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The Foundation for Defence Procurement Reform in Ukraine

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EXECUTIVE SUMMARY

Given the current security environment in Ukraine, the need to undertake fundamental reform in management of defence resources in that sector is essential. The focus of this paper is to provide a governance framework for such transformational reform in procurement that could be applied in Ukraine. The three core elements that comprise the foundation for this defence procurement reform are: development of a defence industry strategy, selecting a defence procurement strategy and reform of the defence industrial base. The paper argues that the Ukraine capital equipment program is central to a defence strategy articulated by the government, and reform of both the defence industrial base and capital equipment procurement process are primary enablers that will facilitate strategy execution. With the two primary priorities in the Ukraine defence sector of greater security and greater effectiveness of its state institutions, reform of the defence procurement process will contribute to strengthening capacities and effectiveness in both areas.

THE FOUNDATION FOR DEFENCE PROCUREMENT REFORM IN UKRAINE

While defence policy is important, the reality is that, without equipment, one cannot even begin to implement that policy.

House of Commons, *Procurement Study: Report of the Standing Committee on National Defence and Veterans Affairs*

Like many other national governments, the government of Ukraine finds itself challenged to adapt to a dynamic and continually shifting security environment; however, the circumstances of Ukraine in 2016 are unique and pressing. Specifically, the country is struggling with both “external aggression and the dramatically poor shape of its economy” (Dabrowski, 2015: 1). Furthermore, the Government of Ukraine is currently faced with a series of complex conceptual challenges in both the economic and security environments. Experience in conflict globally over the past decade indicates that “the likeliest and most dangerous future shocks will be unconventional” (Freier, 2008: 5). This is particularly relevant in Ukraine, where an irregular, unconventional hybrid conflict in eastern Ukraine is having a catastrophic impact on that region and severely damaging the national economy. It is under the pressing challenges of these circumstances that a financially constrained Ukraine is adapting to dramatically changed conditions, and the national institution most impacted is the military. Defence capital equipment decisions made by the government will affect the ability of the Ukraine military to carry out assigned missions, and the timeliness of the procurement process will determine when the government can employ that acquired capability.

The focus of this paper is to provide a governance framework for transformational reform that could be applied in Ukraine. This paper begins with a description of Ukraine within the global defence procurement environment, followed by a consideration of both reform and innovation in defence. Three elements that comprise the foundation for this reform will then be discussed: development of a defence industry strategy, selecting a defence procurement strategy and reform of the defence industrial base. Improving governance links and integrating these three elements will be discussed in the fourth section. The definition of governance used in this paper is “government’s ability to make and enforce rules, and to deliver services, regardless of whether that government is democratic or not.” (Fukuyama, 2013: 350). With Ukraine ranked number 130 in the 2015 Corruptions Perception Index (Transparency International, 2016: 5), the paper’s focus is specific to the defence sector, and on how military personnel, public servants and industry officials meet the goals and objectives set by government.

Defence procurement is defined as “the process by which national security authorities acquire the equipment and services necessary to fulfil their mission” (Geneva Centre for the Democratic Control of the Armed Forces, 2006: 1). This consists of two distinct elements: first, acquiring new defence capabilities through the purchase of advanced weapon systems; and second, maintaining existing capabilities through the purchase of spare parts and in-service support. Consequently, unresponsive and lengthy procurement processes over time can negatively affect the ability of a military to undertake operations as directed by the government. In particular, defence capital acquisition decisions affect how well military organizations “can implement defence policy. The amount and type of equipment they purchase directly affects their ability to carry out their roles, which in turn determines how and where the government can deploy them” (Auditor General of Canada, 1998: paragraph 4.11). The defence capital equipment procurement process, as articulated by the influential US President’s Blue Ribbon Commission on Defense Management (1987: 13) articulated core concepts that remain the foundation principles for defence procurement reform. These include effective communication at all organizational levels, very well trained and competent personnel, a combined focus on productivity and innovation, effective purchasing practices, as well as a stable budgetary and business planning environment. In the case of Ukraine, ongoing defensive operations since 2014 have damaged or destroyed military equipment at a rate that exceeded replacement. Moreover, a sustained elevated operational tempo can result in equipment aging prematurely, which can require increased maintenance, upgrading, rebuilding and early replacement of major systems (Congressional Budget Office, 2007: xii). An unresponsive and lengthy defence procurement process could result in a decline in capabilities and operational effectiveness. Defence procurement organizations that do not structure themselves to be able to rapidly adapt to changes in the external environment will risk significant failure in future conflicts. Rather than being shaped by a legacy defence procurement process and national defence industrial base, Ukraine, of necessity, has an opportunity to bring a process of transformational change forward in defence procurement.

The paper will conclude by emphasizing that the Ukraine capital equipment program is central to a defence strategy articulated by the government, and reform of both the defence industrial base and capital equipment procurement process are primary enablers that will facilitate strategy execution. With the two primary priorities in the Ukraine defence sector of “greater security and greater effectiveness of its state institutions” (Kapitonenko, 2015: 43), reform of the defence procurement process will contribute to strengthening capacities and effectiveness in both areas.

THE CONTEXT FOR CHANGE

Change does not occur in a vacuum, and transpires throughout the international security environment. The demand for military capital equipment, as well as maintenance and life-cycle management of existing equipment, is particularly affected by the regional security environment. As a result, understanding the context in which Ukraine defence procurement reform would occur is essential. Military organizational structures globally were primarily designed and built in a period that had considerably less complexity. In 2016, the velocity of technological change and the swiftly evolving international strategic environment has resulted in defence establishments scrambling to keep pace with transformational change. Under these circumstances, a principally static defence establishment can lead to inadequate or inefficient organizational practices and procedures. This has resulted in a unique and particular underlying paradox in defence, where despite the fact that modern military establishments are infinitely much more capable and lethal than former generations, they are less robust than earlier generations due to vast advances in technology and the complexity this brings, the proliferation of interdependencies, and the constraints inherent in leaner organizational structures. Consequently, contemporary military establishments can be impacted by capacity limitations resulting in insufficient attention being given to reform when faced with the need to address a number of other persistent institutional pressures, until limitations inherent in outdated establishment structures contribute to organizational failure. This is most evident today in defence procurement. Countries faced with the combination of an extended operational tempo and funding constraints due to challenging fiscal restrictions, both organizational reform and adaption to shifting circumstances can fall behind other nations in a transforming international security environment. This can result in institutional governance issues, due to misaligned organizational priorities and structures.

Confronted by ambiguous warfare, involving “rapidly generating highly trained and disciplined forces who enter the battle space out of uniform and, in coordination with local supporters, utilize psychological operations, intimidation, and bribery to undermine resistance” (Connell and Evans, 2015: 1), Ukraine has had the need for considerable institutional change in defence thrust upon it. The country needs to adapt to a dramatically different security environment, requiring a fundamental re-examination of how defence is structured, organized, operated and funded within a severely resource-constrained environment. This places a premium on the ability of the Ukraine military establishment to both develop and implement strategy, in a domestic environment where there is limited interpersonal trust in Ukraine and a “fertile soil for corrupt practices in the public sector, where there is a markedly low level of integrity” (Shevliakov, 2015: 34).

Challenged by what now appears to be an entrenched situation on the ground, the primary strategic implication of the hybrid conflict facing Ukraine is that the long war character

of “hybrid conflicts is an asset to the hybrid adversary and detriment to the intervening force” (Chuka and Born, 2014: 9). Indeed, to date, Russia has been unable to “translate the strategic and grand strategic advantages of its hybrid warfare strategy into major and sustainable successes on the ground in Ukraine” (Snegovaya, 2015: 7), and continuation of this strategy may result in fading returns. Nevertheless, the combination of the convergent effects of a broad dissemination of technology, employment of propaganda by the adversary, support within some elements of the population in the affected areas, and proliferation of small arms and weapon systems, mean the ability of the government to re-establish functional governance is restricted in those areas. The fundamental challenge for Ukraine is that despite the demanding security environment, there are multiple essential functional state responsibilities competing with defence for funding, including social security payments, economic reconstruction, escalating medical costs, spending on education and an unsustainable national debt. Indeed, without transforming governance and addressing the fiscal challenges, both internally and with international support, Ukraine will be hard-pressed to sufficiently resource the defence establishment to facilitate alignment to the changed security environment.

The circumstances within the global security environment are such that war itself has become a means toward managing the future (van Creveld, 1989), in which successful institutional leaders will need to adapt to a continually shifting security environment or risk failure. This is particularly relevant to the situation Ukraine finds itself in today, where history has repeatedly demonstrated that the foundation of success in military conflicts resides in the effective organization and management of defence procurement. This highlights the need to make strategic choices (Cebrowski and Garstka, 1998), and the importance of a responsive and effective defence procurement process, which places a premium on governance of the defence establishment in Ukraine.

In the current fluid international security environment, near-term issues make long-term planning in defence a challenge (Gansler and Lucyshyn, 2015). In a security environment where Russia “continues to place primary importance on conventional military force” (Rogovoy and Giles, 2015, 2), updating and modernizing the capital equipment inventory in Ukraine is necessary. Assessments have shown key capabilities are missing and outdated Soviet-era equipment is being used (Clark, 2015). Although Ukraine has been significantly impacted by a campaign of hybrid warfare, the transformation of Russian armed forces during a decade of rising oil prices, beginning in 2004, was intended to ensure that military forces “can hold their own in full-scale, high intensity conflict, where a decisive role will be played by land forces” (Rogovoy and Giles, 2015: 4). This implies that notwithstanding the challenges inherent in conflicts where hybrid warfare is a significant factor, “conventional military capabilities” (Chuka and Born, 2014: 23) also remain relevant. This demonstrates that in this strategic environment, defence establishments need to be adaptable to adversaries that alter their strategies and tactics in different ways.

In this perspective, individual and collective training, as well as professional development, are the primary operational components necessary to counter adversaries employing concepts of hybrid warfare.

The Ukraine state has geographical and historical links between Eastern and Western cultures (Raibchuck, 2007) and this provides both opportunities and challenges. Like Canada, Ukraine is dominated by a number of strategic invariants (Sutherland, 1962), of which the most prominent in both countries is geographic location. Indeed, the current circumstances in Ukraine are challenging and will push to the limit “the abilities of even the most capable and committed leadership to manage them” (Menon and Rumer, 2015: 145). To address the current challenges, defence in Ukraine needs to be an enterprise with a primary focus on capital investment in weapon systems and on an effective governance regime in procurement. This construct requires a considerable percentage of the budget to be allocated to capital. However, in a strategic environment where military organizations are focused on operations, expenditure for personnel, operations and maintenance tends to predominate. Intense use of capital equipment on operations increases rates of destruction and damage of equipment (Korb, Thompson and Wadhams, 2006), and requires a process to rapidly replace or upgrade equipment to compensate for losses. Consequently, in a context where the generation of force is a dominant paradigm to sustain and enhance defensive capabilities, this brings a substantial challenge to other competing defence priorities. In particular, in Ukraine, it places an urgency and a premium on establishing the conditions, structures and capability for defence procurement reform.

The priorities for Ukraine in reform of the defence procurement process are establishment of a defence industry strategy, development of a defence procurement strategy and reform of the defence industrial base. This begins with strategy, and requires the establishment of a strong governance framework. The ultimate success or failure will be dependent on execution. Strategy is generally “understood as the linkage of ends, ways and means to achieve specific objectives” (Russell et al., 2015: 1). In the case of large military organizations, they are “centrally directed and reformulations of their concepts of operations and resource allocations must proceed from the top down” (Rosen, 1991: 251). In Ukraine, the tenuous nature of the economy and resource-constrained military places a premium on strategy. This requires a systematic assessment of the medium to long term on strategic environment, followed by programming and budgetary decisions based on that assessment.

The next section will describe the global defence procurement environment and provide context upon which defence procurement reform within Ukraine can be structured and managed.

UKRAINE WITHIN THE GLOBAL DEFENCE PROCUREMENT ENVIRONMENT

A major key to success in defense or war lies in the effective organization and management of Government procurement.

Stuart Evans, Harold J. Margulis and Harry B. Yoshpe, *National Security Management - Procurement*

The current global defence capital equipment procurement environment is characterized by very expensive and technologically advanced weapon systems, unremitting growth in weapon system costs, fiscally constrained defence budgets, habitual project cost overruns and an increasingly globalized defence industry. National governments struggling with budgetary deficits face decisions on how much to allocate to defence and, more specifically, deciding on the budget to procure new or replacement naval, army or air force equipment fleets. Indeed, experience has made it clear that “a major key to success in defense or war lies in the effective organization and management of Government procurement” (Evans, Margulis and Yoshpe, 1968: 1). The distinctions between defence and security are rapidly diminishing and, as a result, military forces will likely be used in the future in different ways than has been seen in the past; therefore, defence procurement processes need to adapt to this evolving environment or risk institutional failure. Consequently, to maintain or enhance competitiveness in defence, change is both inevitable and necessary.

The requirement for defence procurement reform in Ukraine has also been a persistent and challenging subject for governments across Western nations for several decades. The large dollar value of acquisition contracts, the positive employment return from major contracts, the advanced technology inherent in weapons systems to the national economy, the spinoff of political pressure on politicians with a high concentration of defence employment in their constituency, and the power of defence industry advocates, all combine to pressure national governments to generate employment through defence procurement spending. Indeed, the sophisticated, leading-edge technology necessary for the development and manufacture of advanced weapons systems produces the high-value employment that national governments want to foster, in large part for the multiplier effects it provides within the domestic economy. The significant demand for defence procurement funding stems from the rapidly evolving nature of modern warfare and also the so-called “revolution” in military affairs. Most other government programs are much less costly and dynamic, and have only limited-to-moderate technological change.

The long-standing need for transformational change in the defence procurement process has remained constricted by an inflexible, inward-looking hierarchical structure that has focused almost exclusively on incremental improvement to existing processes, instead of looking externally and aligning procurement processes to a shifting external environment. The slow incremental change that has occurred globally in defence procurement over the past two decades has resulted in the present significant limitations in process flexibility and adaptability in comparison to the private sector. The result is a considerable responsiveness gap between the capacity of the defence procurement process and the changing operational requirements of military equipment employed on expeditionary operations.

Applying existing defence management methods and fine tuning current procurement processes will generally produce predictable results, although in a largely unresponsive and costly manner. This conventional approach, however, has not been sufficient to meet the changing needs of expeditionary or defensive operations for some time. Under certain circumstances, incrementalism is an appropriate methodology, particularly in situations where organizations are striving to meet short-term goals or corporations are maintaining a status quo in a mature market. In situations where there is a significant deviance between desired performance and capabilities, more substantive and transformational-level change is required.

As a central function of national governments, defence procurement is not insignificant, as “the process of procuring weapons and the vehicles which carry them is complex, expensive and of great national importance since it strongly influences and may even govern the ability of a country to preserve its way of life and its integrity” (Kiely, 2009: 1). An effective defence procurement process, as articulated by the US President’s Blue Ribbon Commission on Defense Management (1987: 13), is summarized in Figure 1.

Figure 1: Elements of an Effective Defence Procurement Process

- Short and unambiguous lines of communication among levels of management.
- Small staffs of highly competent professional personnel.
- An emphasis on innovation and productivity.
- Smart buying practices.
- A stable environment of planning and funding.

Whereas how procurement contributes to policy outcomes is not always evident in some government departments (UK Office of Government Commerce, 2008: 4), the extent to which the defence procurement process can deliver needed capabilities on a timely basis will be a significant contributor toward the ability of the Ukraine military to continue to respond to government decisions on how to employ it. The defining characteristic of the strategic environment over the past two decades, characterized by Western governments deploying major equipment fleets on peacekeeping or peacemaking operations, is that attrition of important equipment fleets has increased at a rate that is substantially quicker than their replacement (Stiglitz and Bilmes, 2008). As a consequence, sustained achievement of desired defence outcomes is not possible until governments develop a mechanism capable of delivering, or replacing, defence equipment on a timely basis.

The reality of the precarious fiscal situation in Ukraine provides both an incentive and an opportunity for the government to radically change existing processes, which have become entrenched and resistant to modification over several decades. Defence procurement reform needs to be a primary focus of senior management in the Ukraine defence establishment, in order to sustain capabilities and develop capital acquisition plans, while operating with limited resources. The strategic environment in 2016 is characterized by both complexity and rapid change, with globalization impacting our lives through the “spread of new technologies that enable a global information environment and empower people to see more, share more, create more, and organize faster than ever before” (US Department of Defense, 2015: 1). This is the difficult and evolving environment in which reforms to Ukrainian defence procurement reform need to take place in the near term. The substantial technological component and rapid pace of change highlights that continued “action is necessary to create an acquisition workforce that is better suited to dealing with the complex reality of defence acquisitions” (Perry, 2015: 21).

The impact of substantial Ukraine defensive operations beginning in 2014 is that military equipment is being consumed at a rate that exceeds the rate of replacement. This is not sustainable over the medium term, and has resulted in declines in capabilities. The conflicting demands between the resources required to support the long-term nature of managing the stock of capital assets within the Ukraine Ministry of Defence and General Staff, and the immediate and substantial demands from current operations, are a significant strategic issue within Ukraine defence management in 2016. In this respect, the Ukraine military is like a number of Western militaries that are now facing the challenge of both engaging in ongoing operations and in rebuilding readiness, while replacing and repairing damaged or destroyed equipment. Capacity limitations constrain the abilities of defence establishments under these circumstances, where it is difficult to recruit and train increasing numbers of recruits needed for operations, staff and manage procurement projects to address capability deficiencies, and engage in regular combat operations, all simultaneously.

Ukraine and many other nations face rapidly advancing technologies, and the innovative application of those technologies, and a growing array of non-state adversaries, as well as declining defence budgets (*The Economist*, 2010), present challenging circumstances to defence planners. Defence planning processes developed and institutionalized during several decades of Cold War practice have “little experience in crafting investment strategies during periods of military discontinuity” (Krepinevich, 2009: 7). As a result, during periods of changing operational requirements, “if the time required to translate resources to capabilities can be compressed, it is possible to apply resources more efficiently” (ibid.: 40). The consequence of limited responsiveness under these circumstances is that defence procurement processes cannot respond in a timely manner to operational demands and this increases the risk to units conducting military operations.

In the current international security environment, the attrition of expensive weapon systems, which are held by national military establishments in limited numbers due to their high cost on large-scale deployed operations in asymmetric conflicts, has increased significantly. The result is that destruction and damage to significant numbers of these intensely used equipment fleets can, out of necessity, bring forward planned procurement dates for these fleets by a number of years, rendering the traditional methodology of purchasing hundreds of a specific equipment fleet on a 20- to 40-year cycle, depending on the equipment type, obsolete. This defining characteristic of the current environment, whereby attrition of important equipment fleets has multiplied, was echoed in a RAND study that found that “the rapid pace of ongoing operations means that many key weapon systems will reach the end of their service lives sooner than planned or will require intensive maintenance to keep functioning” (Peters et al., 2008: xi).

The substantial constraint of limited financial capacity places a premium on strategy, governance and execution of defence procurement reform, and has the potential to restrict the options available to Ukraine. In periods of revolutionary change, historically, it has “not usually been the states that initiated the revolution, but those that responded best once the technologies and techniques had become common property” (Kagan, 2005: 234). This observation is important to nations, such as Ukraine, that do not currently have the resources to maintain the pace of technological advancement of the American, Russian or Chinese military establishments. In the current international security environment, defence procurement organizations that do not structure themselves to be able to rapidly adapt to changes in the external environment will risk significant failure in future expeditionary operations. This insight is fundamental to how the defence procurement process needs to be oriented in Ukraine in order to be capable of responding in a timely manner to changes in equipment and operational requirements from units in defensive operations. The next section will highlight the need for innovation and reform in defence.

INNOVATION AND REFORM IN DEFENCE

The increasing use of technology, an uncertain security environment subject to rapid change, and the mix of capabilities required, mean that defence departments will need to employ an anticipatory approach to defence procurement, one that is based on developing new concepts, incorporating emerging technologies and adapting to emerging business practices. The multitude of competing demands in defence, combined with departmental institutional policies and procedures in circumstances where the complex challenges of managing combat operations demand the focus of institutional leadership, can result in innovation being relegated to a secondary consideration. Although the necessity to remain aware of substantive industry developments and technology capabilities is not new, the demands of the international strategic environment have changed, reinforcing the importance of this institutional capability. Contributions to organizational innovation can include knowledge acquisition, knowledge dissemination and knowledge utilization. Indeed, “knowledge must become capability” (Clausewitz, 1984: 147). What is needed is system-based critical thinking that generates intellectual capital “to effect transformational change and continual renewal” (Knott, 2004: 2) within the defence establishment.

In the private sector, goods are subject to a continuous competitive marketplace and must adapt to market conditions and respond to customer feedback in order to remain viable. In contrast, feedback mechanisms regarding military innovation are “sparse and spotty, learning and unlearning discontinuous and error-prone” (Alic, 2007: 6). The lack of a sustained feedback mechanism in defence, despite the combination of significant advancements in concept development and experimentation, remarkable developments in simulation, as well as improvements in testing and equipment trials, mean predicting how equipment will operate in a future conflict is problematic, and subject to the uneven impact of numerous diverse variables. Furthermore, the multi-decade life cycle of major weapon systems makes innovation in defence episodic, in contrast to private sector corporations where competitive forces impels unremitting and frequently ongoing incremental innovation.

During periods of peace, innovation in military establishments is derived from uncertainties related to future conflict and by a “process of sponsored or managed generational change within the officer corps” (Rosen, 1991: 109). During periods of conflict or war, this dynamic changes dramatically. Weaknesses and flaws in the defence establishment become clearly evident, and this places a premium on organizational learning and institutional adaptation. Under these circumstances, what is needed are “visionary officers who work steadily to solve problems with existing strategic and operational concepts that they identify through their expertise and operational experience” (Dombrowski and Gholz, 2006: 13). Therefore, senior military officers, within

traditionally conservative military establishments, need to accept that organizational and structural change is necessary and then champion reform.

Reform can either be internally or externally driven. In the case of Ukraine, where the national government is facing a wide range of important and challenging problems, transformational change will need to be both internal, within the defence establishment, and external, through broader government reform. Indeed, within defence it is the officers leading troops in the complex and hybrid warfare in eastern and southern Ukraine who learn from success or failure and have a significant incentive to innovate – both for survival and to execute their assigned operations more effectively. Success is achieved through understanding the steps needed to modify practices and procedures to meet operational need, and then restructuring the organization to institutionalize that change. This places a premium on learning and applying lessons learned. In essence, military innovation is heavily people centric. This, however, is a challenge, as timely documentation of lessons learned due to frequent personnel rotation and reform of practices and procedures in a military organization is extraordinarily labour intensive and often not adequately implemented. Consequently, one strategy could have the Ukraine General Staff support and promote innovative young officers with considerable potential to support the implementation of new capabilities and practices.

Under the current circumstances in Ukraine, time is a fundamental constraint. Diverse challenges are increasing and resources are shrinking, driving the need for an effective strategy to use defence resources more effectively. Having strategic depth is, therefore, now a key advantage more than ever. Furthermore, reform and institutional change is correlated to challenges that are growing in scale and simultaneously shifting in form. Historically, governments in this situation increased defence spending. Currently, however, with a resource-constrained government, the defence budget, as with other departmental budgets, remains under substantial pressure.

Restructuring the Ukraine defence establishment to support agility in response to rapid development and continual change in the security environment and instituting a robust governance regime is at least as important as investing in new technology. Specifically, emerging technologies are “impacting the calculus of deterrence and conflict management by increasing uncertainty and compressing decision space” (US Department of Defense, 2015: 3). Indeed, in defence, in terms of resource demands and equipment requirements, Ukraine is likely to be constantly surprised by challenges. Given the extreme fiscal realities in Ukraine, the government needs to take advantage of this environment to bring forward structural and organizational reforms, together with improvements in efficiency and governance. This needs to be done in a situation where implementing needed reform initiatives necessarily occurs when managing ongoing military operations. As the Ukraine Ministry of Defence shifts its focus to governance of the institution and institutional

reform, the centre of gravity becomes the effectiveness of processes and procedures. The extent to which the defence establishment can optimize those processes and procedures will eventually determine which successes will be achieved.

Improving efficiency has been a long-held focus in both the business and public sectors. While enhancing efficiency remains a fundamental focus of senior management, the increasing velocity of technological advancement and related change to the marketplace, combine to drive intense transformation in management practices. This has major consequences for how equipment is purchased and maintained. For example, the current typical 25- to 40-year equipment life cycle, where new leading-edge weapon systems are purchased and then given upgrades at the midpoint of planned usage, is becoming less optimal since regular technological and capability refreshes to adapt to high-value equipment in a changing security environment has become more the norm. The implication of this dramatic change to historical practice facing defence procurement organizations is three-fold. First, transformational change is needed to shift the organization away from a focus on processes and procedures toward flexibility. Second, there should be a focus on the external environment and on prioritizing adaptability and integrating best practices. Third, small highly competent professional teams must be developed to lead capital equipment procurement projects.

The conundrum in defence is that in the current international security environment, military institutions need innovative and divergent leaders, but have internally promoted leaders who are all a product of their experience within the military. Over the past decade, the environment has changed and, as a result, defence organizations need to find thinkers who can transform military forces in order to succeed. Paradoxically, although military organizations are conservative by nature, to be effective in the current security environment they must have leaders who are adaptive during periods of disruptive change in both warfare and technology. For a military institution, “innovation is not a scientific or technical problem; it is an organisational challenge” (Hill, 2015: 85). Military organizations, which by their very nature are bureaucratic in that they routinely follow standard operating procedures, train personnel in a consistent manner and conduct exercises to ensure that procedures and training meet defined standards. In short, to be innovative, they must be organized for the “systematic abandonment of whatever is established, customary, familiar, and comfortable” (Drucker, 1995: 77). This requires an environment where military leaders are provided the opportunity to develop and experiment with new and innovative ideas. Change in defence is derived from the four competing elements of “policy and ideas, military ability and strength, financial resources and defence industrial capacity” (ibid). The organizational challenge in innovation can be addressed, in part, through the establishment of an innovation centre focused on defence projects that supports the enlargement of a “critical mass across academia, industry and government research community” (Callinan and Gray, 2015: 2) to facilitate persistent and sustainable

innovation through funding support of projects spanning defence, academic and private sector initiatives.

In the current environment in Ukraine, policy and ideas, together with governance, need to provide the framework upon which to begin the process of transformational change in defence procurement. Acquiring and applying knowledge has become essential for success in the international security environment, because otherwise defence organizations will progressively become ineffective and obsolete. Knowledge-based military organizations have undergone dramatic change since World War II, from rapidly advancing weapon systems, to doctrine and organizational and command structures. This process is likely to not only continue, but also accelerate. Indeed, knowledge workers in defence will be increasingly central to organizational success; therefore, defence departments and military organizations will need to change by modifying their character and changing the institutional culture. This shift will need to be a primary element of procurement reform.

REFORM OF DEFENCE PROCUREMENT IN UKRAINE

The Ukraine defence establishment has been adapting to this new security environment since 2014. This shift has been most prominent at the tactical level, and has been supported by the United States, United Kingdom and Canada through training Ukraine army soldiers on fundamental tactics and procedures relevant to the current strategic environment. Ukraine has taken steps to better train its soldiers to operate in an environment where “highly proficient tactical level forces are the basic requirement for effective modern conventional forces facing hybrid adversaries” (Chuka and Born, 2014: 20). The next step in continuing to reshape its defence establishment support to both sustain and enhance capabilities is defence procurement reform. This paper takes the perspective that “the acquisition process, unlike most government pursuits, is a business function. It demands skills and talents that are far more common to the business world than to government and military operations” (Business Executives for National Security, 2009). This perspective allows for a much-needed fundamental reassessment of the defence procurement process by examining successful procurement practices from other areas and adapting them to defence. Organizations in the private sector have transformed the procurement function over the past three decades – to be very responsive to the external environment, lead in innovation and provide an effective and proven model for defence to emulate. Defence departments have much to gain from adapting their procurement processes to follow best practices used by leading-edge corporations.

The problems of the current defence procurement process across nations are long-standing and well known (Kirkpatrick, 1995). Finding appropriate solutions to the existing problems has proven to be the difficulty. The long-standing paradigm in defence procurement

reform, whereby a continual series of incremental changes to individual elements of the procurement process has attempted to reform the existing process has proven to be ineffective. Reform of the defence capital equipment procurement requires a shifting of focus to the institution and to institutional reform. The conflicting demands between the resources required to support the long-term nature of managing the stock of capital assets within the Ukraine military and the immediate and substantial demands from current operations is a significant strategic issue within Ukraine defence management in 2016.

Historically, defence industries have been a source of national innovation and technological progress. Innovation in procurement can be an explicit characteristic of the government contracting process, whereby one mechanism to encourage innovation would be through “specifying requirements in terms of their performance or functional characteristics, rather than their design characteristics” (Industry Canada, 2011: 7). This approach has benefits for both the national government and the defence industrial base. First, it reduces contractor commercialization risks for the technology. Second, it has the potential to open a market for the technology developed for the contract, and sales to other governments. With the trend in defence requirements of having an “increasing emphasis on technology-driven solutions for threats of the future relative to a traditional ‘boots on the ground’ focus” (Public Works and Government Services Canada, 2013: xiv), the need for innovation has increased given the necessity to plan for future mission requirements. Governments also have a role to play in stimulating national innovation through working with the defence industry. This could include establishing university research chairs or supporting university research centres, working with industry-based research centres, partnering with Ukrainian industry leaders in joint research, funding contracted research for academic experts in specific fields, and outsourcing research and development to defence corporations in Ukraine (Canadian Manufacturers and Exporters, 2012: 3).

DEVELOPING A FRAMEWORK FOR PROCUREMENT REFORM

This section describes a framework for reform of the defence procurement process in Ukraine. It begins by setting the conditions for reform by outlining the need for a defence industry strategy. Linked to the defence industry strategy is establishing a defence procurement strategy. Both strategies will inform and shape the final element of modernizing defence procurement, which is reforming the Ukraine defence industrial base to support the needs of the government defence investment plan. The combined effects of these individual transformational initiatives within the defence procurement environment are linked by the establishment of a governance framework.

Defence Industry Strategy

The development of a defence industry strategy in Ukraine would establish the conditions for reform of the defence procurement process. Development and publication of a policy that integrates defence and industry strategy would formalize the relationship between defence and industry (UK Ministry of Defence, 2007). A document of this nature details the industrial capabilities that the government has decided the country needs to maintain nationally, and provides industry with a detailed overview of the sectors and capabilities that the government will be placing an emphasis on in the coming years, and enables industry to plan accordingly. The objective is to make clear how a partnership between defence and industry will determine Ukraine's priority "industry capabilities, the expectations of industry, and the operating environment to be shaped" (Australian Department of Defence, 2007: 2). The relationship between defence and industry is enhanced when defence departments are transparent with industry. One mechanism for government to facilitate this relationship is by informing industry of anticipated future needs (European Defence Agency, 2006). Indeed, policy documents of this nature highlight the importance of government defence industrial policy, and studies have observed that the "defence industry does respond to government guidance and changes in their markets" (Watts, 2008: 54).

A defence industry strategy, or formal defence industrial policy, performs five key functions. First, it establishes a policy framework for interaction between government departments and the defence industry, in order to assist the delivery of needed equipment for military forces when required. Second, it should make the government position on the extent and level of support for the national defence industrial base unambiguous. Third, it provides a formal government overview of the sector, along with a forward-looking analysis of that sector. Fourth, given the international nature of leading defence corporations, a report of this nature should consider transnational implications as well as possibilities for international collaboration. Finally, the development of a government defence industrial policy, or strategy, will necessarily involve considerable consultation and discussion between government and industry (UK Ministry of Defence, 2002: 21). This dialogue is an integral step in supporting and enhancing the relationship between the two parties. Furthermore, a defence industrial policy will be particularly useful if it provides the "socioeconomic rationale for the policies and the premium or explicit cost" (Solomon, 2010: 19) that the national government is prepared to pay for the sustainment of that sector. Establishing a defence industrial strategy or policy is simply one step, in an ever-changing world, to keep government strategies and policies relevant in response to changes in the international security environment (UK House of Commons, 2007).

The defence industry strategy needs to acknowledge the nature and characteristics of the global defence industrial base. This will be a challenge for Ukraine, as globalization

“like so much else, has fizzled out in the contested borderlands of Europe” (Sakwa, 2015: 253). Essentially, the defining feature of supply chains in the twenty-first century is their international nature: the production of equipment is globally fragmented with parts sourced from different countries, produced in several sequential stages and coordinated through international networks and supply chains. This system rewards specialization and innovation. The effect is that individual nations, even the United States, can no longer dominate the procurement process from product development through to production. Consequently, as Ukraine increasingly integrates into the global economy, this will shape and influence its defence and industrial strategy.

National governments are adopting a proactive approach in defence and industry policies. This is derived from recognition of the industrial capability defence procurement projects provide, and the global nature of the defence capital equipment market. Over the past several decades, Western countries have been moving from the traditional and inefficient defence industrial policy approach of offsets to a more active government approach that centres on specific industries and key industrial capabilities (Public Works and Government Services Canada, 2013) to maximize the overall benefit of defence equipment investment. Furthermore, this approach supports companies joining the global defence supply chain through a policy approach that “aims to generate efficient suppliers in the long run” (Berkok, Penny and Skogstrad, 2012: 3). Establishment of a defence industry strategy facilitates the development of a defence procurement strategy.

Development of a Defence Procurement Strategy

The weapons acquisition process is “characterized by a unique set of uncertainties which differentiate it from other economic activity” (Peck and Scherer, 1962: 17). The importance, therefore, of a national defence procurement strategy cannot be overstated. During periods of institutional change in defence establishments, the focus tends to be overwhelmingly on capital equipment, at the expense of institutional reform. In the case of Ukraine, reform needs to precede procurement, and this necessitates a defence procurement strategy. Development of a defence procurement strategy by the government of Ukraine would leverage procurement policies and practices, in order to support the development and transformation of defence-related industries in Ukraine within a global defence industry. Figure 2 lists a number of elements that could be integrated into a defence procurement strategy.

Figure 2: Elements of a Defence Procurement Strategy

- Early and continuous engagement with industry.
- Publication by the Ukraine Ministry of Defence of an annual defence acquisition guide.
- Develop a strategy to support exports.
- Establish key industrial capabilities to support security, industrial and economic objectives.
- Increased training and development of the defence procurement workforce.
- Establish a focus on life-cycle management and support of existing capital equipment fleets.
- Enhanced governance of the defence procurement process.

A key element of a productive defence procurement strategy is early and continuous engagement between defence and industry. First, this provides an open and transparent relationship between the two parties. Second, this two-way dialogue facilitates better understanding by government of potential industry solutions and, in turn, it provides industry with an improved knowledge of government requirements. Finally, government decision making is improved through the increased availability of information. Publication of a defence acquisition guide by the national government on an annual or biannual basis would provide government-owned or private companies in the Ukraine defence industrial base with defence capital equipment requirements over a five- to 15-year horizon. This will enable Ukraine firms planning to bid on specific procurement projects the ability to undertake both informed investment in research and development and to arrange strategic partner consortiums for large procurement projects. To support the impact of domestic defence-related production, enhancing the global competitiveness of the Ukrainian defence industry is a closely integrated procurement strategy objective.

Establishing key industrial capabilities to support security, industrial and economic objectives can provide the opportunity to “develop highly focused capabilities in targeted product or service niches, with a view to moving up global value chains” (Cimon, 2015: i). In essence, key industrial capabilities are skill sets developed within companies that enable those firms to produce exceptional products, which can be sold to both domestic and foreign markets. Establishment of national key industrial capabilities requires an integrated and coordinated effort that facilitates the ability of the Ukraine defence industry to better support the needs of military operational requirements. The skills and ability of the defence workforce is also a primary enabler of procurement outcomes

Ukraine has the advantage of a trained, educated and relatively low-cost workforce, with experience in producing a wide variety of defence equipment. In leading economies, sustained prosperity is generated by a knowledge-based economy, encouraging creativity and supporting innovation. A defence procurement strategy would provide a means by which the Government of Ukraine could “foster the innovative capabilities that characterize world-class defence-related industries” (Public Works and Government Services Canada, 2013: x). Russia’s hybrid warfare (Reisinger and Golts, 2014) provides Ukraine with a clear near-term frame of reference for defence and procurement planning, with long-term planning based on government defence policy.

Concurrent to the development of a defence procurement strategy are training, advanced education and adoption of leading-edge practices in defence procurement, which should be the focus of procurement leadership both in the defence establishment and in the Ukraine defence industrial base. Indeed, the defence procurement organization needs to re-define itself as a learning organization and embrace a culture of learning. Finding new ways of doing business in defence is essential to sustained success. The abilities and skills of the workforce are the foundation of an effective defence procurement process, in addition to a robust governance regime. The project management field started with a sequential project management construct. This largely does not apply to the defence projects that we have now. As a consequence, “changes in process and structure will be largely ineffective unless the government also focuses on a high-quality, high-skill, government acquisition workforce” (Gansler, 2011: 352).

A primary factor supporting defence affordability is the provision of required expertise in all aspects of the defence enterprise. Within defence procurement, education and certification are required in areas of professional qualifications, including program management professional certification, master of business administration or master of public administration programs, and training in complex program leadership and defence cost analysis, as well as various technical staff courses. Project management in defence is dominated by engineers. In the current environment, strong engineering skills need to be complemented with training in management of project complexity and in leadership skills. As the Ukraine defence establishment begins to shift its focus to the institution and institutional reform, the centre of gravity will become the effectiveness of back end or back office processes and procedures, as well as capital equipment project management. The extent to which the Ukraine defence establishment can optimize those processes and procedures will determine which successes are achieved.

Defence procurement includes both the acquisition of new weapon systems, as well as the life-cycle management, repair, overhaul and maintenance of existing capital equipment. Consequently, while acquisition of new systems is a highly visible and important function within defence, establishing a focus on life-cycle management and support of existing

capital equipment fleets also needs to be a key institutional focus. A defence procurement strategy needs to address both of these primary functions. Furthermore, a defence procurement strategy should reinforce long-term sustainability of the defence industrial sector. In this capacity it should support companies across several sectors and encourage the engagement of firms of all sizes. It should establish a fair and transparent process, generate continuous and early engagement with companies and challenge them to integrate into the global supply chain. The national defence procurement strategy shapes and informs the defence industrial base. Defence procurement governance is covered in a separate section.

The Defence Industrial Base

Abrupt severing of defence industry linkages with Russia in 2014 caused significant damage to the Ukraine economy, with the greatest impact in eastern Ukraine. The legacy of defense-industrial interaction between Moscow and Kiev is derived from the Soviet period. Indeed, “when the Soviet Union dissolved in 1991, Ukraine was left with about 30 percent of the Soviet defense industry on its territory, including about 750 factories and 140 scientific and technical institutions” (McLees and Rumer, 2014: 1). This historical legacy has resulted in Ukraine having a significant, but fragmented, defence industrial base inherited from the dissolution of the Soviet Union and the emergence of Ukraine as an independent nation. Much of the defence industrial base remains government owned and based on older technology. Previously closely integrated with Russia, Ukraine now needs to consider reform and restructure of the defence industrial base to align capacity with requirements and with how the global defence market functions, where defence equipment manufacturers “look to both domestic and international markets when planning their products” (Gansler, 2011: 62). Similarly, direct foreign investments in a national defence industrial base can have a positive effect on the economy (ibid: 147). With a diverse defence industrial base, Ukraine may also benefit from mergers and market consolidation, where evidence suggests that remaining firms achieve efficiencies due to factors such “as pooling of knowledge sets and rationalization of plant capacity” (Hensel, 2015: 122), as well as reduced per unit costs.

In 2016, large commercial firms operate and compete in a global marketplace. Raw materials, spare parts and equipment are sourced internationally at the most competitive prices. Declining defence budgets since the end of the Cold War have resulted in several waves of industry consolidation in the defence sector and leading firms in different market segments collaborate on major capital equipment projects. Similarly, constrained national defence budgets are driving countries to enter into multinational weapon system procurement projects that include joint research and development, the transfer of technology and shared production in order to achieve the benefits of economies of scale.

Reform of the defence industrial base in Ukraine needs to be shaped by future domestic requirements, the current international defence market and dominant trends in that marketplace.

Government procurement plans and contracting difficulties tend to dominate the public discourse regarding defence procurement in many countries. The prominent trends within defence procurement globally, and the long-term impacts that these are having on defence departments, can be underappreciated and need to be recognized in order to shape and influence reform of the Ukraine defence industrial base. Whereas the three primary trends of industry globalization, market consolidation and shared production are generally recognized, a number of other key defence procurement-related trends are less well known. Four other significant trends are also impacting this sector. The first of these trends is the increasing use of technology and the subsequent changes that are occurring with advances in current and emerging technologies. Second is the long-term contracting by defence departments, often from the original manufacturer, for engineering and maintenance of major equipment fleets when the equipment is purchased. The contracting out of training to trade schools or colleges for specialized trades, and also for other skill sets such as basic pilot training, is also emerging as a parallel trend. Wars in the middle of the twentieth century and the early phase of the Cold War drove rapid advances in military technology. Nevertheless, several decades ago military organizations shifted from being technology leaders to adapters of more rapidly advancing civilian technologies. The third key trend is the expanding use of advanced technology from business sectors outside defence. Finally, the retirement of the postwar Western baby boom generation of 1954-1964 has begun, bringing a generational change and considerable loss of expertise and experience to defence industries. Collectively, these trends provide both a challenge and opportunity to Ukraine.

The end of the Cold War resulted in decreased expenditure on defence, and substantial consolidation in the defence sector followed. A defence industry strategy will signal to the Ukraine defence industrial base through the combination of a more detailed defence procurement strategy and an investment plan that details a medium-term procurement plan. To achieve organizational success, improved governance is needed, both within government and the Ukraine defence establishment.

DEFENCE PROCUREMENT GOVERNANCE

The hallmark of defence establishments today is that they are in a state of constant evolution. However, during periods of institutional change within defence, the focus tends to be overwhelmingly on equipment at the expense of reform of the institution. In the case of Ukraine, the establishment of a strong governance regime that is integral to the

management of the defence procurement function will strengthen and enhance defence procurement processes and needs to take precedence. In view of complexities inherent in a security environment where threats abruptly evolve, the velocity in which change occurs can exceed the ability of the defence establishment to adapt to change. This taxing context of risk and continuing environmental transformation necessitates a durable governance regime, in order to provide the institutional resilience needed to both mitigate and adapt. Overlaid with the concepts of threats and risks, a prevailing characteristic of the current decade in defence operations is the compression of time. Decision cycles are being compressed and a necessary mitigating pre-requisite influence in a medium-term function, such as acquisition of advanced defence capital equipment, is a robust governance process in procurement. Indeed, the broad range of weapon systems and operational characteristics necessitates use of pluralist methodologies. In essence, while the capital equipment project process has consistent phases, each project is distinct. The procurement governance regime drives project management staff to achieve objectives desired by the government.

The current strategic environment is not conducive to cutting defence force structure in order to re-allocate additional resources to procurement in Ukraine. In a situation where increasingly more advanced technology and weapon systems are needed, effective governance of the procurement function is indispensable to shorten the near-term risk of using previous-generation technologies. Governance reform in defence procurement begins with the establishment of an annual report on procurement by the Ministry of Defence to the Ukraine Parliament. The objective of this report would be to measure progress toward the achievement of established milestones on procurement reform. This includes a number of specific senior government committees and interdepartmental committees. Within the Ministry of Defence and the General Staff, a number of specific committees are needed to provide internal and specialized oversight. In addition, a number of other internal organizations as well as third-party oversight can also improve institutional governance.

Government Committees

Governance and accountability within a nation begins with committees of government ministers. First is a Treasury Board function. The role of a Treasury Board Cabinet Committee is management of government. This includes financial, administrative management, comptrollership and management of the public service, as well as ethics and accountability. A Treasury Board function provides a government committee that approves government expenditure and is the final government review of a defence procurement capital equipment project prior to expenditure approval. Second is a Cabinet Committee on Defence and Security. This committee would be mandated to make decisions on defence

policy and on the roles and responsibilities of the national military forces. Third is a Defence Procurement Strategy Committee that will bring together ministers of different portfolios that impact defence procurement to foster shared information, collective decision making and broad accountability in Cabinet.

Interdepartmental Committees

Improving the horizontal management of defence procurement within the Ukraine government can be achieved through the coordinated implementation of several strategies, facilitated by interdepartmental committees. Experience has shown that the key drivers of change in horizontal initiatives result from either ministerial involvement, leadership from senior civil servants or military officers (Peach, 2004: 27). Maintaining and sustaining horizontal management of the defence procurement function can be supported by the establishment and regularly scheduled meetings of a committee of deputy ministers from involved line departments, with their performance assessments linked, in part, to defence procurement performance results. The governance structure is designed to maximize and support horizontal relationships, and is distinct from the project approval process. Horizontal integration in this formal structure is facilitated through regular interdepartmental meetings and interaction at the deputy minister and ministerial levels. The ministerial-level interaction would occur as a result of a subcommittee for defence procurement reporting to the Ukraine Cabinet. Furthermore, establishing a defence procurement secretariat under the national government procurement organization would strengthen early engagement in the procurement process by organizations within the national government with responsibilities related to defence procurement. This includes soliciting independent advice where required, facilitating implementation of the defence procurement strategy and alignment of effort across defence and other departments. The secretariat would also act as a focal point to address and resolve problems promptly and effectively.

Defence Internal Oversight

Due to the complex and integrated nature of defence management, internal departmental oversight is required at several stages throughout project development, beginning with a defence capability board. This committee provides an early internal challenge function in initial project stages and provides a deliberate structure to ensure strategic alignment with other capabilities. A project management board is a subsequent committee that provides the approval authority for projects seeking approval for definition and implementation stages. An investment resource management committee, chaired by the deputy minister, oversees the allocation and control of the financial resources within defence. The

committee also provides oversight of financial management and control of risks. Finally, this committee oversees the management and progress of major project investments.

Independent Program Oversight

Ineffective program oversight is repeatedly referred to as a substantive weakness in capital program management in defence. Indeed, given the massive size of capital procurement programs in defence, shortcomings in the management of capital projects can lead to significant program over-expenditure and lengthy delays. Insufficiently informed decision making in defence procurement programs is viewed as a significant contributor to project over-expenditure (Miller, 2008). Program management in the private sector is a relatively stable and well-defined discipline, yet in defence – with a variety of competing interests, program delays, changing priorities and requirements, shifting budgets, as well as dealing with political, departmental and military hierarchies – maintaining projects on time, on budget and with the necessary specifications is a daunting task. Independent program oversight is a mechanism that supports informed decision making (US Government Accountability Office, 2007: 6) and is “a support function performed by experienced and skilled practitioners in program management who are free of biases, conflicts of interests, and political influences” (Miller, 2008: 68). Independent program oversight can be delivered through advisory panels, a risk oversight committee, third-party reviews and a chief financial risk officer, as well as a cost analysis, technology and project timeline management group.

Independent program oversight in defence can provide an additional basis for project management expertise, where staff work with project teams to address and correct problems (Defence Materiel Organisation, 2008). An independent project oversight office is a resource that provides projects with advice on a timely basis and supports pro-active measures to resolve problems within capital projects before they develop into major cost increases or time delays. This is an example of an effective reform that can be rapidly implemented to improve the defence procurement process in Ukraine.

Procurement Advisory Panels

Procurement advisory panels perform a number of functions. Most prominently, they provide advice from a diversity of industry expertise, both national and international. In addition, they can help guide projects during times of rapid technological change. Furthermore, they support improved internal project decision making, resulting from feedback on processes and procedures by panel members. Advisory panels provide a source of knowledge of technological, and also of current scientific, trends. Finally, the panel provides impartial and objective advice that is separate and distinct from project staff.

Risk Oversight Committee

Establishing a risk oversight committee in Ukraine, comprised of external experts, and appointments from defence, specialized government procurement offices, Ukrainian government lawyers and industry representatives, that is responsible for overseeing the defence risk management infrastructure, would provide another independent mechanism to improve program oversight. It would include the people, processes and resources of the risk management program. Employing an enterprise-wide risk identification and response reporting strategy, the committee would develop and monitor associated policies, programs and procedures.

Independent Third-Party Review

A core function of a defence procurement strategy is an independent third-party challenge function. This challenge function is designed to provide the government with an impartial validation of requirements for large and complex projects, and to ensure that the requirements specified in the project documentation submitted for government approval are both clearly and appropriately specified. This independent third-party review can occur several times during the project development stages. This often occurs following the options analysis phase. Employment of third-party experts can provide expertise and advice regarding benchmarking and cost estimation, as well as validation of requirements and assumptions.

Chief Financial Risk Officer

To manage their corporate finance risk function, leading corporations employ a chief financial risk officer. Although it originated in the financial sector in the past decade, this position is becoming important in many corporations due to the diversity of business risks that they are now facing. Focused on enterprise-wide risk management within defence procurement, as well as risk oversight for the portfolio of capital equipment projects, this position monitors risk-taking activities and also distributes risk-related reports associated to that portfolio. This position would report to a Ukrainian Ministry of Defence and General Staff Risk Oversight Committee. Indeed, from an organizational perspective, overall risk, including financial risk, is a function best performed at the portfolio level. To manage this risk, the private sector has developed and uses portfolio credit risk models, based on concepts such as value at risk (Linsmeier and Pearson, 1996). The position's responsibilities could include the preparation of independent opinions on capital project financial proposals and associated risk pricing. Establishment of this position would increase the institutional awareness and application of advanced portfolio risk management practices. This would support maintaining an ongoing situational awareness of cash usage and requirements of each capital project, as well as updated forecasted financial requirements for current and future fiscal years.

Cost Analysis, Technology and Project Timeline Management Group

The Cost Analysis, Technology and Project Timeline Management Group would be a centralized organization that includes a Cost Analysis Improvement Group (CAIG), Engineering and Manufacturing Development Group and a Project Management Timeline Group. The function of this group is to provide ongoing independent analysis of capital projects to ensure that the cost, schedule and quality targets are met. The primary objective of the CAIG is to achieve consistent and well-documented cost estimates that can be consistently verified by an independent organization. This can also include contracting for an external cost validation (Public Works and Government Services Canada, 2011). In addition, the CAIG would validate cost estimates at specific project milestones. The primary objective of the Engineering and Manufacturing Development Group is to provide advice and guidance to project offices, while monitoring the technology maturity level and ensuring product design meets customer requirements, specifically, that project task durations, dependencies and critical path parameters are progressing within planned timelines. The Project Management Timeline Group would monitor and validate that the equipment continues to meet schedule and quality targets. This specialist organization is designed to augment and focus particular institutional expertise in specific areas where past practice has been insufficient to address historical project management shortcomings. Based on research that highlights the importance of measuring and applying project knowledge at certain points in the procurement process in attaining timely and affordable equipment fleets (US Government Accountability Office, 2011), a specialist project management timeline group would monitor and provide regular feedback to the Ukraine Ministry of Defence, as well as individual project leaders.

CONCLUSION

The current situation in Ukraine has broad global applicability in 2016. The strategic invariants (Sutherland, 1962) in Ukraine include geography, economic potential, wide-ranging national interests and particular national alignments with other nations. Whereas Ukraine has traditionally been a bridge between Russia to the east and Europe to the west, shifting international alignments are negatively impacting Ukraine and shaping the security posture of the nation. Influencing the impact of these strategic invariants is the reality that, over the past two decades, it has become increasingly apparent that we live in an ever more contested world. As a consequence, the current international strategic environment has placed timeliness of response as the predominant criterion under which defence procurement processes can be judged. Indeed, as time passes, it is becoming more apparent that an era where nations will face greater security challenges has already begun. Whereas the “differentiator in military operations could previously be measured in terms of scale and potency, today it is more about agility and the ability to create an appropriate military effect rapidly and in response to changes in the operational environment” (Jobson, 2008: 16). This altered strategic environment illustrates the need for national defence establishments to shift their focus to institutional reform, in order to remain responsive to the security environment. In effect, the effectiveness and responsiveness of defence management processes such as business planning or managing the defence capital equipment process are becoming primary operational enablers. Indeed, with the climate of fiscal austerity in Ukraine at present, the defence establishment needs to take advantage of this environment to bring forward structural, organizational and procedural reforms to increase efficiency and effectiveness.

The experience in Ukraine has demonstrated that in the current security environment defence organisations, out of necessity, are engaged in non-traditional kinetic activities. Most prominent is what Ukraine defines as “Anti-terrorist Operations” or ATO, as well as care of local populations in the eastern section of the country. Reform of the defence procurement process in Ukraine, based on a defence industry strategy and defence procurement strategy, articulated by government policy, would enhance the manner and speed in which projects are implemented, managed and governed. In the absence of a procurement process capable of providing a timely response to changes in capabilities needed by equipment in use in deployed operations, the ability of military forces to successfully achieve the goals and objectives of government policies is severely constrained. Long-standing military organizations are conservative in nature, and in general have a tendency to avoid making substantial changes to processes or procedures until they reach the point where they are noticeably ineffective, at which time change comes too late and extraordinary institutional transformation is then required.

National military institutions tend to be exceptional in operations, either domestic or expeditionary, and exhibit both flexibility and adaptability. The recent example of the North Atlantic Treaty Organization member states that participated in the Alliance-led International Security Assistance Force in Afghanistan demonstrated both considerable learning in operations and adaptability in changing operational processes demanded by the particular combat environment. In the case of support processes such as procurement, many defence institutions are slow, bureaucratic and inflexible. This divergence of responsiveness between operations and support is derived from the consequences of failure. In operations it is immediate, whereas in support processes failure occurs over an extended period of time until it reaches a tipping point. In the procurement function responsibilities are much more diverse. Consequently, effecting change is much more difficult. Therefore, a focused organizational effort in the form of a robust governance regime and sustained labour is necessary.

One of the most prominent characteristics of defence is that it is a capital-intensive activity. From a very basic perspective, if armies, navies and air forces do not have the quantities and capabilities of equipment required, their ability to do their assigned tasks is severely restricted (Kirkpatrick, 2004). Within the current defence construct, the defence procurement process in Ukraine does not fully support the achievement of government objectives on a sustainable basis. Under the current security environment in Ukraine, the government cannot afford to take an operational pause. As a consequence, the need to undertake fundamental reform in the defence sector is essential. Every nation has created its own distinct process to manage the defence capital equipment procurement process, which are intended to meet the specific “needs and requirements of its armed services but also reflect its economy and defence industrial base” (Auger, 2014: 1). The challenge for Ukraine is to develop a defence procurement model that meets its needs in response to their defence and security challenges. In a time when the concepts of “lean” and “efficiency” feature prominently in commentaries on defence management practices, the recent experience in Ukraine highlights the need for resilience and redundancy. Finally, the centre of gravity for the Ukraine defence establishment is governance. The Ukraine National Defence University has a Building Integrity Training and Education Centre that provides training to personnel working in the security sector in Ukraine (Fetterly, 2015). The establishment of this centre in 2014 is an example of employing education to systematically and consistently bring about cultural change through education. The Ukraine defence establishment has the opportunity to leverage this type of capacity building to institute governance as a primary institutional imperative, and to set an example other organizations in Ukraine can emulate.

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