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## THE DEPARTMENT OF NATIONAL DEFENCE AND CANADIAN ARMED FORCES SUPPLY CHAIN: PUBLIC ADMINISTRATION CHALLENGES AND OPPORTUNITIES

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**JCSP 41**

***Exercise Solo Flight***

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*Disorder is born from order; cowardice from courage; weakness from strength. The line between disorder and order lies in logistics; between cowardice and courage, in strategic advantage; and between weakness and strength, in strategic positioning.*

- Sun Tzu

## INTRODUCTION

Providing the Canadian Armed Forces (CAF) with the vehicles, equipment and materiel necessary to perform its duties requires an extensive and robust supply chain, managed by a diverse team of uniformed logistics professionals, public servants and civilian contractors. Department of National Defence (DND) inventories account for \$9.8 billion worth of Canadian government materiel; including \$6.1 billion in inventory and \$3.7 billion worth of asset-pooled items, such as repairable spare parts.<sup>1</sup> With over 400,000 different stock keeping units (SKU), the DND supply chain distribution network represents one of the largest and most intricate distribution networks in Canada.<sup>2</sup> By comparison, one of the largest private sector supply chains in Canada is Canadian Tire Corporation, which currently has 136,000 different SKU across all of its 491 Canadian stores.<sup>3</sup> Clearly, at three times the size and a mandate to provide concurrent materiel support to domestic and international operations, the DND supply chain is unique in terms of size, complexity and responsibility.

DND is a department of the Canadian federal government, just like the Department of Foreign Affairs, Trade and Development Canada (DFATD), Industry Canada or Transport

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<sup>1</sup> Chief Review Services, *Audit of Warehouse Management* (Ottawa: Department of National Defence,[2014]),. iii.

<sup>2</sup> Raymond Chabot Grant Thornton, *WMS Study for National Depots* (Montreal: Management Consultants,[2011]),. 1.

<sup>3</sup> Canadian Tire Corporation Limited, *Annual Information Form* (Toronto: CTC Limited,[2013]),. 1.

Canada. However, they are the largest Canadian government department in both personnel and budget by a wide margin and are unique by their inclusion of the CAF as part of the Defence Portfolio.<sup>4</sup> Under the National Defence Act (NDA), the CAF is a completely separate and distinct organization from DND. Nevertheless, the CAF is wholly reliant on DND for support, and is therefore intrinsically linked as a government public entity. As such, DND and the CAF are subject to the same rules and regulations that other government departments are obliged to follow, such as Acts of Parliament, the Employment Equity Act and the Charter of Rights and Freedoms.<sup>5</sup> The merits of these government regulations are not in question; they are in place to ensure accountability to Canadians.

Public administration presents unique challenges to achieving the efficiencies commonly found in private sector supply chains. For this reason, the DND supply chain's subjection to public administration is both strength and weakness. On one hand, there is immense financial and human resources (HR) support that can be directed to processes and procedures in line with government initiatives. On the other hand, the monetary and HR support can be intermittent and inconsistent depending on government yearly priorities.

There is an outdated misconception amongst many military supply chain managers that claim a military distribution network cannot be *efficient*, because it has to be *effective*. With the advent of the information and digital age, worldwide integrated logistics is commonplace in today's leading businesses and the military cannot be an exception. In fact, with sweeping budget

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<sup>4</sup> Department of National Defence, "About DND and the CAF," <http://www.forces.gc.ca/en/about-us.page> (accessed 5 May, 2015).

<sup>5</sup> Craig Stone, Queen's University . School of Policy Studies and Breakout Educational Network, *Public Management of Defence in Canada* (Toronto: Breakout Educational Network in association with the School of Policy Studies, Queen's University, 2009), 254., 1.

cuts across all government departments and increased scrutiny for accountability of national materiel, the DND supply chain must be a leader in the adoption of best practices for operating efficiencies. The argument can be made that as the supply chain moves from the strategic level depots, to operational level warehouses, to shelves and bins at the tactical level, the focus can shift from efficiency to effectiveness. However, for the purposes of this paper, only the strategic-level DND/CAF supply chain depots will be evaluated in order to provide a more focussed analysis of how the operations of the national supply chain are influenced by public administration.

Using this methodology, the first part of the paper will discuss some of the issues DND faces with being a public entity. Specifically, the demands for public materiel accountability under rigid government processes, the challenges presented during frequent change management of the ERP system of record, and lastly how HR management ebbs and flows during periods of budget cuts affect the efficacy of warehouse management and materiel disposal. The second part of the paper will discuss some of the options available to DND to increase materiel accountability through adoption of several industry best practices. Namely, the opportunities available for public-private partnerships (3P), collaboration with US military supply chain experts and lastly, the concept of a formal affiliation with a leading Canadian university in supply chain management to educate DND and CAF logisticians in complex materiel management.

Through exploration of some of the current issues affecting the complex DND materiel distribution network, it will be demonstrated that the opportunities presented for external collaboration offer tremendous strategic benefit through sharing of industry best practices and lessons learned in order to improve DND and CAF logisticians writ large.

## **PUBLIC ADMINISTRATION CHALLENGES**

Accountability to the public is the greatest difference between running business operations in the public sector versus the same type of operation in the private sector. In the private sector, a tremendous amount of emphasis is placed on efficiency and profitability. Conversely, the government's mandate goes beyond the bottom line; it must ensure that public services are carried out judiciously and with careful consideration of the use of tax payers' dollars. The public sector rightly stresses the importance of accountability, probity and transparency.<sup>6</sup> This section will explore some of the current challenges facing the DND/CAF supply chain and how they can be strength and weakness. Through examining the demands of public accountability, such as DND fluctuations in funding and personnel, the challenges of operating with optimum efficiency as a public organization can be better understood.

### **Public Accountability**

DND has increasingly been placed under the microscope in recent years due to the high-profile missions the CAF have been tasked to perform. The modern security landscape changed drastically for Canada following the terrorist attacks against the United States (US) in 2001, which consequently launched the CAF into a combat mission in Afghanistan for over a decade. During the mission, the support received from the Canadian government and public was immense. The government ensured that the CAF had the resources and materiel required to safely complete the mission asked of them, pushing through expedient procurement of essential equipment.<sup>7</sup> The procurement of tanks, mine-hardened patrol vehicles, counter-improvised

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<sup>6</sup> Ibid., 143.

explosive device (C-IED) suites and strategic airlift is an example of how government procurement policies, often viewed as cumbersome and constraining, can be agile and flexible in partnership with both private industry and US military partners in response to unforecasted events or circumstances.<sup>8</sup> The associated spare parts for these platforms, known as asset-pooled items, as well as unique materiel acquired for the theatre have created issues for DND officials in accountability. Large-scale write-offs of materiel have led to significant adjustments to the government's consolidated financial statements each year, raising concerns by the Office of the Auditor General that there isn't sufficient accountability for materiel in the national warehouses.<sup>9</sup>

During the Afghanistan conflict political and strategic authorities were also supportive of the conflict by giving space to those CAF members engaged in support to operations a reprieve from rigid enforcement of defence policies. While not entirely deliberate, these perceived exemptions from government policy created debate surrounding accountability within defence. Then Chief of Defence Staff (CDS), General Hillier, enjoyed a degree of influence over defence policy that no CAF leader has wielded in a generation, personally accusing civilian officials' "processes and procedures" as undermining the armed forces' efforts in Afghanistan.<sup>10</sup> The high operational tempo observed during the Afghanistan conflict also created a tendency to expedite delivery of materiel to support those on operations at the expense of processes and procedures.

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<sup>7</sup> Charles Davies, "Canada's Procurement Strategy: An End Or a Beginning?" *Conference of Defence Associations Institute* Vimy Paper 20 (2014), 1., 5.

<sup>8</sup> A. Imtiaz Hussain, Satya R. Pattanayak and Anil Hira, *North American Homeland Security: Back to Bilateralism?* (Westport, Conn.: Praeger Security International, 2008), 327., 58.

<sup>9</sup> Tom Lawson and Richard Fadden, Joint CDS/DM Directive - Materiel Accountability, 12 November 2014, 2014., 1.

<sup>10</sup> Philippe Lagassé, *Accountability for National Defence: Ministerial Responsibility, Military Command and Parliamentary Oversight*, Vol. 4, March 2010 (Montreal, QC: Irpp, 2010), 61., 4.

Now, due to the decade-long conflict in Afghanistan (which cost Canada an estimated \$18 billion) and the concurrent spending stimulus following the global economic crisis, the government is cutting departmental budgets and increasing scrutiny for materiel accountability.

As a public entity, DND has a responsibility to Canadians to ensure the proper stewardship of public resources under their control, regardless of operations. Recent reports by the Office of the Auditor General provided to the Standing Committee on Public Accounts (SCOPA) highlighted DND difficulties properly managing, recording and valuing materiel, which in turn led to over \$100 million dollars in pricing differences in the government's consolidated yearly financial statements.<sup>11</sup> The current CDS, General Lawson, sights operational credibility as the centre of gravity for the CAF.<sup>12</sup> If the CAF doesn't have the requisite support from DND in order to conduct the operations given to them, institutional credibility in national defence will be lost. Moreover, if DND is shown to be incapable of managing the billions of dollars of inventory entrusted to them on behalf of Canadians, the consequences would undoubtedly be dire and would impact the CAF's ability to conduct operations.

The DND supply chain faces unique challenges balancing demands for private sector best practices for efficiency, against the requirement to be effective at delivering materiel when absolutely needed for CAF operations, all the while being accountable to the Canadian public.

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<sup>11</sup> Standing Committee on Public Accounts, *41st Parliament, 2nd Session, Public Accounts of Canada 2013* (Ottawa: House of Commons,[2013]).

<sup>12</sup> Chief of Defence Staff, CDS Guidance to the CAF, 7 June 2013, 2013., 5.



## Change Management

Change management is a challenging endeavour for even the highest performing private sector companies. Making large, fundamental changes to how business is conducted requires a clear vision, empowerment of leaders and employees to achieve the goals laid out, and most importantly, the patience to go through the process. The external influences imposed on public sector operations makes successful change management even more challenging. Change management is further exacerbated by the numerous political, strategic and operational influences on the DND/CAF supply chain. Moreover, the cultural differences within each of the operational and tactical organizations present a significant challenge for unified, efficient warehouse management and achieving uniform change management goals.<sup>13</sup>

John P. Kotter, a leadership professor at Harvard University, is one of the foremost authorities on change management. In his acclaimed book, *Leading Change*, Kotter outlines eight key steps to successful transformation and the associated errors many organizations fall victim to during change implementation.<sup>14</sup> One of the major changes implemented by DND for the national supply chain was the adoption of new Enterprise Resource Planning Systems (ERP), procured to manage the national materiel distribution network and achieve efficiencies through the use some of the premiere warehouse management software available in the industry. The problem was not the software chosen; rather, it was the process in which the program was implemented. There are two principle examples of how DND has been affected adversely during the implementation of new ERP software that elucidates the challenges with effective change

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<sup>13</sup> Chief Review Services, *Audit of Warehouse Management*, 1, iii.

<sup>14</sup> Harvard Business Review Press, *HBR's 10 must Reads on Change Management*, 2011, 210, 3-16.

management as a public enterprise. The first is the implementation of the Canadian Forces Supply System Upgrade (CFSSU) and the second is the currently ongoing implementation of SAPs Defence Resource Management Information System (DRMIS).

The CFSSU project was announced in 1993 as part of a holistic restructuring of DND to achieve efficiencies within the department, including the CAF. Mincom Information Management System (MIMS) was selected as the system of record to provide an enhanced and fully integrated materiel management and accounting system that would achieve new efficiencies, cut costs and reduce inventory. Moreover, the project was only supposed to take three to four years to implement.<sup>15</sup> This project was culpable of the first two errors Kotter outlines in effective change management: not establishing a great enough sense of urgency; and not creating a powerful enough coalition.<sup>16</sup> The project lacked buy-in from the supply chain professionals in DND and the end users in the CAF. Furthermore, the project wasn't fully operational until 2001, eight years after it was announced. Delays were attributable to program managers' desire to "Canadianize" the ERP, rather than using the program the way the rest of the business world already was. This customization, in addition to DND HR cuts that were happening concurrently, contributed to the project taking twice as long to implement and running over budget. The requirement for government departments to "Canadianize" existing goods or services to meet the demands of public administration will remain a constant challenge for commercial off-the-shelf (COTS) procurement in the future.

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<sup>15</sup> Department of National Defence, "Government Restructuring and Implications for DND" (Memorandums, Canadian Armed Forces, Ottawa, 1993).

<sup>16</sup> Harvard Business Review Press, *HBR's 10 must Reads on Change Management*, 2011, 210, 3-7.

The second example is the currently ongoing roll out of DRMIS. Project funding was cut during crucial phases of implementation, leaving significant capability gaps in the software used and an absence of project support personnel. This has affected DND's ability to effectively account for the resources within the supply chain.

In 2011, DND received recommendations for the best SAP Warehouse Management Solutions (WMS) from an independent consultant firm, Raymond Chabot Grant Thornton, which identified SAP Extended Warehouse Management (SAP EWM) as the best solution over the more established but more dated Logistics Execution Warehouse Management (LE-WM). This was confirmation of the ERP that DRMIS would be, with project goals of increasing the security of data and materiel, improving inventory accuracy, and optimizing the space utilization within crowded DND warehouses.<sup>17</sup>

While most supply chain professionals within DND were excited about the potential of a new SAP ERP, the solution recommended wasn't entirely what was implemented. This again reiterates a challenge with a publicly administered materiel distribution network. The external drivers on DRMIS implementation committed several errors according to Kotter's steps to leading change; specifically, declaring victory too soon, and not anchoring changes in the corporation's culture.<sup>18</sup> Midway through the roll out, with many issues still to be ironed out, funding for the project was cut dramatically in an effort to save costs. Successful project implementation was declared too soon and consequently, Director of DRMIS lost the majority of their project support staff. Furthermore, key modules that facilitate efficient warehouse

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<sup>17</sup> Raymond Chabot Grant Thornton, *WMS Study for National Depots*, 1, 1.

<sup>18</sup> Harvard Business Review Press, *HBR's 10 must Reads on Change Management*, 2011, 210, 14-16.

management were not enabled, severely affecting the user's ability to manage the complex warehouses. With the incomplete software implementation across national warehouses, cultural changes have not been positively affected. There are still "pockets of resistance" across the CAF where trades and units feel that DRMIS is not the solution they need and believe that it will adversely affect their ability to support garrison and deployed operations. This is clearly an issue in effective change management and will need to be resolved for DRMIS to become the ERP system of record DND and the CAF intend for it to be. While there may still be issues in functionality, choosing not to partake in change within an institution such as DND is counterproductive and affects everyone involved in the project. It is important that the next generation of leadership within DND and the CAF understand that DRMIS as a single ERP is the future, and delaying its implementation now ultimately won't change the outcome.

### **Human Resources**

The Canadian government is constantly managing departments in states of growth and contraction, depending on the yearly political objectives of the party in power. These fluctuations have direct impact on the HR management of DND and consequently, the support provided to the CAF. It is common practice in the public sector for government cost saving measures to involve sweeping, drastic cuts, implemented without a long-term strategy. This lack of strategic consideration when implementing change undermines the effectiveness of departments and programs in the interest of achieving short-term objectives. In the two aforementioned examples, the introduction of new ERPs for the DND/CAF supply chain was incorporated as part of wider government initiatives to reduce costs and increase efficiencies. In 1993, MIMS was introduced as part of the "Government Restructuring" project, and in 2010, DRMIS was introduced in conjunction with the government's Deficit Reduction Action Plan (DRAP). Both Government

Restructuring and DRAP resulted in significant HR cuts to DND which consequently undermined the roll out of new ERPs and are classic examples of the challenges facing the public sector operations in achieving private sector efficiencies.

In 1993, the Chretien government built on an existing reform project and initiated an aggressive, multi-phased government restructuring project with a focus on the reduction of costs, increased effectiveness and enhanced service to the Canadian public.<sup>19</sup> The well-documented fall-out of this Government Restructuring project triggered the “Quiet Crisis” from 1995-1999 and saw the public service cut over 39,000 jobs, an overall workforce reduction of 17.4%.<sup>20</sup> This significantly affected the integration of the MIMS ERP system of record for DND/CAF supply chain management by decreasing the number of personnel within DND to effectively manage the implementation of such a complex project.

In 2010, the Harper government announced the DRAP program in an effort to achieve \$4 billion in savings by the end of 2015 through blanket cuts between 5-10% across all 67 government departments.<sup>21</sup> Following increased government spending during the Afghanistan mission and stimulus projects following the 2008 global economic recession, there was a desire to re-balance the budget in short order. The goal of DRAP was lofty, and some have argued unrealistic. It has created significant stress within DND, as 10% of the civilian workforce has been stripped away as part of DRAP, despite an increase in complex, high-profile procurement

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<sup>19</sup> Glen Shortliffe, *Second Annual Report to the Prime Minister on the Public Service of Canada* (Ottawa: Supply and Services,[1993]), 12.

<sup>20</sup> David Johnson and David Johnson, *Thinking Government: Public Administration and Politics in Canada*, 3rd ed. (Toronto: University of Toronto Press, 2011), 528., 346.

<sup>21</sup> Government of Canada, "Deficit Reduction Action Plan," Office of the Information Commissioner of Canada, [http://www.oic-ci.gc.ca/eng/abu-ans\\_cor-inf-inf-cor\\_drap-pard.aspx](http://www.oic-ci.gc.ca/eng/abu-ans_cor-inf-inf-cor_drap-pard.aspx) (accessed May 10, 2015).

and greater reporting on materiel management.<sup>22</sup> These HR cuts to DND have had substantial impact on the implementation of DRMIS and the CAF's ability to effectively and efficiently manage national warehouses.

As waves of cuts hit DND as part of DRAP, the DRMIS project unfortunately was not spared. Director of DRMIS was cut to a skeleton staff during the crucial roll out of the capability across the CAF. One of the most significant impacts of this cut was the elimination of help desks and in-service support to the project. As a result, new users of DRMIS from the tactical to strategic level within the CAF must resort to sending trouble tickets to what remains of the project staff. This "bottom-up" approach driven by trouble tickets has created tremendous friction and frustration amongst DRMIS project staff and users alike. Ironically, the cuts to staff and the concurrent implementation of a new ERP have once more achieved the opposite effect within the realm of strategic supply chain efficiencies. DRMIS is still in the roll out phase with several glaring capability gaps. Consequently, DND has needed to contract KPMG services to provide advice and recommendations on how to maximize DRMIS capabilities for warehousing and distribution functions.<sup>23</sup>

One of the primary issues identified during the Chief Review Services (CRS) audit of DND warehouse management was that the disposal of surplus inventory was not being done in a systematic manner. Additionally, they cited "little knowledge by the stakeholders of the department guidance on warehouse management and monitoring in this area is weak."<sup>24</sup> These

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<sup>22</sup> Murray Brewster, "Brain Drain, Staff Cuts, Red Tape Blamed for Dysfunctional DND Purchasing," *The Globe and Mail*, sec. Politics, January 14, 2015, 2015.

<sup>23</sup> *KPMG Contract for Defence Renewal*, Public Law W8484-14P2KP/001/ZQ, (2013): .

<sup>24</sup> Chief Review Services, *Audit of Warehouse Management*, 1, iii.

challenges faced by warehouse managers are also attributable to DND HR cuts under DRAP. The sole authority for the inventory life-cycle of asset-pooled items is inventory managers, which include Equipment Management Teams, Life Cycle Managers and Technical Authorities.<sup>25</sup> While warehouse managers are coming under scrutiny for build-up of dormant or obsolete stock, the logisticians managing the DND warehouses lack the authority to initiate disposal of the surplus materiel. This is representative of the difference between the warehouse managers role as *custodians* of the materiel versus the inventory managers role as *owners* of the materiel. The majority of the inventory managers within DND are civilians and they have been cut significantly. As a result, when short-staffed inventory managers have a limited amount of capacity to manage an abundance of materiel, the CRS audit has determined that they tend to neglect their disposal responsibilities, remaining focused on procurement and provisioning.<sup>26</sup> This example of how public sectors adherence to policy have led to surplus materiel overflowing warehouses across the CAF and made materiel accountability and asset visibility extremely challenging during DRMIS roll out.

This section has outlined some of the challenges facing the national distribution network due to its subjection to public administration. While public organizations can often be the recipient of tremendous financial and HR support, they are also subject to drastic cuts with little consideration given to the long-term effects on strategic direction. The requirement for strict public accountability and adherence to the constraints of numerous policies definitely limit flexibility available to DND and the CAF when attempting to achieve efficiencies common in

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<sup>25</sup> Ibid., iv.

<sup>26</sup> Ibid., 6.

private sector supply chain management. However, it is said that in difficulty lies opportunity; with the appropriate strategic goals and through leveraging key public and private partnerships, the DND/CAF materiel distribution network can be well positioned to be a leader in efficient and effective supply chain management in Canada.

## **OPPORTUNITIES FOR IMPROVEMENT**

The second part of the paper will discuss some of the options available to DND/CAF to increase materiel accountability and efficiencies through the exploration of several industry best practices. Namely, the opportunities available for public-private partnerships (3P) for major projects, collaboration with US military supply chain experts, and lastly, the concept of a formal affiliation with a leading Canadian university in supply chain management with a view to educating DND and CAF logisticians in the latest best practices in complex materiel management. By exploring some of these opportunities, the national distribution network could gain the efficiencies desired by government, and DND/CAF supply chain managers could emerge as some of Canada's foremost logistics experts.

### **Public-Private Partnerships**

Public-private partnerships (P3) are a relatively new concept, only formally being incorporated by the government of Canada in 1995 in association with the Canadian Council for Public-Private Partnerships (CCPPP). P3 is defined as a "long-term performance-based approach to procuring public infrastructure where the private sector assumes a major share of the risks in terms of financing and construction and ensuring effective performance of the infrastructure,



from design and planning, to long-term maintenance.”<sup>27</sup> At this time, the vast majority of the projects operated under the P3 umbrella focus on major infrastructure such as buildings or transportation networks. However, the framework would clearly benefit some of the major change initiatives that are in place for incorporating private sector ERPs to manage the DND/CAF supply chain, as well as ongoing warehouse clean-up programs.

At this time, DND currently uses P3 for some of its major projects, so the relationships with private industry already exist. One such project is the highly complicated and sensitive Enterprise Data Centre Borden Expansion using the common P3 model of “Design-Build-Finance-Maintain-Operate.”<sup>28</sup> Another high-profile P3 is the Communications Security Establishment of Canada (CSEC) Long-Term Accommodation Project using the “Design-Build-Finance-Maintain” model.<sup>29</sup> The key difference between the two projects is that the “operate” portion of the CSEC program would still belong to DND. This P3 model would have been of tremendous value to DND/CAF when considering the implementation plans for DRMIS, through incorporating some Canadian and world leaders in supply chain management to work in concert with DND and CAF logisticians. The ability for DND/CAF supply chain managers to draw on private sector best practices, while at the same maintaining the operations of the national distribution network would have been invaluable during the roll out of DRMIS. This P3 concept would respect the public accountability demands of government through judicial implementation of the complete ERP optimized for public sector use. Furthermore, by retaining control of the

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<sup>27</sup> Government of Canada, "Public-Private Partnerships," PPP Canada, <http://www.p3canada.ca/en/about-p3s/> (accessed May 10, 2015).

<sup>28</sup> The Canadian Council for Public-Private Partnerships, "Canadian PPP Project Database," <http://www.pppcouncil.ca/about-ccppp.html> (accessed 09, May, 2015).

<sup>29</sup> Ibid.

daily operations of the supply chain, the operational effectiveness demanded by the CAF would be respected.

The greatest benefit of a P3 to government operations lies in the definition phase; that is, identifying scope and initial procurement process. Under a P3, the project costs are defined upfront and span the life-cycle of the asset. P3s greatly benefit government with the provision of an honest and objective assessment of total project costs and the associated risks with cutting contingencies. This shifts risk to the private sector and means that the Canadian public is not responsible for cost overruns, delays or any performance issues over the projects life.<sup>30</sup> The P3 model would have avoided the cost overruns experienced during the implementation of DNDs last two ERPs, MIMS and DRMIS.

Following the increased scrutiny of DND/CAF materiel management practices by the SCOPA and CRS audit of warehouse management outlined above, DND has ultimately contracted a large private sector company with expertise in SAP ERP optimization to assist in defining the problems and recommending solutions.<sup>31</sup> This solution is reactive in nature and is most-likely more expensive long-term; establishing the relationship on the front end would seem more logical. A standing relationship with industry leaders in supply chain management would be mutually beneficial to both private and public sectors.

Clearly, there are some areas where traditional military *effectiveness* must be favoured over private sector *efficiency*, such as the stocking of weapons, self-contained weapons systems and ordnance. Should the CAF ever be called upon to carry out combat missions abroad, they

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<sup>30</sup> Government of Canada, *Public-Private Partnerships*.

<sup>31</sup> Department of National Defence, *KPMG Contract for Defence Renewal*

must be ready to rapidly deploy with the weapons and ordnance immediately and cannot rely on just-in-time practices for production and shipment, as an example. However, the P3model would ultimately offer an advantage in areas where DND has come under criticism; namely, materiel accountability and under-estimating initial project costs. In addition to partnering with industry leaders for best practices in efficient supply chain management, there exists an equally attractive opportunity to partner with the world leader in military logistics, the US military.

### **United States Military Collaboration**

The US Army has recently embarked on the largest military logistics transformation ever attempted. The US Army Logistics Modernization Program (LMP) was derived to significantly improve the efficiency and effectiveness of supply chain operations using a collaborative approach between the government, the company responsible for the project Computer Sciences Corporation (CSC) and SAP to take full advantage of supply chain innovations used in the private sector.<sup>32</sup> LMP was successfully implementation throughout the entire US Army between 2003-2010 and manages over \$22 billion in inventory and executes over 4 million transactions a day across 70 Department of Defense (DoD) systems.<sup>33</sup> While DRMIS is a large project by Canadian DND standards, the magnitude pales in comparison to the LMP. Nevertheless, as the closest ally to the US and a perennial coalition partner on international operations, it makes perfect sense for the two nations to share lessons learned and best practices for operating national distribution networks for defence materiel. Moreover, with LMP operating on SAP, the

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<sup>32</sup> Computer Sciences Corporation, "US Army Logistics Modernization Program," Computer Sciences Corporation, [http://www.csc.com/public\\_sector/offerings/76702-u\\_s\\_army\\_logistics\\_modernization\\_program](http://www.csc.com/public_sector/offerings/76702-u_s_army_logistics_modernization_program) (accessed 09 May, 2015).

<sup>33</sup> Ibid.

interoperability and similarities between the US Army LMP and DND/CAF DRMIS programs are sure to be many.

While the US Army LMP was a resounding success, the United States Air Force (USAF) Expeditionary Combat Support System (ECSS) program was a total failure and was officially cancelled in 2014 after \$1 billion spent and little to show for it. An internal review of the transformation program highlighted numerous causes for the failure, notably, “constant management turnover, software customization problems, and resistance from the “user community worried about how the ECSS would affect their jobs.”<sup>34</sup> Clearly, lessons can also be gleaned from the trials and tribulations the USAF endured during their transformation efforts, most of which sound eerily similar to challenges experienced in Canada.

Whereas major private companies such as Wal-Mart and Canadian Tire operate on very specific processes with little external influence to their supply chains, the US military will have the same internal and external pressures, demands for public accountability and similar missions and objectives as DND. If anything, the DND/CAF supply chain should be benchmarking their processes off of the logistical marvels that are taking place within the US DoD. Their logistics transformation efforts over the last decade are world-class and proof that military logistics can in fact be efficient and effective. Key supply chain managers within DND and the CAF should be conducting site visits of their depots, possibly attending DoD supply chain symposiums or conferences in the US and generally maintaining open lines of communication with their US counterparts.

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<sup>34</sup> Sean Reilly, "Air Force Tries again on Logistics Modernization," Defense News, <http://archive.defensenews.com/article/20140120/C4ISRNET14/301200020/> (accessed 10 May, 2015).

While there would no doubt be some bureaucratic obstacles to overcome with respect to cross-border military training and Treasury Board (TB) restrictions on travel, the benefits of such a program for the DND/CAF supply chain would far outweigh the relatively insignificant monetary costs and could yield strategic advantages in the long term.

Lastly, yet another US military organization undergoing a significant logistics transformation is the United States Marine Corps (USMC), albeit a different approach focussed more on optimizing deployability and agility during operations. While the USMC Logistics Modernization (LogMod) program differs in scope from the focus of this paper, there are several innovative initiatives that are worth serious consideration by DND and the CAF. The first is the unique creation of the USMC “quad model” which has reorganized the traditional NATO ten classes of supplies into four groups based on their value to mission accomplishment. Using this innovative model, goods and services that are mission-critical are purchased and managed differently from those that are not, which has cut USMC order-ship time as been cut by up to 50 percent.<sup>35</sup> This is a fascinating concept and worth evaluation to see how it could improve logistics support to deployed CAF operations. The second initiative that will be discussed in the next section is the unique partnership the USMC has with Penn State University and how Canada should consider replicating the initiative.

### **Canadian University Partnership**

Historically, the Marines had relied on massive stockpiles of equipment in close proximity to the battlefield in order to sustain operations. Dubbed the “iron mountain of

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<sup>35</sup> Penn State University, "Beyond the Iron Mountain: Changing the Face of Marine Corps Logistics," PSU Executive Programs, <http://www.smeal.psu.edu/psep/documents/u.s.-marine-corps-logistics-education-program> (accessed 10 May 15, 2015).

materiel” it is the definitive example of the school of thought that military logistics can’t be *efficient* because it needs to be *effective*. However, following considerable asset visibility issues with the “iron mountain” model experienced in the first Gulf War, USMC leadership decided that being effective didn’t necessarily need to come at the cost of efficiency. In 1998, they partnered with Penn State University Smeal College of Business to create the Marine Corps Logistics Education Program (MCLEP) to improve the skills of Marine Corps and DoD logisticians.<sup>36</sup>

The objective of the MCLEP was to study and evaluate proven and emerging commercial and military supply chain management concepts and incorporate them into USMC core competencies. The initial program has grown to deliver two types of courses; a two-week resident course and a one-week non-resident course, with Penn State offering over 20 serials of each, year over year. In total, over 2,500 military and civilian members of DoD have received the MCLEP, creating a robust network of professional logisticians armed with a common understanding of industry and defence best practices for supply chain management.<sup>37</sup>

The Penn State Smeal College of Business was specifically chosen in 1998 due to its Center for Supply Chain Research, Department of Supply Chain and Information Systems, and Executive Programs. There are currently several major Canadian Universities that offer graduate programs in logistics and supply chain management. The York University Schulich School of Business offers a graduate certificate in Supply Chain and Logistics Management and the Wilfred Laurier University School of Business and Economics offers graduate courses in

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<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

Operations and Supply Chain Management.<sup>38 39</sup> Benchmarking off of the MCLEP at Penn State, DND and the CAF could develop a similar program through either York or Wilfrid Laurier Universities, for example, which would deliver training in the latest innovative practices in supply chain management by commercial industry leaders.

Creating a network of DND/CAF executive leadership in supply chain management and private sector counterparts would serve well for future cooperation to either implement new programs or to simply share lessons learned for best practices. The partnerships formed between all parties involved in such an endeavour would deliver considerable strategic effects with potential to increase operational efficiencies and improve materiel accountability.

Informal partnerships between DND and educational institutions already exist, in place under the initiative of individuals with a desire to broaden horizons through shared information. The Northern Alberta Institute of Technology (NAIT) has an ongoing relationship with 7 Canadian Forces Supply Depot (CFSD) whereby NAIT students can tour the depot to provide insight on how to best manage a complex materiel warehouse. Clearly, a formal program is significantly more complicated than this example; however, it is not an unreasonable concept.

## **CONCLUSION**

This paper has shown how public administration clearly presents unique challenges to achieving the efficiencies commonly found in private sector supply chains. The DND supply

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<sup>38</sup> York University, "Masters Certificate in Supply Chain and Logistics Management," Schulich School of Business, [http://seec.schulich.yorku.ca/long\\_program\\_introduction.aspx?p=masters-certificate-in-supply-chain-and-logistics-management&tab=1](http://seec.schulich.yorku.ca/long_program_introduction.aspx?p=masters-certificate-in-supply-chain-and-logistics-management&tab=1) (accessed 11 May, 2015).

<sup>39</sup> Wilfred Laurier University, "Operations and Supply Chain Management," WLU School of Business and Economics, [https://legacy.wlu.ca/page.php?grp\\_id=2030&p=3424](https://legacy.wlu.ca/page.php?grp_id=2030&p=3424) (accessed 11 May, 2015).

chain's subjection to public administration has been shown to be both strength and weakness. While the government has the capacity to direct tremendous financial and human resources (HR) support towards programs in line with their initiatives, the reciprocal is that those resources can just as quickly be withdrawn according to government priorities.

In the first part of the paper, the unique challenges that DND faces as a public entity were explored. Specifically, the demands for public materiel accountability under rigid government processes, the trials of frequent ERP change management, and lastly how HR management ebbs and flows during periods of budget cuts affected the efficacy of warehouse management and materiel disposal.

The second part of the paper demonstrated how opportunities for collaboration through the adoption of several industry best practices could provide DND with strategic positioning amongst leading private and public sector supply chain experts. Namely, the opportunities available for public-private partnerships (3P), benchmarking logistics modernization efforts off of US military experiences and lastly, the concept of a formal affiliation with a leading Canadian university in supply chain management to educate DND and CAF logisticians in complex materiel management were explored.

Through the systematic examination of some of the current issues affecting the complex DND materiel distribution network, it was shown that efficiency and effectiveness are not mutually exclusive when it comes to military logistics. The opportunities available for external collaboration with a view to sharing industry best practices and lessons learned, would ultimately offer a tremendous strategic advantage to DND and CAF logisticians in the immediate and long-term.



## BIBLIOGRAPHY

- Brewster, Murray. "Brain Drain, Staff Cuts, Red Tape Blamed for Dysfunctional DND Purchasing." *The Globe and Mail*, January 14, 2015, 2015, Online, sec. Politics.
- Canadian Tire Corporation Limited. *Annual Information Form*. Toronto: CTC Limited, 2013.
- Chief of Defence Staff. *CDS Guidance to the CAF*, edited by Canada. Dept. of National Defence. Vol. Guidance to CAF. Ottawa: Department of National Defence, 2013.
- Chief Review Services. *Audit of Warehouse Management*. Ottawa: Department of National Defence, 2014.
- Computer Sciences Corporation. "US Army Logistics Modernization Program." Computer Sciences Corporation. Accessed 09 May, 2015.  
[http://www.csc.com/public\\_sector/offerings/76702-u\\_s\\_army\\_logistics\\_modernization\\_program](http://www.csc.com/public_sector/offerings/76702-u_s_army_logistics_modernization_program).
- Davies, Charles. "Canada's Procurement Strategy: An End Or a Beginning?" *Conference of Defence Associations Institute Vimy Paper 20*, (2014): 1.
- Department of National Defence. "About DND and the CAF." . Accessed 5 May, 2015.  
<http://www.forces.gc.ca/en/about-us.page>.
- . "Government Restructuring and Implications for DND." Memorandums, Canadian Armed Forces, Ottawa.
- KPMG Contract for Defence Renewal*, Public Law W8484-14P2KP/001/ZQ, (2013)
- Editorial. "What Canada did - and did Not - Achieve in Afghanistan." *The Globe and Mail*, March 14, 2014, 2014, Online, sec. Editorials.
- Government of Canada. "Deficit Reduction Action Plan." Office of the Information Commissioner of Canada. Accessed May 10, 2015. [http://www.oic-ci.gc.ca/eng/ab-ans\\_cor-inf-inf-cor\\_drap-pard.aspx](http://www.oic-ci.gc.ca/eng/ab-ans_cor-inf-inf-cor_drap-pard.aspx).
- . "Public-Private Partnerships." PPP Canada. Accessed May 10, 2015.  
<http://www.p3canada.ca/en/about-p3s/>.
- Harvard Business Review Press. *HBR's 10 must Reads on Change Management*. HBR's 10 must Reads. Boston, Massachusetts: Harvard Business Review Press, 2011; 2011.
- Hussain, A. Imtiaz, Satya R. Pattanayak, and Anil Hira. *North American Homeland Security: Back to Bilateralism?*. PSI Reports. Westport, Conn.: Praeger Security International, 2008.

- Johnson, David and David Johnson. *Thinking Government: Public Administration and Politics in Canada*. 3rd ed. Toronto: University of Toronto Press, 2011.
- Kotter, John P. *Leading Change*. Boston, Mass.: Harvard Business Review Press, 2012; 1996.
- Lagassé, Philippe. *Accountability for National Defence: Ministerial Responsibility, Military Command and Parliamentary Oversight*. IRPP Study. Vol. 4, March 2010. Montreal, QC: Irpp, 2010.
- Lawson, Tom and Richard Fadden. *Joint CDS/DM Directive - Materiel Accountability*, edited by Department of National Defence. Vol. Directive 2014.
- Penn State University. "Beyond the Iron Mountain: Changing the Face of Marine Corps Logistics." PSU Executive Programs. Accessed 10 May 15, 2015.  
<http://www.smeal.psu.edu/psep/documents/u.s.-marine-corps-logistics-education-program>.
- Raymond Chabot Grant Thornton. *WMS Study for National Depots*. Montreal: Management Consultants, 2011.
- Reilly, Sean. "Air Force Tries again on Logistics Modernization." Defense News. Accessed 10 May, 2015. <http://archive.defensenews.com/article/20140120/C4ISRNET14/301200020/>.
- Shortliffe, Glen. *Second Annual Report to the Prime Minister on the Public Service of Canada*. Ottawa: Supply and Services, 1993.
- Standing Committee on Public Accounts. *41st Parliament, 2nd Session, Public Accounts of Canada 2013*. Ottawa: House of Commons, 2013.
- Stone, Craig, Queen's University . School of Policy Studies, and Breakout Educational Network. *Public Management of Defence in Canada*. Toronto: Breakout Educational Network in association with the School of Policy Studies, Queen's University, 2009.
- The Canadian Council for Public-Private Partnerships. "Canadian PPP Project Database." . Accessed 09, May, 2015. <http://www.pppcouncil.ca/about-ccppp.html>.
- Wilfred Laurier University. "Operations and Supply Chain Management." WLU School of Business and Economics. Accessed 11 May, 2015.  
[https://legacy.wlu.ca/page.php?grp\\_id=2030&p=3424](https://legacy.wlu.ca/page.php?grp_id=2030&p=3424).
- York University. "Masters Certificate in Supply Chain and Logistics Management." Schulich School of Business. Accessed 11 May, 2015.  
[http://seec.schulich.yorku.ca/long\\_program\\_introduction.aspx?p=masters-certificate-in-supply-chain-and-logistics-management&tab=1](http://seec.schulich.yorku.ca/long_program_introduction.aspx?p=masters-certificate-in-supply-chain-and-logistics-management&tab=1).