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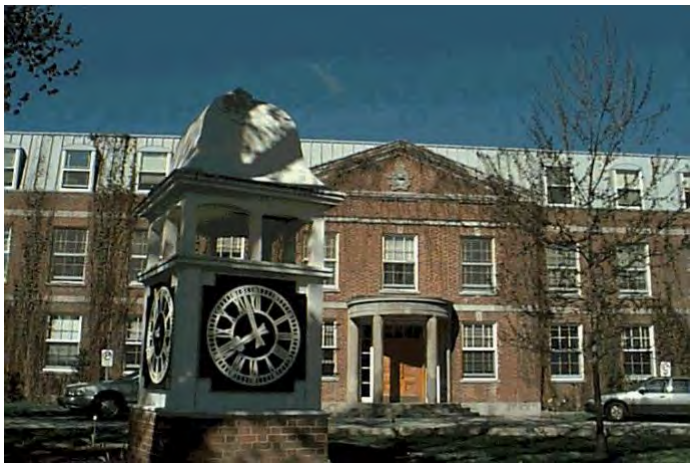

BUILDING AGILITY INTO THE CANADIAN ARMY EQUIPMENT PROCUREMENT PROCESS

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AIM

1. The aim of this service paper is to articulate the fundamental problems with the current organizational structure of the Canadian Army (CA) and its Project Management Staff, as they relate to the development, procurement and sustainment of new and future CA equipment. The paper will focus on the essential changes required to enable the CA to become an Edge Organization in terms of equipment procurement.

INTRODUCTION

2. The CA often implements new equipment fleets that have outdated technology or do not fit the construct of the existing force structure. New equipment fleets are also often not able to be supported by Combat Service Support (CSS) elements, specifically Royal Canadian Electrical and Mechanical Engineering (RCEME) technicians who are integral to the organizations employing this equipment or providing external maintenance support. This is not the case for Canadian Special Operations Force Command (CANSOFCOM), which has been able to expedite the procurement process while still adhering to government policies. Although there are significant differences in the volumes and types of equipment that the CA procures compared to CANSOFCOM, many of the Power to the Edge or Agile principles used by CANSOFCOM can be applied, assuming an appropriate Risk Management construct can be implemented.

3. It is increasingly important for the CA to become more Agile with equipment procurement as technology and capabilities are being developed and manufactured at an exponential rate across the world. Sustaining the current construct of fifteen-year

procurement projects will inevitability allow adversaries to outmatch CA capabilities, as well as prevent the CA from properly integrating with its allies or adding value to coalitions.

DISCUSSION

4. The current construct for Force Development (FD) in the CA, specifically procuring new equipment, does not reflect a systems perspective that is outlined in the 2007 CF Leadership Doctrine – Leading the Institution. There is a significant disconnect between the key functional organisations within the procurement process: Director of Land Requirements (DLR), Director General Land Equipment Program Management (DGLEPM), Director Land Procurement (DLP) and the Force Employer (FE), which in this paper represents the end user of the equipment. The recent fielding of the Tactical Armoured Patrol Vehicle (TAPV) is a perfect example of that disconnect, in terms of the equipment not suiting the needs of the intended FE, the light infantry battalions. The TAPV was procured for both armoured and infantry reconnaissance elements, however was significantly too large for light infantry reconnaissance, resulting in the light infantry battalions rejecting the platform and more TAPVs ending up with the Reserves. Conversely, the CANSOFCOM model for FD has been quite successful in achieving timely and accurate delivery of required equipment to its FE, due to having proper integration of representatives from the key organizations described above. CANSOFCOM has been successful because they have effectively implemented aspects of the Albert & Hayes' Power to the Edge concept for Command and Control as well as the Competency, Authority, Responsibility (CAR) Command Model, developed by

Pigeau-McCann within their procurement processes. Both of these concepts are described below.

5. In the current CA equipment procurement construct, DLR, DGLEPM and DLP work in silos throughout the procurement process, with minor instances of overlap. Identifying an equipment project, estimating costs and developing statements of requirements (SOR) are done in significant isolation by two or three individuals within DLR typically with only an operator (not necessarily a related operator) background, during the Identification and Options Analysis phases of a project. It is only during the Project Definition phase that DGLEPM is able to start funding dedicated Project Management (PM) staff and where the development of the Statement of Work (SOW) begins. There are instances during the Identification and Options Analysis phases that DLP and DGLEPM representation is brought in to assist with cost estimates, though they are always balancing internal priorities and unable to dedicate significant effort. DLP representation is also involved during the one or two industry engagements that occur following the development of a SOR. DGLEPM is the lead throughout the Definition, Implementation and Close out phases, but they are tied to the budget, schedule and scope constraints articulated by DLR. Another consideration is that throughout the Project Life-Cycle, the FE has extremely limited interaction with the DLR and DGLEPM staff. There are typically only two or three conferences over multiple years where the FE is represented and has an opportunity for comment, until they are more involved during trials of the end product and implementing it across the CA.

6. The CANSOFCOM procurement structure has a significantly more integrated approach. Within CANSOFCOM units there are FD cells led by engineering officers that

contain multiple technical experts responsible for the developing the SOR. Colocation with the FE enables force capability integration, provides CANSOFCOM FD cells operator Subject Matter Experts (SME), as well as a clear understanding of the force employment concept, which is agile and changing frequently. In the near future, some units will have FD cells with the capacity to write SOW and Bid Evaluation Criteria for projects in order to build more synergy and prevent disconnects between the SOR and SOW. Throughout the development of the SOR, these FD cells are funded to attend technology conferences worldwide, as well as to bring in industry, allowing FE SMEs to trial equipment in order to refine SORs. CANSOFCOM HQ has a Force Development Directorate focused on forward thinking and responsible for innovation and science future capability. Attached to CANSOFCOM HQ is a Project Management Office (PMO) cell from DGLEPM, which works strictly on CANSOFCOM equipment projects that has DLP and PSPC representation imbedded.

7. The key differences between the CA and CANSOFCOM procurement processes are within the first three phases of the project. The CANSOFCOM model has effective integration of FD, FE, PM representation and industry operating in parallel at the unit level, enabling the creation of a SOR and eventually a SOW that accurately represents the requirements of the end user. In contrast, the CA model has limited interactions, happening in series at the L1 or higher. Most believe that integration is only possible due to CANSOFCOM being a flat organization compared to the CA; however, there are many Agile attributes that can be adopted by the CA, if it is willing to embrace the Power to the Edge concept described in CAF leadership doctrine dating back to 2005 and employed by CANSOFCOM.

8. The premise of the Alberts-Hayes' Power to the Edge concept is that for military organizations to be successful in the information age, power needs to be pushed to the lowest levels in order for the organization to become an Agile organization with the attributes of: Robustness, Resilience, Responsiveness, Flexibility, Innovation and Adaptation. Power to the Edge focuses on the sharing of information, empowerment of low-level commanders, and shared intent. In an Agile organization, higher-level commanders set the conditions while empowered lower level leaders are authorized and resourced to achieve the shared intent. All of these attributes have been outlined as desirable in doctrine as well as in policies such as Strong Secure Engaged (SSE); however, power in terms of the CA equipment procurement process, is still centrally controlled at the highest level. There are sub-processes within the CA procurement process that must be delegated to lower levels, similar to those of CANSOFCOM, for the CA to become more Agile.

9. The centralized control of the CA procurement process stems from risk aversion, not only at the CA-level but from the Department of National Defence (DND) and government as a whole. When faced with scrutiny on capital procurements, the DND risk mitigation included more control measures through the establishment of the Independent Review Panel for Defence Acquisition (IRPDA), which reviews a significant portion of DND major capital projects. Based on the quality of advisors on this panel, it is evident that DND is focused on ensuring that competent personnel are within the process; however, DND has focused this competency at the highest level of the organization, creating a funnel point in the procurement process.

10. A more appropriate risk mitigation measure would be to follow the Pigeau-McCann CAR Model, and ensure that the competency matches the authority and responsibility of commanders. In terms of delegating sub-processes of the CA procurement process to lower levels, it is essential that the CA ensures the competency of those FD personnel through appropriate training, evaluation and selection processes, which resemble the expected level of competence amongst the CANSOFCOM community. Equally important to delegating the responsibilities of procurement processes to highly competent personnel, is delegating them the authority (for example financial authority) to achieve success.

11. Creating FD Cells in the CA.

a. Decentralized CA FD Cells. Currently, FD in the CA is operating too far from the FE. DLR is centralized in Ottawa with silos of small groups of disconnected operators working on SORs. They rely on the technical advice from DGLEPM, which is also disconnected and working from Ottawa and not in the CA. The principle of getting FD cells as close as practically possible to FEs is critical to benefit from the SMEs available in the field force. Integrating FD cells at the division-level would allow these cells to integrate with the Reserve FE as well as the Regular FE. Further, physical colocation with Brigade units would enable improved integration with SMEs across all trades. FD of capabilities that span across multiple divisions (such as Light Armoured Vehicles (LAV)) should be assigned to one of the FD cells, and focus on bringing over FE from the other divisions to ensure all stakeholders are engaged at key milestones in the projects.

The end result would see DLR decentralized, resembling the structure of CANSOFCOM FD.

b. Responsibility and Authority of CA FD Cells. The responsibility of the CA FD cells would be to develop both a SOR and SOW for each project they are assigned on behalf of the CA. It is in this construct that CANSOFCOM has been successful in terms of expediting the equipment procurement cycle and delivering capability that is cutting edge and that meets the needs of their FEs. These FD cells would be responsible for continuously interacting with the industry and allied Research and Development (R&D) programs (as described below), in order to remain agile and ensure that the most current and innovative technologies are integrated into CA equipment, especially as technology is constantly improving and changing. These cells would also be responsible to remain continuously integrated with FE SMEs to ensure the equipment procured meets their needs. The authority and funding to carry out these responsibilities is the most critical aspect of this model. As stated previously, effective risk management is the key to success, specifically ensuring the CA is empowering competency.

c. Competency of FD Cells. CANSOFCOM unit-level FD Cells are led by engineering officers and comprised of technicians and other technical experts. Both the military and civilian personnel in CANSOFCOM go through a lengthy selection process and training, which provides a baseline of competency in itself. CANSOFCOM invests in the competency of their FD cells on a regular basis in order to ensure they are capable of delivering high quality equipment and support to CANSOFCOM units. Currently, DLR is constructed of FD cells containing one

or two operators on each project, all of which have completed a generic army technical staff course. This does not compare to engineering officers or civilians possessing at least a four-year engineering degree and potentially possessing industry experience, coupled with technicians who have spent their careers repairing and modifying land-based equipment. Focusing on the employment of engineering officers and technicians from fields like the RCEME Corps would prevent operational biases, based on the nature of their employment structure within the CA, as well as ensure complete life-cycle costing and consideration is appropriately factored into the project. Having FD cells comprised of like-minded technical officers would foster the self-synchronization amongst projects and cells, with regard to identification of commonality amongst systems and promoting mutually supportive solutions. However, the technical background of individuals is not sufficient; it is still critical that CA FD cells be comprised of technical personnel and civilians that have gone through a rigorous selection process and training to ensure their competency meets what the CA requires and potentially negate redundant monitoring processes such as IRPDA.

d. Continuous Interaction with Industry. CANSOFCOM unit-level FD cells have continuous interaction with industry as they attend multiple international conferences throughout a project's life-cycle. In so doing, they remain knowledgeable of technical advances and allow FE to trial new technologies that may suit their needs. FD engagement with PSPC is required, however these trials have proven significantly beneficial in terms of accurate writing and refining of SORs and SOWs. CANSOFCOM FD cells are empowered (through authority and

funding) to do this interaction independently, which provides them the agility to react to changing technology. CA FD cells would require this same level of empowerment to achieve the CA's desired end state.

e. Continuous Interaction/Integration with FE. The importance of continuous integration with FE specifically relates to ownership of the solution. The more FE at the lower levels are integrated into trials of equipment and development of SORs, the more FD understand the need and the more confidence FE has that an effective product will be provided. Furthermore, the integration between FE and FD while developing SORs and SOWs saves time and numerous iterations of review compared to the current DLR construct.

f. Continuous Interaction with Allied R&D. This is an aspect that neither the CA nor CANSOFCOM has effectively exploited. Currently there are multiple CA Liaison Officers (LOs) on exchange or deployed to Allied R&D departments and exposed to technologies that the CA will be expected to be able to integrate in the future. With the United States leading the R&D on numerous military technologies, such as autonomous weapons systems and 3D printing, the CA, through these FD cells, should be exploiting those LOs available.

CONCLUSION

12. In order to ensure equipment procurement is timely, contains present-day technology and suits the requirements of its FE and operational domains, the CA should strongly consider decentralizing its FD, learning from the successes of the CANSOFCOM model. The need and desire to become more agile as an organization

requires the CA to adopt the concepts described in Power to the Edge, starting with its equipment procurement processes. Empowering competent, technology focused personnel will allow the CA to remain relevant in an constantly changing technological operating environment.

RECOMMENDATION

13. It is recommended that the CA adopt a decentralized FD structure with each CA Division being assigned a FD cell, led by a senior officer with an engineering background. The full composition of each FD cell, the selection process, and training regime should be further researched to ensure these FD cells are comprised of competent individuals that are able to meet the intent of the Commander of the CA, with regard to CA equipment procurement. It is recommended that the FD cells have the authority and be funded to complete all activities and critical milestones of CA procurement projects up to the completion of the SOW. Specifically, FD cells need to be funded to enable continuous involvement with industry, including exposure and trial of new technologies that have the potential to be incorporated into CA equipment. It is also recommended that the implementation process be iterative, trialing this concept with the implementation of one FD cell and assigned one or two projects.

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