

MILITARY CAPABILITIES AND THE STRATEGIC PLANNING CONUNDRUM

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Abstract

This paper aims to question the military capability concept, as a core element of the strategic military planning process, in order to determine its validity or need for expansion. Thus, based on a deductive approach and qualitative research, we argue that the strategic planning process is a conundrum so dependent on capabilities that it is necessary to analyse this concept per se and, if necessary, expand it on a time and threat basis. Otherwise, the more ambiguous the concept, the more subjective the planning process output and, consequently, the greater likelihood of the Armed Forces not being prepared to face the wide range of future challenges. It concludes by suggesting that the military capability concept should be expanded and more integrated and the strategic defence planning process adapted accordingly.

Keywords: Military Capability, Capability-Based Defence Planning

Introduction

Military organisations struggle today in an environment located somewhere between complexity and chaos where not only non-conventional, but also “reborn” conventional threats coexist. Because of this, national military strategy, which is being supported by capabilities-based planning, aimed at designing a military with distinct asymmetric abilities that can be used universally in different theatres

against diverse foes (Kendall 2002, p. 1), is dealing with a significant challenge. This article is focused on the role of capabilities in the strategic military planning process with regard to that challenge.

In 2006, Yarger described the strategic environment as marked by “a world order where the threats were both diffuse and uncertain, where conflict was inherent yet unpredictable, and where the capability to defend and promote national interests might be restricted by materiel and personnel resource constraints. In short, an environment marked by volatility, uncertainty, complexity, and ambiguity (VUCA)” (Yarger 2006, pp. 17-18). More than a decade later, and in the middle of a kind of continuous and fast changing conflict, one can conclude that global disorder has significantly increased while some of our comparative military advantage has begun to erode. We now face multiple and simultaneous security challenges from traditional state actors (an increasing return to the past) and trans-regional networks of sub-state groups, among others – all taking advantage of rapid technological change (Doughty *et al.*, 2017, p. 150).

The 21st century is unpredictable, chaotic, and unresponsive to the reductionist and mechanistic narratives generated by the detailed planning system of logic (Zweibelson 2011, p. 20). The military instrument is confronted with a broader range of operations and with increasingly distant limits. We cannot say, on the one hand, that the world is increasingly complex and, on the other, continue to resort to the same processes without questioning them. Thus, the same reasons that made us change a threat-based to a capability-based planning must now be questioned again. With that purpose, this article aims to question the capability concept, as a core element of the strategic military planning process, in order to determine its validity or need for expansion.

In a review of the relevant literature, it's possible to look at some approaches dealing with capability-based planning processes. However, only a few broaden the capability concept and rarely with a view to expanding it. Stojkovic and Dahl

(2007) say that capability-based defence planning is committed to long-term.¹ So, the more we clarify the concept [military capability], the more we contribute to the long-term planning process. Kendall (2002) concludes that capabilities-based planning can only provide a set of tools for use in a future potential conflict but provides little utility in force size and shaping. Posen (2016) goes deep into the role of military doctrine as fundamental to military organisations dealing with uncertainty, which mainly comes from the international political environment, the lack of practice and the very nature of combat. Drayson (2009) comes up with challenges for the state and industry in equipping the military of today. Kerr, *et al.* (2006) developed a visual representation of future military capability between the three broad stakeholder groups of war fighter, government and industry. Yue and Henshaw (2009) provide some clarity on the capability concept with regard to the Lines of Development (LoD). Johnson, *et al.* (2003) address the challenges of defence decision-making deep into the future. Also, in support of decision-making, Davis (2002) gives us an analytical approach on capabilities-based planning. Baxa (2017) looks at a capability as a dynamic issue and explores the synchronisation of its LoD life cycles.

We argue that the strategic planning process is a *conundrum*² so dependent on capabilities that it is necessary to analyse this concept *per se* and, if necessary, expand it on a time and threat basis. Otherwise, the more ambiguous the concept, the more subjective the planning process output and, consequently, the higher likelihood of the Armed Forces not being prepared to face the wide range of future challenges. Then, we intend to find out if the military capability-based planning process is prepared to face the future strategic threat framework? In doing so, this article is divided into four parts. The first goes further into the capability concept trying to clarify different approaches and dimensions. The second will explore the military capability and strategic planning *linkages*. The third part will focus on the future challenges of the strategic environment, and, finally, we seek to identify, or

¹ Within NATO, long-term time horizon is 10-30 years (NATO 2003a, p. 3). Long-term defence planning addresses the process that investigates possible future operating environments, defines long-term objectives and develops a force structure (development) plan to best adapt the defence organization to those objectives (and environments) given. To achieve balance between the variables Ways, Ends and Means is in other words the purpose of the long-term defence planning (Stensrud *et al.* 2008, p. 14).

² A *conundrum* is an intricate and difficult problem.

not, a “new normal” regarding military capabilities and strategic planning. We conclude that the military capability concept should be expanded and a more integrated and strategic defence planning process must be adapted accordingly.

The military capability concept

“Asymmetric strategies are not so much about weapons as about the concepts of how war will be fought” (Tellis *et al.*, 2000, p. 157).

Capability is the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. Capability is delivered through the LoD (2006, p. 330). Capability is also the “power or ability to do something” with a sub sense of “an undeveloped or unused faculty” (Yue and Henshaw 2009, p. 54). According to NATO, a capability is “a critical attribute needed to achieve success in the execution of a military activity as developed by the NATO Defence Planning Process. In addition, the ability of an item to meet a service demand of given quantitative characteristics under given internal conditions. Capabilities describe what NATO military organisations must be able to accomplish to cover the full range of the Alliance military missions and to guarantee NATO military effectiveness and freedom of movement” (NATO 2018, pp. F-2). The US Department of Defence (DoD), defines capability as the ability to achieve a desired effect³ (*end*) under specified standards and conditions (MoE and MoP)⁴ through a combination of *means* and *ways* across doctrine, organisation, training, materiel, leadership and education, personnel, and facilities (DOTMLPF), described in Table 1 as Lines of Development (Department of Defense 2017, p. 10).

³ The effect might be a specified wartime objective, for example, win a battle or a war or destroy a target” (GAO 1986, p. 7). According to (Stojković, *et al.*, 2016, p. 81) an effect is the physical condition and/or behaviour of the system that has arisen as a result of combat and non-combat operations and depends on a certain situation.

⁴ MoE - measures of effectiveness / MoP – measures of performance.

Lines of Development (LoD)	Remarks
Doctrine	The way we fight. (e.g., emphasising manoeuvre warfare, combined air-ground campaigns)
Organization	How we organise to fight. (e.g., divisions, air wings, Marine-Air-Ground Task Forces).
Training	How we prepare to fight tactically and operationally. (from basic training to advanced individual training, unit training, joint exercises, etc.)
Material / Equipment	Everything that's necessary to equip our forces that DOES NOT require a new development effort. (weapons, spares, test sets, etc. that are "off the shelf" both commercially and within the government)
Leadership & education	How we prepare our leaders to lead the fight. (squad leader to 4-star general/admiral - professional development)
Personnel	Availability of qualified people for peacetime, wartime, and various contingency operations.
Facilities	Real property, installations and industrial facilities. (e.g., government owned ammunition production facilities, training centres)
Policy	DoD, interagency, or international policy that affects the other non-materiel elements.

Table 1. Lines of Development (Defense Acquisition University 2016)

Some American sources dealing with capability-based planning add "Interoperability" to those described above as an important LoD to interconnect and maximise the joint (operational) level. Besides Interoperability, "Policy" also deals with interagency level and might have an international dimension, which means, as Yue and Henshaw (2009, p. 54) state, that a capability exists at all levels of the hierarchy of a system or components of a system, at all the various levels, but without being precisely similar at all those levels.

Moreover, there are different approaches and acronyms amongst NATO member states and other partners as can be seen in Table 2. Despite the differences observed in the approach to the capability concept, the outcome of each planning process has not prevented the performance of operations in several theatres. But, as we shall see further on, the participation of these countries in these theatres has confronted them with enormous challenges.

USA DOTM-LPFI ¹⁾	NATO Portugal DOTMLPFI	EU ²⁾	Canada PRICIE ³⁾	UK TEPIDOIL (DLoD) ⁴⁾	Australia (FIC) ⁵⁾	Finland
D – Doctrine	D – Doctrine	D - Doctrine & Leadership	C - Concepts, Doctrine & Collective Training	D - Doctrine & Concepts		D - Doctrine
			R&D – R&D / Operations Research	I - Information		
O - Organization	O - Organization		I - Infrastructure & Organization	O – Organization	O - Organization	
T – Training	T – Training	T - Training		T - Training	T - Collective Training	
M – Means	M – Means	M - Material & Infrastructure	E - Equipment, Supplies and Services	E – Equipment L - Logistics	S - Major Systems S - Supplies	M - Materiel
			I - IT Infrastructure			
L – Leadership	L – Leadership				C - Command and Management	W - Will for Defence
P – Personnel	P – Personnel	P - Personnel	P – Personnel	P – Personnel	P - Personnel	P - Personnel
F – Facilities	F – Facilities			I - Infrastructure	F - Facilities	I - Infrastructure
					S - Support	S - Support
I - Interoperability	I - Interoperability	I – Interoperability & Certification				
P - Policy ⁶⁾						

¹⁾ DOTMLP is the USA construct of Capability Inputs.

²⁾ As defined by the European Parliament’s Subcommittee on Security and Defence (SEDE) for Permanent Structured Cooperation (PESCO) (Mauro and Santopinto 2017, p. 66).

³⁾ PRICIE is the Canadian construct of Capability Inputs. PRICIE is the acronym for Personnel, R&D/Ops Research, Infrastructure & Organization, Concepts, Doctrine & Collective Training, IT Infrastructure, Equipment, Supplies and Services.

⁴⁾ DLoD – Defense Lines of Development (Anteroinen 2013, p. 17).

⁵⁾ FIC - Fundamental Inputs to Capability (Anteroinen 2013, p. 17).

⁶⁾ Some sources refer policy instead of interoperability (Defense Acquisition University 2016).

Table 2. Capability models in various countries (Anteroinen 2013, p. 17; Kerr, Phaal, and Probert 2006, p. 9; SEDE 2017, p. 66).

As a synthesis of the LoD, one can adopt, for now, the US acronym DOTMLPFI+P. Two reasons are pointed out for this. First, because it's the most detailed approach and, second, because it's similar to the NATO approach, an organisation which covers a wide range of states.

Next, we will address aspects of the universe of military capability, never putting aside strategic planning, seeking to reinforce its importance, before confronting it with the strategic environment.

Military capability and strategic planning *linkages*⁵

In 1986, the DoD established that a military capability consisted of four components (Table 3): readiness; sustainability; modernisation; and force structure (GAO 1986, p. 1).⁶ For NATO, a fully functional force package in a theatre is so because the units and people have been trained and materiel acquired and well maintained (NATO 2003a, p. 11).

Looking through each subset detailed above, one can conclude they are a consequence of a capability-based planning process located upstream, all connected with the *ends*. The Armed Forces need to be ready to act and, in order to do it, they have to be sustained. Finally, readiness is measured in quality and quantity, two attributes fully linked with modernisation, oriented to fill gaps between what we have now and what we will need in a middle or long-term basis. Modernisation is the “click” to transform strategic planning⁷ in a dynamic and

⁵ In honour of the author and disseminator of the term, Kissinger, within the strategic studies. Linkage theory was the US strategy to improve relations with Russia and China during the 70s. Henry Kissinger used linkage in various areas of America's Soviet policy in the 1970s. Kissinger employed linkage at three stages, first for initiating detente, second for completing detente, and finally for maintaining detente. Although he was successful in the first two stages, he failed in the final stage where he tried to sustain detente through the delicate balance between incentives for Soviet restraint and penalties for its adventurism. He called these components the carrot and the stick (Sekiba 1994).

⁶ One year after, Norris said that capabilities represented the weapons systems and force levels needed to support military strategy (Norris 1987, p. 16).

⁷ Strategic planning is a systematic process which defines the way to guarantee the permanent accomplishment of the defined overriding goals and objectives (Grunig and Kuhn 2005, p. 9).

cyclical process. In this particular case, it's important to underline that we were in the Cold War at that time and, because of that, the military capability (strength) was strictly connected to a well identified threat. After the Cold War, we dived into a kind of Global Operations Zone (GOZ) with a wide range of non-identified threats. That is, the military clearly did not know what to prepare from that point forward. Strategic studies would be relevant again to give options for strategic planners who would abandon the threat-based and start using capability-based defence planning. Despite this change, also questioned nowadays, as we will see further, the four above components must be kept in mind.

Readiness	Sustainability	Modernisation	Force structure ⁷⁾
<p>The ability of the military forces, units, weapon systems, or equipment to deliver the output for which they were designed (i.e.: for a tank to move and shoot) in peacetime and at the outset of hostilities. Readiness is measured in terms of manning, equipping, and training the force and is defined to include the force's ability to mobilise, deploy, and employ without unacceptable delays.</p>	<p>The staying power of military forces, or how long the forces can continue to fight. Sustainability involves the ability to resupply engaged forces during combat operations and is sometimes measured in terms of the estimated number of fighting days for which supplies are available.</p>	<p>The technical sophistication of forces, units, weapon systems, and equipment. Modernisation can include new procurement and/or modifications, depending on the service. Assessments of modernisation may compare new types of equipment with the items they replaced or may compare equipment in the inventory with that of potential adversary forces.</p>	<p>The numbers, size, and composition of units constituting the military forces. Force structure is usually described as numbers of divisions, ships or wings.</p>

⁷⁾ To Lacquement-Jr., force structure and doctrine represent two critical characteristics that define the military capabilities upon which leaders can draw. Force structure reflects doctrinal decisions and assumptions about mission execution. It represents a specific mix of personnel, equipment, organisational structure, and assumptions about operational effectiveness. Force structure constrains options for employing the military (Lacquement-Jr. 2003, p. 10).

Table 3. Subsets of a military capability (GAO 1986, p. 1).

As an example, for Yue and Henshaw, a desired capability can only be achieved if the activities within all LoD are at an appropriately matched level of readiness, or maturity. Failure to manage across all LoD can lead to serious deficiencies⁸. The LoD are concerned with operational readiness, i.e. development to a level appropriate for deployment⁹ (Yue and Henshaw 2009, p. 55). Therefore, only a ready and sustained force structure will be able to face future challenges. Military capability build-up depends on this dialectic (response *versus* challenge). Thus:

Military Capability ↔ (Force Structure + Readiness) * (Sustainability + Modernisation)

Remark: "Force Structure" is a part or all systems/domains (air + land + sea + space + cyberspace)

Another important aspect when dealing with military capabilities is "time". Time doesn't stop and if we were to focus and examine the LoD, we would see that each one evolves asynchronously with the others, even when, hypothetically, the capability is kept constant, as illustrated schematically in Figure 1. The tube represents a military capability notionally kept at a constant level over time and the shaded dots represent LoD at three different epochs. For any desired capability level, there are multiple feasible ways of LoD synthesising, and at any particular point of time, the specific content of each LoD might be different. In fact, it might be different equipment for forming the same capability, which means that there is no unique combination of LoD to provide a given capability. Therefore, a military capability is an emergent property arising from the interactions of all the LoD rather than a simple superposition of them. This adds more complexity for military capability development, since it is almost impossible to fully plan, predict and understand its long-term evolution (Yue and Henshaw 2009, pp. 57-58).

The above conclusion made by Yue and Henshaw about the asynchronous evolution of LoD within a military capability lead us to go deeper in the capability concept. Davis, *et al.* say that the ability to achieve a type of desired effect (e.g., accuracy or speed of action), is perhaps through a different number of operational mechanisms over time (Portfolio-Analysis Methods for Assessing Capability

⁸ For example, failure to deliver EH-101 Merlin (Helicopter) training on schedule resulted in an additional cost because some delivered aircraft had to be stored until trained operators were available.

⁹ E.g. training refers to the training of military personnel such that the appropriate people are trained to an appropriate level of preparedness for deployment).

Options 2008, p. 20). So, military capability means different things in different contexts (Anteroinen 2013, p. 15) and, if capability¹⁰ is the ability to succeed at an assigned mission¹¹, different states will thus assess capability very differently¹² for the same forces. No single, undifferentiated concept of “military capability” can apply to all conflicts in all places and times (Biddle 2006, p. 6).

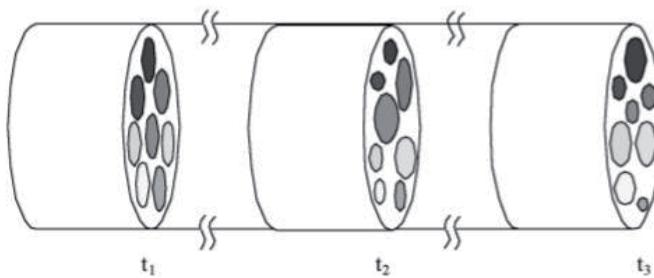


Fig. 1. A schematic illustration of asynchronous evolution of LoD within a military capability (Yue and Henshaw 2009, p. 58).

Another important issue is referred to by Lacquement-Jr., for whom the nature of modern military capabilities and the time involved in their development makes it risky to wait until threats are clearly identified before creating the forces to address them.¹³ Hence, national leaders must decide well in advance what forces

10 A military capability can also be divided into offensive and defensive. An offensive military capability as the capacity to destroy the largest possible defensive force over the largest possible territory for the smallest attacker casualties in the least time. Defensive military capability is conversely the ability to preserve the largest possible defensive force over the largest possible territory with the greatest attacker casualties for the longest time (Biddle 2006, p. 6).

11 Missions ranging from defending national territory to invading other states, hunting down terrorists, coercing concessions, countering insurgencies, keeping the peace, enforcing economic sanctions, showing the flag, or maintaining domestic order (Biddle 2006, p. 6). All these missions are assigned to achieve a specific effect.

12 For example, within limits, trade-offs can be made across capability areas (e.g., precision *versus* mass; air *versus* ground) and different operational concepts can be formulated for the conduct of any operation (Ochmanek *et al.*, 2017, p. 4).

13 It doesn't mean we are talking about a life cycle. According to Yue & Henshaw, it is meaningless to talk about the life cycle of a military capability. For some LoD, the concept of life cycle does not apply (i.e. personnel, concepts and doctrine, and information). For those that it does, it is not the LoD itself, but the components from which it is composed that may have life cycles, and there may be many at different stages. Moreover, the relationship between LoD and military capabilities is many-to-many, i.e. the components of a particular LoD contributes to more than one military capability. So, developments of military capabilities and LoD are intertwined (Yue and Henshaw 2009, p. 58).

are needed to meet national objectives. In the absence of a central threat upon which to focus, such war-fighting capabilities must address a range of alternative threats and hedge against them (Lacquement-Jr. 2003, p. 161). Besides that, this approach allows us to assess any capability as a system of elements (LoD). In other words, in a given time one must be able to assess the status of each LoD, using the necessary tools and methodologies. But what tools and methodologies will we have to use? And, above all, what indicators will we have to observe and measure?

That's why we are in the middle of a *conundrum* and why strategy is so important in the capability-based planning process. On the above military capability definition, it's possible to identify the three vectors of Lykke's strategy - *ends* ("desired effect"), *ways* and *means*, to which we must add the risk (Lykke 2001, p. 179)¹⁴. In other words, *ends/objectives* are connected to state interests and, to achieve them, it's necessary to build the adequate capabilities (*means*) and, then, arrange them in a proper formula/combination (*ways*) to achieve an objective. The bigger the imbalance amongst these three vectors, the bigger the risk it is necessary to take (accepting it, with or without, implementation of control measures, or simply rejecting that strategy).

If we take into account the outcome of the capability-based planning process [capabilities], we can use it to detail the path to achieve strategic objectives (*ends*). In Figure 2¹⁵ it's possible to see the two way relationships linked to the domain systems (air, land, sea, space and cyberspace) and their effort in producing effects¹⁶ through the capabilities portfolio (*means*) and, in this way (*ways*), accomplishing the defined objectives. The result in attaining this has to be assessed in order find gaps within existing tools, creating new ones or improving the existing ones.

¹⁴ The same as defined by (Davis, *et al.* 2008, p. 20).

¹⁵ Stojković, *et al.* (2016, p. 81) and Davis (2014, p. 50) have similar approaches.

¹⁶ Kerr, *et al.* (2006, p. 13) present a set of effects (prevent, stabilize, contain, deter, coerce, disrupt, defeat and destroy) for which it's necessary to develop actions within the various domains that comprise the Armed Forces.

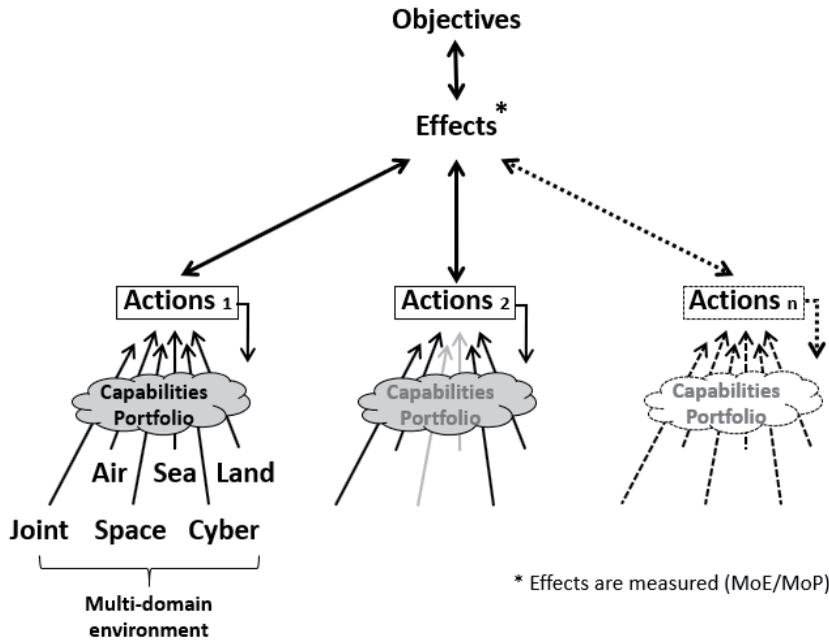


Fig. 2. Relationships between objectives, effects, tasks and capabilities

The *equilibrium* of the LoD should be a continuous goal. For this to be possible, it is necessary to look at future challenges as the fuel that feeds the capability-based planning process.¹⁷ This method (Figure 3) involves a functional analysis of expected future operations. However, future operations themselves do not enter the performance evaluations. The outcome of such planning is not concrete weapons systems and manning levels, but a description of the tasks force structure units should be able to perform expressed in capability terms. Once the capability inventory is defined, the most cost-effective and efficient physical force unit options to implement these capabilities are derived. However, evaluation of physical force unit options is not a part of the Long-Term Defence Planning Process (NATO 2003b, p. 4). The same

17 The change from a fairly predictable, symmetrical threat to the myriad unpredictable, asymmetrical threats possible has profound effects for defence planning. It impels a shift from threat-based planning to capabilities-based planning and suggests that a “portfolio” approach to these capabilities - i.e., trying to build breadth and flexibility in the hope that capabilities can be brought to bear across a spectrum of unpredictable threats - would be the most useful type. It also presses the harnessing information technology to identify threats, link shooters tightly to sensors, and manage a flexible, fast-moving campaign. Additionally, it encourages the innovation needed to produce a real “revolution in military affairs” (RMA) (Johnson *et al.*, 2003, pp. 10-11).

(time), nor where (place). Consequently, if the capability-based defence planning is linked to long-term, therefore we are about “to be in trouble”. According to Johnson, *et al.*, the longer the time horizon, the harder it is to know the parameters of a decision with any precision. At any point, there are “known knowns” - things on which we believe we have adequate intelligence; “known unknowns” - things on which we believe we do not have adequate, or any, intelligence; and “unknown unknowns” - things we don’t even know we should be concerned about. The deeper the reach into the future, the more the unknown unknowns dominate (Johnson *et. al.*, 2003). On January 25th of 2016, S. Colbert interviewed Donald Rumsfeld, focusing on the Iraq War and the state of knowledge leading up to the decision to go to war. Donald Rumsfeld had previously addressed the state of U.S. intelligence on Iraq in terms of the same approach as given by (Johnson, *et al.*, 2003). However, Stephen Colbert then asked about “unknown knowns”, which he defined as, things we know, but choose not to let other people know¹⁹. The lesson we can draw from here is that it will not be worth plunging into the unknown unknowns of the future if we do not have the ability to share information.

It is with the understanding that the concept of military capability can be consolidated that we will then analyse the future challenges of the strategic environment in order to contribute to that.

Strategic environment

“Today’s global security environment is the most unpredictable that I have seen in 40 years of service.”²⁰

“Why do we plan? We plan to win!”²¹

Regarding his experience at the Afghan theatre, in 2015, US Army General Stanley McChrystal²² published a book named “Team of Teams: New Rules of Engagement

¹⁹ (*Stephen Gets A Straight Answer Out Of Donald Rumsfeld*, 2016)

²⁰ General Martin Dempsey, US Army, in 2015 at the US National Military Strategy (Doughty *et al.*, 2017, p. 133).

²¹ Excerpt of a dialogue during a multinational military exercise occurred, in 2014, in Breda, at the Netherlands Defence Academy, in which the author of this article has participated.

²² Commander of US and ISAF forces in Afghanistan in between June of 2009 and June of 2010.

for a Complex World". In that book, the author asked three fundamental questions about the present and, therefore, the future strategic environment: (1) If we were the best of the best, why were such attacks not disappearing but in fact increasing? (2) Why were we unable to defeat an under-resourced insurgency? (3) Why were we losing? (Team of Teams: New Rules of Engagement for a Complex World, p. 19).

Ironically, with Afghanistan still being a dangerous operations theatre for NATO (and US lonely), these three questions expose the weaknesses of the military instrument *per se*, as well as any broader response that integrates several instruments of power. In addition, these questions reveal a concern about the threat and denounce the need for a rapid response. We thus face another paradox. That is, we are confronted with the lack of time, as if caught by surprise, and we want a quick response to deal with a complex, if not chaotic, problem.

In fact, the twenty-first century has confronted the world with a rampant technological evolution, with information in quantity and disinformation. Rapid change characterises a strategic environment where individuals and groups have access to more information than entire governments once possessed, and that can be swiftly organised and lead to violent change. We also have: new arising and resurgent powers (e.g.: China and Russia, respectively), in part with a defiant and hostile posture; the nuclear proliferation (e.g.: North Korea and Iran); the increasing fragile states from where displaced persons and refugees flee, and the radicalism and global terrorism (e.g.: the Middle East and Africa in a general perspective)²³; the climate change, namely the lack of water and the rising of temperature that are spreading hunger and leading to the emergence of refugees; the extreme weather and phenomena (floods, landslides, hurricanes, hot and cold waves, earthquakes...); the pandemic diseases; the invisible cyber threats; the space and artificial intelligence arms race; a wide range of wars (prolonged, unrestricted, asymmetric, hybrid, proxy, protracted, dirty, new wars...); and fear!

These facts and realities of the 21st century strategic environment have shown us several blurring dichotomies. The difference between war and peace, war and post-war, internal and external, soldiers and civilians, war and catastrophe,

23 If we take a look at the site fundforpeace.org where the fragile states index has been updating each year, it is possible to conclude there is a worsening of the situation in northern Africa and in the Middle East. These two regions encircle Europe (The Fund for Peace n.d.).

victims and perpetrators is no longer clear. These diverse issues are no longer watertight compartments that can be narrowly defined. Uncertainty, as Gray said, is a condition of all human social and political life with respect to its future security (Strategy and Defence Planning. Meeting the Challenge of Uncertainty 2014, p. 12). We live in a world of “liquid modernity”²⁴, with a full environment of confused signs, with irregular, catastrophic, traditional and disruptive challenges which can also arise combined and all prone to change quickly and unpredictably. Thus, it’s in a mix of VUCA environment, speed of change, blurring dichotomies and fear that planners must adapt and survive. With regard to this, a multidisciplinary examination of change in all major areas of life is mandatory in order to find the interacting dynamics that will create the next age.²⁵ Both [adaptability and survivability] have a great impact on capabilities.

Multi-domain²⁶ is one of the most recent signs of that survival, as a concept that involves an integration of those five domains that operate on a battlefield: air, land, sea, space and cyberspace. Multi-domain is the maximum expression of the joint operations’ environment. However, for this to become a reality, interoperability is mandatory. Without interoperability there is no “joint”, only “together”. Supra-domain is a different issue that must be brought into discussion and which deals with all instruments of power functioning like a Swiss watch. China and Russia have supra-domain strategies as demonstrated by Liang and Xiangsui (1999)²⁷, in “Unrestricted Warfare”, as well as by Gerasimov Doctrine²⁸, respectively. So, how can we fight an adversary that uses a total strategy only by using the military

24 The title of one of Bauman’s books (Modernidade Líquida 2001).

25 Yarger goes on to claim, unexceptionally, that “most national security professionals are trained for the certainty of planning, but must be educated for uncertainty as they enter the strategic realm” (Gray 2014, p. 29). Military strategy calls for learning environments that can “build creative, adaptive professionals who are skilled at leading organisational change while operating in environments of great complexity and uncertainty.” (Doughty *et al.*, 2017, p. 150).

26 For Multi-Domain Battle, see Perkins & Holmes (Perking & Holmes 2018), in “Multi-domain Battle Converging Concepts Toward a Joint Solution”.

27 As (Liang & Xiangsui 1999, p. 143) remark in Unrestricted Warfare, “it must go beyond all of the fetters of politics, history, culture, and ethics and carry out through thought. Without thorough thought, there can be no thorough revolution.

28 For Gerasimov Doctrine, see (Bartles 2016), in “Getting Gerasimov Right” and (Chivvis 2017), in “Understanding Russian “Hybrid Warfare” and What Can be Done About It”. Instead of supra-domain, some scholars (e. g.: Dmitry Adamsky) define the Russian way of war as Cross-Domain. Available at: <<https://www.ifri.org/sites/default/files/atoms/files/pp54adamsky.pdf>>, [Accessed in September 15 of 2018].

instrument? That's a deadly strategy in a long-term perspective. Besides that, even considering the use of a broader range of instruments, this use should be integrated and directed by a higher echelon, which brings the need for interagency and policy. Interagency, for dealing with organisations other than military, and policy for integrating capabilities within all instruments of power as well as, if necessary and possible, with other nations.

But, even with more interoperability, interagency and policy, planners²⁹ must attend to other areas of concern, namely those which depend on the lack time and speed of change. These two dimensions function in opposite directions. As an example, one can be in a period of equipment acquisition, which normally takes years, and once operationally capable, the strategy points to another direction. In other words, using the Mintzberg model (Figure 4), it's a necessary flexibility to move from a "realisation according to an intended strategy" to a "realisation adapted to the strategic environment change". The main way to accomplish that is by adopting modularity as necessary and, perhaps, mandatory. Modularity allows the strategy to prepare itself for the most probable events and, if necessary, meets the most dangerous, the same way we do when creating courses of action at a tactical or operational planning level during a crisis or conflict.

When comparing the two cases on the above Figure 4, we observe differences in the output. In a normal situation (Case 1), an intended strategy tends to be similar to the one realised. However, in a situation with VUCA environmental changes (Case 2), the intended strategy always differs from the obtained, which means that we must adopt flexible and adaptable answers. Therefore, one concludes that modularity and adaptability are two other features with direct impact on the capability concept. Modularity shall be intended regarding means/assets and substructures.

²⁹ Defense planners are condemned to guesswork on military mission definitions, makeup, scale, and transformation goals that greatly increase the potential for a mismatch between *ends*, *ways*, *means*, and *risks* spread across the full spectrum of military conflict (Kendall 2002, pp. 1-2).

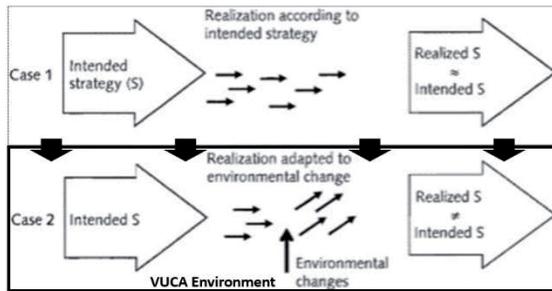


Fig. 4. The limits in which the strategy must be developed in a VUCA environment. Adapted from Grunig and Kuhn (2005, p. 7)

Until now, we have been able to observe the central responsibility of those who have to analyse the future. When talking about military capabilities in the 21st century, (Drayson 2009, p. 42) referred to the need for better agility to respond to changes in the strategic environment and a better at identifying and rapidly translating useful technologies into military capability, including from the civil sphere, among others, which reinforces the role of those analysts. Their reports/assessments that are the information and knowledge, are key elements in achieving the necessary requirements for a capability building. For (Kerr *et al.*, 2006, p. 8), knowledge is information applied to a particular situation, so it's acceptable that we can assume that knowledge includes adaptability. We understand, however, that the information dimension can be considered as a comprehensive element that presupposes knowledge and, therefore, adaptability. But the *conundrum* is even bigger if we consider the differences between a small power like Portugal and a great power like the US, an adequate comparison because both powers are NATO member-states.

As shown in Figure 5, in capability-based planning, there is a big difference between small and great powers. While in the small powers, the *means* and *ways* condition the *ends*, in the great and superpowers, *ends* determine the *ways* and *means*.

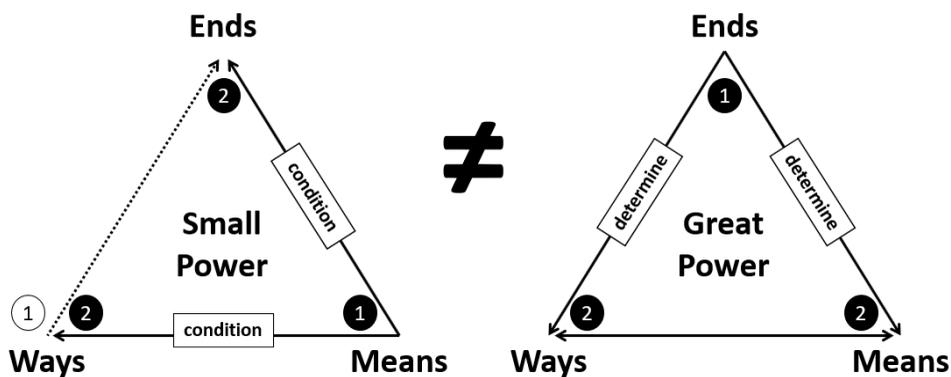


Fig. 5. Comparison between a small and a great power in terms of what leads the strategy process.

We can easily use a formula to demonstrate the same as in Figure 1, but also including the risk. So:

Small Power → $Means + Ways = Ends (+Risk)$

Great Power → $Ends = Means + Ways (+Risk)$

As we can see, in these two formulas, there are some fundamental differences between a small and a great or superpower. Another interesting aspect is the risk position on that formula. While with that in a small power, the *risk* is normally connected with the *ends* assumed (more than desired for the means available), in a great power, the *risk* is linked to the definition of the *ways* and *means* (miscalculated for the *ends* set by the policy).³⁰

In organisations such as NATO, driven by the superpower, the USA, small powers (e.g.: Portugal, Belgium, Greece...) deal with two major challenges. First, a small power needs to understand that being a member of such organisation it will be faced with a process in which the *ends* determine the *means*, precisely the opposite of what should be for its reality.³¹ As a consequence, a small power must identify with accuracy which of the *ends* defined by the Alliance can be assumed for itself. Otherwise, in the process of allocating *means* for the assumed *ends*, the

³⁰ Douglas (2003) explain the relationship between risk and acceptability at “Risk acceptability according to the Social Sciences”.

³¹ Despite the fact that decisions are taken in the common agreement of its member states.

small power can see that these [*means*] are lesser than needed, which signify that this small power has just accepted a strategic risk. Second, a small power that often interacts with great powers, especially in terms of cooperative security or collective defence, often falls into temptation and lives a reality as if it were a great power. As a consequence, despite the defined capability goals, it gets very difficult to reach those tangible LoD, such as means, personnel and facilities. Indirectly, the intangible LoD are also affected. As an example, training without means, personnel or facilities doesn't achieve the necessary readiness targets.

Internally, the situation tends either to be critical and, sometimes, affected by the aura of belonging to an organisation such as NATO, which may lead a small power to communicate, at the political level, a capability when, in fact, this is not real.³² As a conclusion, a small power often doesn't act as a small power and, in doing so, whenever there is a need for adaptation to an environmental change, as described by Mintzberg, it gets the feeling that "eating soup in a shallow dish is normal".

For all that has been said, one concludes that it is necessary to use tools and adopt methodologies that bring a quantitative approach to capability-based planning. The use of tools and methodologies should soon be present in the evaluation of each LoD. By doing that, we're contributing to a better strategic planning process. Considering that "planning is not strategy, but it is essential for its successful execution"³³, so, the less smog on planning process, the better strategy is achievable.

The later I reach an LoD, the later I reach a capability. As consequence, the later I fill a gap, the later I am able to carry out actions and, therefore, achieve an affect. So, according to the fast environment changes plus the uncertainty, I have to identify risks and to communicate them to the upper decision levels. Each decision level has to be informed about the risks and has to know what risks it is responsible for. It is not up to any of the levels, except the political level, to make decisions about risks that aren't their responsibility, or to filter or save them for

³² Rickli (2008, p. 317), through "small European states' military policies after the Cold War: from territorial to niche strategies", explains the main areas where small countries should bet, depending on the homeland defence goals and the expeditionary operations with low or high strategic ambitions.

³³ As said by Yarger (Gray 2014, p. 29).

themselves. But risk is not only about decision levels, or lack of decision, or poor communication to the upper echelon (the above decision makers, especially the political level). Risk takes a much bigger importance in a VUCA environment, because VUCA is synonymous with risk. Therefore, and additionally, planners must consider: (1) the risk of using the time available badly; (2) the risk of a bad decision; (3) the risk of not assessing the risk; (4) the risk of not clearly validating the strategy criteria (suitability, acceptability and feasibility to attain the policy end state objectives); (5) the risk of not considering the risk as an opportunity; (6) the risk of yielding to the political level's will. These are golden rules for planners in order to have a better decision planning process.

A “New Normal”?

Alice: “Would you tell me, please, which way I ought to walk from here?”

Cheshire Cat: “That depends a good deal on where you want to get to.”

Alice: “I don't care much where.”

Cheshire Cat: “Then it doesn't matter which way you walk.”

(Carroll 1998, p. 89)

A “new normal” can be interpreted as a new paradigm. The word was coined by Kuhn (1996), who taught that there were five signs of a paradigm shift, synthesised, in 2016 by (Maykish 2016, p. 217), for whom the insight forming the new paradigm: (1) provides a substantially new perspective on problems and solutions; (2) inspires new questions about old data; (3) changes the rules of the subject; (4) alters the conceptual map directing further experimentation and; (5) moves a community of practice beyond the mere clean-up work (“normal science” and “puzzle-solving”) of perfecting the old paradigm.

If we confront the previous approach to capability-based planning with the aspects that shape a new paradigm, it's possible to conclude that we are not in the presence of a new paradigm. Essentially because all the aspects criticised above don't imply a new perspective, nor a changing of the rules of the object, nor a changing of the

conceptual map.³⁴ However, that doesn't mean that the existing paradigm doesn't have to be adjusted. In fact, adjustments will have to be made in order to promote a more flexible, adaptable, and comprehensive defence planning model in face of the approaching strategic challenges. Having said this, we start by proposing an adapted model (Figure 6) that integrates some of the existing LoD, in part reformulated, and also a new one. The new one is "Information & Knowledge (I&K)"³⁵. Information aims to get a continuous comprehensive awareness between the strategic environment and the other LoD. Knowledge aims to join a coherent set of capability requirements for any given situation. Without an LoD such as I&K, the main way to be aware of the strategic environment changes would be through Doctrine & Concepts. However, the contemporary strategic environment changes faster than doctrine, which means that we might be taking unnecessary risks.

One of the reformulated LoD is "Logistics & Modularity" instead of Materiel. Why this change? In fact, the word "materiel" tends to be narrow when the objective is to know about what is necessary to equip the forces in order to fight. If such thinking is logistically oriented, their respective functions (e.g.: refuelling, maintenance, etc.) will be better considered, which is clearly more advantageous for the capability management. On the other side, Modularity³⁶ is also absolutely critical, taking into account the wide range of threats against which there have to be created adaptable and flexible answers. Adaptability is another complement we must include within the set of LoD, and it can be linked to Interoperability.

34 Capabilities-based analysis apparently is meant to focus on programmes out into the future—which in turn means acquisitions, of new systems, with an emphasis on technology, and things that can be measured. In its reaching out into the future, and in an almost timeless way, this is still a reflection of the Cold War competition with the Soviets, a competition that seemed interminable and, as time went on, not actually ever involving combat (Gaffney 2004, p. 2).

35 Information is defined as data placed in context. Knowledge is information applied to a particular situation (Kerr *et al.* 2006, p. 8).

36 Modularity is a concept that has proved useful in a large number of fields that deal with complex systems... A module is a unit whose structural elements are powerfully connected among themselves and relatively weakly connected to elements in other units. Clearly there are degrees of connection, thus there are gradations of modularity. In other words, modules are units in a larger system that are structurally independent of one another, but work together. The system as a whole must therefore provide a framework—an architecture—that allows for both independence of structure and integration of function (Baldwin and Clark 2000, p. 63).

Adaptability & Interoperability (A&I) work as a kind of mind-set since both have influence on the other LoD. In short, without A&I it won't be possible, for instance, to accomplish multi-domain operations. Additionally, it is important to consider that A&I cannot be a means to deny any improvement³⁷, even if somehow that implies some fragility for a short period of time. As Doughty *et al.* say, “the reality of force development is that about 80 % of joint force is programmed or exists today. We do, however, have an opportunity to be innovative in two ways. We can significantly change the other 20% of the force, and we can change the way we use the entire force. While new capabilities will be essential, many of our most important advancements will come through innovations in training, education, personnel management, and leadership development” (Doughty *et al.* 2017, p. 11)”. Modularity promotes this.

Finally, we have the “Interagency” connected to the already existent “Policy” (I&P). We can assume that this LoD may not be mandatory, since its importance lies in a typology of capabilities to be conceived in the context of interaction with other instruments of power, in particular with political instrument and, eventually, with organisations (non-state actors) on a national and international level. I&P could be truly relevant in a capability building³⁸ process oriented to non-article five operations. However, it doesn't mean that it isn't important for all spectrum of operations, namely with regard to Policy dimension.

The ten LoD shown at Figure 6 are presented according to a key idea. First, in the inner circle, LoD are located that are vital to any Armed Forces' branch in order to follow their particular strategy. In the middle circle is the LoD that is important for a given capability to operate at a joint level, nationally or internationally. If, in the national case, the lack of interoperability results in a difficult integration of the Armed Forces' branches, at international level, NATO for instance, it is

³⁷ That's one of the reasons pointed out to a recurrent paradox regarding military acquisitions. In other words, in military acquisitions there is a tension between accepting sufficient risk to create innovative systems that exceed enemy capabilities and yet rejecting those projects that are so innovative that they are unlikely to yield operational benefits within a fixed timescale and to a specified budget (Johnson 2007, p. 2).

³⁸ For Yue & Henshaw, when we look through the whole military capability development timeline, it is clear that the fundamental “building block” that we are dealing with are Force Elements at Readiness (FE@R), whereas capability is much more abstract (Yue and Henshaw 2009, p. 58), as shown.

contrary to the basic principles shared by its member-states. The same is true in the absence of adaptability. Finally, in the outer ring, we have an LoD that is desirable, in equal proportion to the need of the other instruments of power for the materialisation of a strategy.

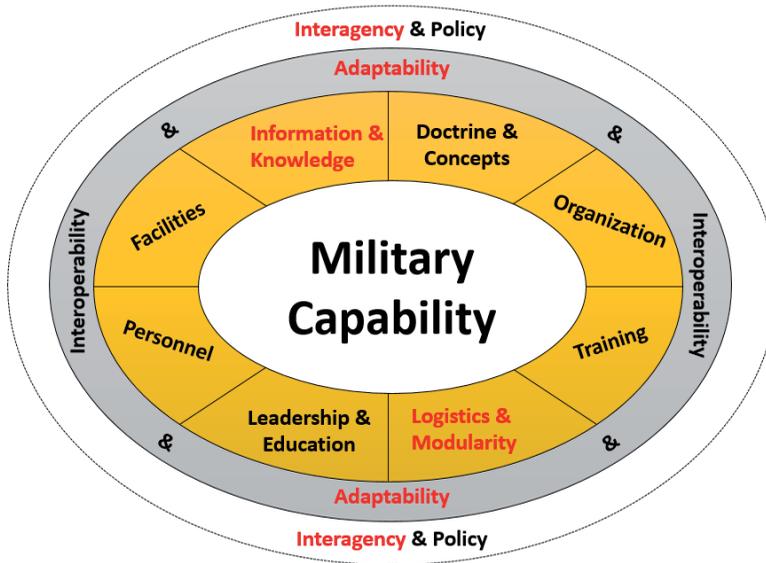


Figure 6. The 8+2 LoD proposed

Another important variable is time. Time acts as a common denominator within LoD. In a “liquid modernity” Era, the continuous assessment of an existent capability is more than important when dealing with change is mandatory. As a consequence, this dialectic (capability status *versus* challenge to face) implies two things, the correct assessment (measurement) of LoD at any given time (Expression 1) and the correct assessment of the threats (centrifugal forces) to deal with. For both, we need tools and methodologies, necessarily those that ensure redundancy and, simultaneously, accuracy.

$$\frac{LoD}{T_n} \rightarrow \text{Capability at a given time } (T_n) \quad \text{[Expression 1]}$$

According to Davis, et al., good tools allow tailoring of analytic material for different audiences and occasions. The key factors in such a tailoring are (1) the nature of the decisions or judgments to be made; (2) the decision makers’ relative

interest in strategic, technical, or process issues; (3) the decision makers' pre-existing depth of knowledge; (4) time; (5) the psychological context resulting from other contemporary events; (6) the format of presentation (briefing, discussion, written monograph, or a combination of these); and (7) personal inclinations and styles (Davis *et al.*, 2008, p. 43). With regard to the time factor, the use of science in strategic planning allows planners to deal more comfortably and comprehensively with lack of it [time]. Lack of time affects the decision making process mainly when we consider hierarchic institutions such as the Armed Forces, and, especially if (and when) being part of a Collective Defence Organisation such as NATO. However, as pointed out by Davis *et al.*, science has to deal with the art (ability) of a decision maker, his sense and sensibility, including about time, which sometimes is not so clear nor effective. With this in mind, Frank and Procházka (2017, p. 70) say that in order to deal with threats, state security policy should be the most rational. However, everyday state policy is built upon the background of irrational inputs, permanent lack of information and subjective factors, which is a paradox, which collides with the fact of any "development of military capabilities has its own momentum". Even so, tools strengthen the advice at staff level, as well as, being a strong means to deal with time constraints and to support communication with the upper level, including the political.

As a conclusion, to build a capability we need to reach, to integrate, to combine and to consolidate these ten LoD. It would also be very important to assess the weight of each LoD in order to obtain an overall appreciation of a given capability. Additionally, besides being capability-based, strategic planning also has to be threat-informed, as a guarantee that the full range of threats are covered by strategic planning. By planning based on capabilities as well as based on threats, we became prepared to respond to the most likely threats (hybrid...) without putting aside the most dangerous (conventional).

Conclusions

“In today’s dangerous world, there is no credibility without capability.”³⁹

In this article we proposed to question the capability concept, as a core element of the strategic military planning process, in order to determine its validity or need for expansion. One can conclude that the military capability concept should be expanded and more integrated, and the strategic defence planning process must be adapted accordingly.

To this end, this article was divided into four parts. First, we started by addressing the concept of capability. One concludes that countries that follow the capability-based approach have different understandings about the concept and its Lines of Development (LoD). However, one concludes too that there is a straight connection between the three dimensions of strategy equation (*ends, ways and means*) and capability concept. The *equilibrium* amongst these three dimensions is reached through the ability to combine the LoD, which we started by adopting as: Doctrine, Organisation, Training, Material, Leadership, Personnel, Facilities, Interoperability and Policy (DOTMLPFI+P). We dedicated the second part to exploring the importance of military capabilities for the strategic planning process. With this purpose, it was clearly decided that the better we understand the LoD, the better we conduct the planning process, concerning the *linkages* between both. Without the proper capabilities, the military instrument will be constrained in acting in order to produce the necessary effects to achieve the defined objectives, whether tactical, operational or strategic.

The third part was used to characterise the strategic environment trying to find out why we were losing (?), according to General McChrystal’s words, and how that could affect the capability-based planning process. In fact, we live in a Global Operations Zone where modern battlespaces deal with a lot of variables that has transformed the war and conflicts. Nevertheless, both continue to be political and human and, as Major General H. McMaster (US Army) said in 2013, “people fight today for the same fundamental reasons the Greek historian Thucydides

identified nearly 2500 years ago: fear, honour and interest". Thus, if war is political and human, then it is also uncertain. As a matter of fact, war is much more uncertain because the human and political dimensions became more complex. The difference between war and peace, war and post-war, internal and external, soldiers and civilians, war and catastrophe, victims and perpetrators is no longer clear. We live in a world of "liquid modernity", with a full environment of confused signs, with irregular, catastrophic, traditional and disruptive challenges which can also arise combined and all prone to change quickly and unpredictably. This strategic framework also brought a wide range of risks which exist at all decision levels and that are interconnected.

Finally, after an understanding on "how were we planning (?)" and "what will we need to plan for (?)", we were in the condition to answer the question "were we in a new normal (?)". Despite the identified gap between what we have and what we need, one concludes that there is no other paradigm regarding the strategic planning. Capabilities will continue to be the core element and output of that process. However, there are some necessary changes with regard to the LoD of a capability, as well as to add the "threat informed" on "capability-based". Regarding the LoD, one proposes a number of ten: Doctrine & Concepts, Organisation, Training, Logistics & Modularity, Leadership & Education, Personnel, Facilities, Information & Knowledge, Adaptability & Interoperability and Interagency & Policy. With these reviewed models of LoD, we think it will be possible to give a better answer to the strategic challenges for the military. Besides that, we must apply quantitative tools and methodologies to each LoD in order to assess its status at any given time and thus contribute to a better overall assessment of a capability. With this, we'll not only reduce the risk, but also have more and better arguments in the decision-making process, as well as in the communication with the political level.

Synthesising strategic military planning must be expanded and more integrated in its capability concept, which means a reformulation of the LoD, continuously assessed with art and science. Additionally, due to the increasing weight of conventional threats, the planning process must be also threat informed. Future challenges dictate!

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