryption of voice data is that the parts of the data are chunked and encrypted with the known keyword. This encryption procedure can be described in more detail as follows: For the first chunk, its digits "0" and "1" are added to the beginning of the keyword of the same length, and the next "0", which forms the keyword for encrypting the next chunk. or a sequence of numbers "1" is applied. This process is repeated for each subsequent chunk. If the number of characters in the keyword is not enough for any "chunk", then the key is returned to the beginning of the word and applied to the missing part in the previous order.

The decryption procedure was the complete opposite of the encryption procedure. It is necessary to deduce from the accepted "chunk" the parts of the keyword expressed by "0" and "1". In essence, encryption means that the part of the keyword that is involved in the conversion imaging process is shifted along the word to "chunk" each time.

In order to complicate the decryption process during a cyber attack, in addition to the procedure given in [Hasanov:2019a] in the process of encrypting voice data, two more algorithms [12] had been proposed for performing the procedure.

In order to complicate the decryption process during a cyber attack, in addition to the procedure given in [Hasanov:2019a] in the process of encrypting voice data, [Hasanov:2019b] proposed two more algorithms for performing the procedure. The problems can be solved by implementing two additional measures - the procedure, in addition to the operation of collecting codes during the application of this encryption algorithm. In order to complicate the decryption process during a cyber attack, in addition to the procedure given in [Hasanov:2019a] in the process of encrypting voice data, [Hasanov:2019b] proposed two more algorithms for performing the procedure.

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to the operation of collecting codes during the application of this encryption algorithm.

The purpose of this algorithm is to bring the volume of the entered primary keyword into a "chunk" order. So, to get an "extended keyword", you need to make an additional "extension" to the original keyword, which differs from each other many times and is not repeated. The mathematical algorithm of this procedure can be interpreted as follows (Algorithm 1): after dividing the length of 1 "chunk" (1600 bytes) by the length of the primary keyword consisting of k characters, the number of additions required to extend it is found. This number is denoted by N. Then the codes of the characters in which the keyword is composed are calculated by multiplying their numbers by 2 and N + 1, respectively, and these examples are placed side by side to obtain an "extended keyword".

In data obtained from reflected sliding encrypted data using similar keywords that differ by several characters, the characters that differ from each other form a set with a very small density in the sequence of all characters in the information. Due to the robustness of the auditory organ, a person perceives the elements of this set as noise, but the low density of this set in the general flow of audio information does not prevent it from being understood well enough. To solve this problem, it is proposed to use a procedure in which each character of the keyword participates in the encryption of all characters of voice information. This algorithm can be expressed, for example, as follows: a "derivative keyword" can be obtained by performing the following mathematical operations on a primary keyword consisting of k characters:

$$B_j = \sum_{i=1}^{k}(i+j) \times A_i, \quad j = 1, 2, \ldots, k.$$

Here, $A_i, i = 1, 2, \ldots, k$ are the characters that make up the primary keyword, $B_j, j = 1, 2, \ldots, k$ are the characters that make up the "derivative keyword". It is easy to see that changing any character in the sequence $A_1 A_2 A_3 \ldots A_k$ of the "primary keyword" causes all the characters changing of the "derivative keyword".

4. EVALUATION OF THE RESISTANCE OF ENCRYPTION ALGORITHM TO CYBER ATTACKS

In order to apply the full counting rule to all possible keys, it is necessary to know which the crypto-analyst of cryptographic system is used. This method is used much because it is available easy [Dudenko:2002]. It should be noted that due to the rapid development of

information technology, increasing the size of computer memory and increasing the frequency of operations, the duration of resistance to cryptocurrencies can be reduced by the full counting of keys. While the similarities in the application of the full counting rule for all possible keys to the disclosure of text-to-text information and voice-to-voice information are that all possible keys are considered [Pashaev: 2016b], the principles governing the decryption of each key are different.

Thus, if the fact of decoded text-type information is explained by the fact that the received expressions are in the existing dictionary, the fact of decodeding the spoken speech information can be determined by the presence of a sufficient number of speech breaks indicating that it consists of separate parts. In consideration of that this criterion is used for crypto-attacks, the resistance to such an attack can be assessed as follows.

Let's denote the number n by all the characters of the alphabet used in the encryption system. It is believed that the length of the keyword is limited from below and above. Let's denote the minimum number of characters that make up the keyword as , the maximum number as . Then the number of keys that can be corrected using the number m of all characters of the alphabet is . It is estimated that at least half of the combinations must be verified to verify that they have a decryption key. Let's denote the check period t of a key by according to the rule of full counting of keys. Then the time required to find the key in this way is calculated as follows:

$$T = \frac{t}{2} \sum_{m=m_0}^{m_n} n^m \quad (1)$$

It should be noted that the length of the keyword is usually 15-25 characters. For example, in [Yaglom & Yaglom:2007] the number of alphabetic characters is $n = 35$ and the time taken to verify a key is $t = 2$ seconds. Then, depending on whether the secret key consists of $m = 3,4,5$ characters, the following evaluation table is obtained for the average decoding time according to the formula (1) (Table 1):

Table 1. Decryption time depending on the number of characters

The length of a secret key (number of characters)	m	3	4	5
The time required to find the key (necessary number of days)	T	0,5	18	626

The formula (1) allows you to determine the minimum length of a keyword, depending on the degree of relevance and relevance of the information being transmitted. For example, based on Table 1, it can be said that a 3-character keyword can be used to encrypt the information transmitted over a conversation only if the urgency of protecting the information is measured in hours. If the relevance of the information is measured in years, the number of characters in the keyword should be 5 or more characters, depending on the time period.

5. CONCLUSION

Thus, the presented paper considers the issue of assessing the resistance to attempts cyber attacks in order to decrypt encrypted voice information using sliding encrypted encryption method. To assess the continuity of decryption of speech-type voice information, a formula is given that determines the average time of decryption based on the verification period of a key in accordance with the rules of full counting of keys. This formula allows you to determine the minimum number of characters in the key used to encrypt information, depending on the degree of relevance.

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UNITED NATIONS CHALLENGES AND OPPORTUNITIES

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The UN organization sustain that is universally recognized as a platform for reliable collaboration and with an important role of preventive diplomacy in maintaining peace and security in the world. This approach announces the importance of a new era of multilateralism, where the countries of the earth are working together to solve global problems, the international system is working quickly to protect everyone in the event of an emergency. The paper aims to present the report "Our Common Agenda"which sets out the vision for the future of global cooperation.

Key words: UN , international relations, international agreements

1. INTRODUCTION

As the UN organization launches his projects in this decade of action - 10 years to make real progress and to fulfill the promise of a sustainable and fairer future by 2030 - there is an opportunity to reshape the world for the better, with multilateralism at the center of the process. In his speech to the General Assembly, Mr Guterres stressed that "Our Common Agenda", is led by solidarity "the principle of working together, recognizing that we are linked to each other and that no community or country can solve its challenges alone".(UN, 2021).

This approach announces a new era of multilateralism, where the countries of the earth are working together to solve global problems, the international system is working quickly to protect everyone in the event of an emergency, and the UN is universally recognized as a platform for reliable collaboration.

The celebration of the 75th anniversary of the UN in 2020 sparked a major internal discussion about the future of this world organization and a new direction that is moving away from the consensus regarding its activity as it was conceived, after of World War II.

These reflections culminated in the "Our Common Agenda", a landmark report launched by the UN Secretary-General, which sets out its vision for the future of global cooperation. António Guterres presented this report at a meeting of the United Nations General Assembly, which described the precarious state of a world in enormous stress and threatened by "serious instability and climate chaos. From the climate crisis to our suicidal war against nature and the collapse of biodiversity, our global response is too weak, too late. Uncontrolled inequalities undermine social cohesion, creating fragilities that affect all of us. Technology is moving forward without safeguards to protect us from its unintended consequences," the secretary-general said. (UN, 2021).

2.THE REPORT "OUR COMMON AGENDA"

The secretary general António Guterres described the extensive consultations that contributed to this report, a listening exercise that led the UN to conclude that stronger multilateralism is the way to deal with global crises.

In the report "Our Common Agenda", two futures are presented: one of perpetual collapse and crisis and another where progress is made toward a greener and safer future. The scenario of the day describes a world in which the new coronavirus is constantly changing as rich countries accumulate vaccines and health systems... In the future described in the report, our planet becomes uninhabitable because of rising temperatures and extreme weather events, and one million species are in danger of extinction. These changes are accompanied by the continuing erosion of human rights, the massive loss of jobs and incomes for most people on the planet, and by the growing protests and unrest, which are faced with violent repression. (Marien, 2021)

"Our Common Agenda", also shows how we could go a different way, sharing vaccines with each other fairly and triggering a sustainable recovery in which the global economy is reorganized to be stronger, more resilient and more inclusive. By decarbonizing the economy, rising global temperatures could be limited, countries heavily affected by climate change would be supported, and ecosystems would be preserved for future generations, according to the report. The importance of protecting vulnerable groups is recognized in gender equality and does not leave anyone behind by promoting commitments that include strengthening social protection and promoting gender equality.

Ensuring a more sustainable global economy is identified as an objective, with support for the

poorest and a fairer international trade system.

Action against the climate receives a special mention of commitments to limit heating to 1,5 degrees Celsius above pre-industrial levels with zero net carbon emissions by 2050, and with the cessation of subsidies for fossil fuels, a transformation of food systems and a set of measures to support the development of the countries concerned.

Taking into account the current health crisis created by the Covid-19 pandemic, the report calls for a vaccination plan of USD 50 billion to double at least vaccine production, ensuring that it will reach at least 70% of the vaccine production required from 2022.

In order to achieve all these objectives, the UN Secretary-General recommends holding a future summit, which "would create a new global consensus on the issue of our future and how we can guarantee it". The summit will address the perennial problems of peace and security, setting out a "new agenda for peace", with more investments for peace-building, support for regional conflict prevention and risk reduction strategies for nuclear weapons and cyber war and a dialog to ensure that space is used peacefully and sustainably. (UN, 2021).

Respect for human rights should be discussed at the Summit of the Future, as well as a Global Digital Pact, to ensure that new technologies do not violate human rights. Other avenues would include the peaceful and sustainable use of outer space, as well as the management of future shocks and crises.

The summit, Mr Guterres said, should take into account today's complex context for global governance; the aim of building more inclusive multilateralism and networking, navigating in this complex landscape and providing effective solutions.

In preparation for the UN Summit of the Future, the report proposes to hold biennial high-level meetings of Heads of State and Government, as well as between G7, G20, ECOSOC, Heads of International Financial institutions and the UN Secretary-General, deciding on an inclusive and resilient global economy. (UN, 2021).

The report also calls for better partnerships between governments, multilateral organizations, the private sector and civil society and for an emergency platform to better prepare for global crises, with improved global health security. One example is the creation of a Laboratory for the Future, working with partners such as governments, universities, civil society and the private sector, to publish regular reports on the mega trends and disaster risk on the Earth. In addition, measures on education,

vocational training and lifelong learning are proposed, including a 2022 Education transformation Summit to address the learning crisis. And extending the opportunities and hopes of 1,8 billion young people globally, as well as a World Social Summit to be held in 2025, which would coordinate international efforts to create peaceful and secure societies based on human rights and dignity for all.

These meetings would coordinate efforts to implement inclusive and sustainable institutions and policies, enabling countries to provide basic services and social protection to their citizens. One of these institutions is, of course, the UN itself, which the report says needs to be improved, with a more participatory and consultative approach, and that civil servants achieve gender equality by 2028, that the Secretary-General's Scientific Advisory Committee be re-established, and that a policy that puts people at the heart of the United Nations system, taking into account age, gender and diversity. (Beisheim, 2021)

Other proposals concern improving young people's participation in the political process and efforts to reduce their unemployment. The report recommends the appointment of a special envoy for future generations, to give weight to the interests of those born this century and to a new UN Youth Office to strengthen engagement with young people throughout the work of the Organization.

In his speech to the General Assembly, Mr Guterres stressed that our common agenda is led by solidarity, "the principle of working together, recognizing that we are linked to each other and that no community or country can solve its challenges alone". The fact that the 75th anniversary came during a global health emergency highlights the importance of multilateral thinking: in 2020 the Covid-19 pandemic emerged, which came amid growing concern about the climate crisis, another urgent issue that does not respect national borders.

In early 2020, 1,5 million people participated in a global United Nations initiative, a one-year survey to listen to people's priorities and expectations about the impact of international cooperation on the future. They shared their hopes and fears, calling for the UN to be more transparent and inclusive, and identifying climate and environmental issues as the global long-term challenge.

"Our Common Agenda", builds on the conclusions of this initiative as well as on input from thought leaders, prominent groups, as well as graduates, diplomats and

other partners, providing suggestions and solutions, actions of ideas and imagining the next 25 years of the UN.

The report calls for reaffirmation of the fundamental values of the United Nations, while acknowledging that the foundations of the Organization must be reformed in order to better reflect today's world. The report also recognizes the urgent need for action: the climate crisis is an existential crisis for all human life and can only be resolved if the international community works effectively together beyond borders, to put an end to accelerated global warming and to adapt to the damage it has already caused.

3. THE LINKS BETWEEN SOCIO-ECONOMIC FACTORS AND CONFLICTS

For his part, the president of the 76th General Assembly, Abdulla Shahid, said "over the decades, the United Nations has learned more about the link between socio-economic factors and conflict, noting that the Covid-19 pandemic exacerbates inequalities, climate crises lead to displacement and inefficient institutions steal hope for people. In addition, the absence of democratic participation, political freedoms and equality deprives entire populations of their human rights.Global security is the responsibility of the Security Council and can be complemented by the efforts of the General Assembly and the UN Economic and Social Council (ECOSOC) in their effort to build more resilient and prosperous communities". (UN, 2022).

ECOSOC President, Collen V. Kelapile, recalled the organization's mandate is to promote economic and social progress in all peoples, to protect human rights and to supervise humanitarian and development systems, by establishing links to prevent conflicts. The continuing suffering in the Sahel region of Africa "because of the inability to appreciate the complex interaction of human survival in a very fragile and culturally diverse environment, it is an example. And extreme poverty in South Sudan has its roots in more than 50 years of conflict, while Haiti's vast challenges stem from historical and structural inequalities, government deficits and vulnerability to climate change".

However, despite the UN's interdependent mandates to deal with such crises, the interactions between them remained sporadic: "Today's complex challenges require more institutionalized collaboration," Kelapile said. (UN, 2022).

Speaking before the Security Council, the President of the International Court of Justice (ICJ), Joan E. Donoghue, explored ways the ICJ can help prevent conflicts;

she said States can use the court as a means of resolving disputes to defuse resource tensions, land borders, sea borders or other sources of potential conflict. While the circumstances and requirements of each case vary, all the main bodies of the United Nations have the possibility, within the limits of their respective competences, to contribute to the implementation of the judgments of the Court and to contribute to the promotion of peace, security and justice. The court itself is ready to receive any request for advisory opinion that UN specialized bodies and agencies can formulate," Joan E. Donoghue.

4. CONCLUSIONS

During a UN Security Council debate on the role of preventive diplomacy in maintaining peace and security in the world on 16 November 2021, UN Secretary-General António Guterres said prevention is not only a political tool but also "a realistic path to peace .In front of the members of the Security Council, the UN chief regretted that prevention does not always receive the attention it deserves.

"Perhaps this is because it is difficult to measure the results of an avoided conflict. But prevention is absolutely essential for lasting peace. Prevention is also the reason for the existence of the United Nations. (Gehrmann, 2021*)*. Because prevention is essential and conflict

is not inevitable and preventive diplomacy works," he told the members of the Security Council. He remembered using his good offices - sometimes publicly, sometimes behind the scenes - to seek to defuse conflicts and promote peace." "A central part of our prevention strategy is working with regional and sub-regional organizations," he said, citing in particular the African Union, the Association of Southeast Asian Nations (ASEAN) and the European Union.

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