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Performance Management of the Capital Program: Measuring What Matters

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INTRODUCTION

The Department of National Defence (DND) has a substantial demand for equipment capability renewal and coupled with the reduction in the defence budget an environment has evolved where efficiency is not only a key value it is necessary for the longevity of the Canadian Armed Forces (CAF). According to the DND and the CAF performance report, equipment acquisition and disposal only expended $2.254 billion of the planned $3.030 billion in 2012-2013.[1] The inability to execute the capital procurement program causes the DND to incur increased costs, lose equipment capability, and suffer loss the trust from both the Canadian Government and population. The Canada First Defence Strategy (CFDS) has allocated more than $60 billion for investment in new equipment from 2008 to 2028; this represents the Canadian Government's largest discretionary expenditure.[2] To ensure the effective management of these funds, organizations such as the Office of the Auditor General (OAG) have conducted investigations, and to date, the findings of many of the resulting reports are unfavourable. The OAG stated in the *Spring 2009 Financial Management and Control report* that DND's Program Management Board (PMB) mainly addressed project programmatic issues such as approvals, vice the strategic management of resources to ensure desired outcomes were being met.[3] In addition, the report states "…the lack of accurate and timely information for decision makers contributed to the lapsing of more

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[1] Department of National Defence and the Canadian Armed Forces, *Departmental Performance Report 2012-13, Part III – Estimates* (Ottawa: Department of National Defence, 2013), 34.

[2] Government Of Canada, "Canada First Defence Strategy," last modified 27 July 2013, http://www.forces.gc.ca/en/about/canada-first-defence-strategy.page.

[3] Government of Canada, "2009 Spring Report of the Auditor General of Canada," accessed 22 April 2014, http://www.oag-bvg.gc.ca/internet/English/parl_oag_200905_05_e_32518.html.

than $300 million in funding."[4] In response to the issues identified by the OAG, the Vice Chief of the Defence Staff (VCDS) initiated the Project Approval Process Redesign (PAPR) project in April of 2012.[5] The mandate of the project was to improve DNDs management of the capital procurement program, reduce the length of time it takes for a project to go from conception to closeout and increase the throughput of capital procurement projects.[6] The PAPR project's final report, recommended the department develop metrics and measures to enable better management of the process.[7]

This paper will examine the performance measures used in the capital procurement program and argue that there are measures that would allow for better management of the program than are currently being used. This paper first examines theories behind performance management and the use of performance measures, and then reviews government policy documents to determine what measures the capital program currently uses. Finally, the paper demonstrates that there are performance measures more suitable for the management of the capital program. In order to prove this, the paper conducts a comparison of the two existing and four proposed performance measures using a framework for selecting effective performance measures. While many frameworks exist, most are specific to individual performance management models, yet the framework proposed by Paul Niven in *Balanced Scorecard Step-By-Step: Maximizing*

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[4] *Ibid.*

[5] Department of National Defence, *Project Approval Process Redesign Project*, (Ottawa: Department of National Defence, 2013), 6.

[6] *Ibid.*, 7.

[7] *Ibid.*, 80.

Performance and Maintaining Results, is generic enough to allow for comparison of measures within DND, and therefore it is a suitable tool for use in this paper.[8]

PERFORMANCE MANAGEMENT THEORY

In order to set a baseline for this paper, it is important to have a common understanding of the terms, definitions and principles of performance management. The term performance management is widely used in both the public and private sectors, but what exactly does it mean? Andre de Waal et al. uses the following definition for performance management in "The impact of performance management on the results of non-profit organizations:"

> …the process where steering of the organization takes place through the systematic definition of mission, strategy and objectives of the organization, making these measurable through critical success factors and key performance indicators, in order to be able to take corrective action to keep the organization on track.[9]

This definition contains several key components to consider when examining performance management. First, it states that performance management is a process, this indicates that it is a formal procedure, which can be changed or improved upon. Performance management seeks to align an organization's mission, strategy and objectives to ensure the achievement of desired outcomes. In DND the Government sets

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[8] Paul R Nevin, *Balanced Scorecard Step-By-Step: Maximizing Performance and Maintaining Results* (New York: John Wiley & Sons, Inc, 2002), 146.

[9] Patricia Geradts, Robert Goedegebuure and Andre De Waal, "The impact of performance management on the results of a non-profit organization," *International Journal of Productivity and Performance Management* 60, no. 8 (2011): 779. http://search.proquest.com/docview/902236011/E2F12F444CAD4049PQ/11?accountid=9867.

the desired outcomes and the main communication between DND and the Government occurs through the Reports on Plans and Priorities (RPP) and the Departmental Performance Reports (DPR).[10] Measurement is another key factor in performance management, in fact Aurel Brudan argues in "Rediscovering performance management: systems, learning and integration," that you cannot have performance management without performance measurement.[11] Measurement and analysis are tools that enable good managerial decisions, leading to improved results.[12] The selection of critical success factors and performance measures is an essential element of performance management. David Parmenter states in *Key Performance Indicators: Developing, Implementing and Using Winning KPIs,* that "…KPIs represent a set of measures focusing on those aspects of organizational performance that are the most critical for the current and future success of an organization."[13] Therefore, in order to conduct performance management an organization must be able to select performance measures, which provide insight into not only current issues, but also are predictive of future success. Finally, the definition used by Andre de Waal et al. states that the organization must be able to use the information it gathers to make changes, in order to ensure the mission and or strategy are realized. In sum, the concept of performance management includes the establishment of strategy, the setting of performance indicators, the

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[10] Department of National Defence, "Vice Chief of the Defence Staff: Government Reporting," last modified 12 March 2014, http://vcds.mil.ca/sites/intranet-eng.aspz?page=4735.

[11] Aurel Brudan, "Rediscovering performance management: systems, learning and Integration," *Measuring Business Excellence* 14 no. 1 (2010): 111. http://search.proquest.com/docview/208747948/E13D4A16676740A6PQ/1?accountid=9867.

[12] *Ibid*., 111.

[13] David Parmenter, *Key Performance Indicators: Developing Implementing, and Using Winning KPIs.* (Hoboken: John Wiley & Sons, Inc, 2007), 1.

measurement of performance against those set indicators and finally corrective action based on the feedback provided from the process.

Performance management can occur at the strategic, operational and individual level.[14] It will be shown later in this paper that performance management (including measurement) is being conducted at the strategic level within DND, however, the operational level of the capital procurement program is not using performance management. Brudan states "…Performance Management at the operational level is linked to operational management, as it focuses the achievement of departmental or group objectives."[15] The management of the capital procurement program lies within the operational level where individual projects are assembled and administered as a program. Within DND, the Programme Management Board (PMB) manages the resources and throughput of capital procurement projects. Niven notes that an organization must identify the process, which is vital to the success of business and assign five to ten measures.[16] Due to the scope limitations of this paper, only six measures are analyzed in order to demonstrate their effectiveness in managing the capital procurement program. According to Brudan, strategic performance management "…deals with the achievement of organizational objectives."[17] Establishment of these strategic level objectives in DND occurs in the *Report on Plans and Priorities.* Here, two measures are used in the management of the capital procurement program; they are discussed in the following section.

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[14] Brudan, "Rediscovering performance management: systems, learning and Integration"…, 112.
[15] *Ibid.*, 113.
[16] Niven, *Balance Scorecard…*, 151.
[17] *Ibid.*, 114.

MANAGEMENT OF THE CAPITAL PROCUREMENT PROGRAM

The overarching document which dictates how DND must manage projects is the Policy on the Management of Projects (POMP), which is produced by the Treasury Board and came into effect December 10, 2009.[18] The policy document was produced with the goal of "…improving the management of projects across the Government of Canada."[19] This policy is effective in providing guidance to the Deputy Head of Department on the management of projects and implicitly refers to the importance of performance management. For example it highlights the importance of engaging with project stakeholders and ensuring "…outputs and outcomes are monitored and reported."[20] These are concepts that are integral in performance measurement. The document also contains a list of expected outcomes, one of which is, "…outcomes are achieved within time and cost constraints."[21] This statement may be responsible for the focus on cost and schedule, as it pertains to the department performance report, which this paper discusses later. While the document clearly articulates Deputy Head responsibilities and the monitoring and reporting requirements, it is at a high enough level to allow vastly different government departments to operate independently. As each department is required to establish their own internal processes, the POMP does not actually produce specific direction on performance measurement. The document is successful in providing the necessary links for a department such as DND to establish a robust Performance Management framework. As stated by Treasury Board, the Policy is designed to

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[18] Government of Canada, "Policy on the Management of Projects," accessed 27 March 2014, http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=18229&section=text.

[19] *Ibid.*

[20] *Ibid.*

[21] *Ibid.*

"…Establishes clear responsibilities for deputy heads and supports their role as accounting officer to manage their projects in an integrated, enterprise-wide manner, rather than on a project-by-project basis."[22] Using measures, such as those proposed by this paper, would aid in this goal.

The second policy document, which effects the management of DND's capital procurement projects, is the Management, Resources and Results Structure (MRRS). Although following this policy ensures that DND conducts some form of performance measurement at the strategic level, it falls short of enabling effective measurement at the operational level (the level in which to process of capital procurement project execution occurs within DND.) The MRRS policy establishes the requirement for a Program Alignment Architecture (PAA) which is "…an inventory of all the programs undertaken by a department."[23] The policy allows the government to manage on results by ensuring government departments clearly articulate the performance of their programs.[24] In doing so, departments are to use both financial and non-financial performance measures.[25] DND responds to this policy in several ways; first, it establishes its own PAA. Capital acquisition falls under program 1.3, Equipment Acquisition and Disposal. Using this architecture, DND reports on four Performance Indicators, once per year in the Department's Performance Report. The performance indicators are *percentage of projects on schedule* (divided into two categories: CFDS projects and non-CFDS projects) and *percentage of overall planned dollars that are expended* (again divided into CFDS and

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[22] *Ibid.*

[23] Government of Canada, "Policy on Management, Resources and Results Structures," last modified 1 April 2012, http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=18218&section=text.

[24] *Ibid.*

[25] *Ibid.*

non-CFDS projects).[26] While these measures may be sufficient to meet the requirements for the report, this paper demonstrates that they are not adequate for managing the capital procurement program.

PMB oversees the Defence Services Programme (DSP) within DND. The capital procurement program is a subset of the DSP and therefore one of the key roles PMB has is the "…periodic review to track fiscal performance and project progress to meet strategic goals and objectives."[27] Although the board receives functional program briefs from Directorates as well as individual project briefs and quarterly reports on schedules and spending of capital projects, it does not have timely information for adjusting resources required in the administration of the capital procurement program.[28] The measurement of cost and schedule are what Parmenter refers to as "…outcome measure."[29] He goes on to state that they should be replaced by performance indicators that can be used to make timely changes to an organization.[30] As stated earlier in this paper, the OAG believes the DSP lacks the information required to make timely decisions.[31] Therefore, the effective management of the capital procurement program requires additional tools.

Performance measurement of the capital program could be a way to rectify this deficiency. This paper recommends the use of *percentage of wait times, percentage of re-submissions to Treasury Board, percentage of projects that have reached an initial*

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[26] Department of National Defence, *Departmental Performance Report 2012-13…, 34*.

[27] Department of National Defence, "Vice Chief of the Defence Staff: Programme Management Board," last modified 22 April 2014, http://vcds.mil.ca/sites/intranet-eng.aspz?page=9719.

[28] *Ibid.*

[29] Parmenter, *Key Performance Indicators…,* 7.

[30] *Ibid.*, 7.

[31] Government of Canada, "2009 Spring Report of the Auditor General of Canada," accessed 22 April 2014, http://www.oag-bvg.gc.ca/internet/English/parl_oag_200905_05_e_32518.html.

operating capability (IOC) and the *average cycle time of projects* as performance measures to aid in the performance management of the capital procurement program. The effectiveness of these measures, along with the current measures of *percentage of projects on schedule* and *percentage of overall planned dollars that are expended* is examined next.

PERFORMANCE MEASUREMENT FRAMEWORK

In order to examine the recommended performance measures, this paper uses Niven's criteria for selecting performance measures. This framework contains seven criteria, which aid in selecting effective measures.[32] The first criterion is that the *measure is linked to strategy*, as it pertains to the organization. Niven argues that a failure to do this may "…lead to confusion and lack of clarity as employees devote precious resources to the pursuit of measures that do not influence the firm's overall goals."[33] The strategic outcome articulated in the DND's Performance Report for capital procurement projects is "…resources are delivered to meet Government defence expectations."[34] Thus, measures must relate back to this strategy. The next criterion is that measures should be *quantitative* to remove subjectivity from the measure.[35] All the measures evaluated in this paper are quantitative and therefore the evaluation on this criterion is not required. *Accessibility* of data is the next criterion to evaluate measures. Here, Niven argues that one must consider the resources it requires to obtain a measurement, as they may

[32] Niven, *Balanced Scorecard…*,146.
[33] *Ibid.*,146.
[34] Department of National Defence, *Departmental Performance Report 2012-13…, 24*.
[35] Niven, *Balanced Scorecard*…,147.

outweigh the good that the measure provides.[36] Thus, the measure suggested should not be labour intensive to obtain or cost a significant amount of money to track. A good measure is *easily understood*, so that the operational significance can be explained without problem and the polarity (desired increased/decreased movement) of the measure is intuitive.[37] Measures must also be *counterbalanced;* the improvement of one measure will not negatively affect another.[38] A good measure is *relevant* in that it should result in an action.[39] If one is not capable of taking corrective action based on the measure, then the measure is not effective as a performance management tool. Finally, the measure should have a common definition as obscure terms can lead to confusion by decision makers. This paper assumes that the decision makers know the terms used and therefore the assessment of this criterion is not included in the analysis.

EVALUATION OF PERFORMANCE MEASURES

Current Performance Measures - Percentage of Projects on Schedule

The first performance measure examined is *percentage of projects on schedule*. Although this measure meets most of the requirements of an effective measure, it does not enable management of the capital procurement program. The 2012-2013 Report on Plans and Priorities contains the strategic outcome for the acquisition program of "…Resources are delivered to meet government Defence Expectation."[40] The concept of measuring schedule to support capability delivery aligns with this strategy. The DND's

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[36] *Ibid.,* 148.
[37] *Ibid.*
[38] *Ibid.*
[39] *Ibid.*
[40] Department of National Defence, *Departmental Performance Report 2012-13…, 24*.

Capability Investment Database (CID) contains project schedules, making this measure accessible. As previously stated, an effective measure is easily understood. A rise in this measure suggests an increase in capability, as projects deliver on time, therefore the implications of this measure are easily understood. The criterion of counterbalance may have a negative effect. By using schedule as a measure, and *percentage of overall planned dollars expended*, which is discussed next, only two components of the "golden" triangle are covered.[41] The golden triangle is commonly used in projects to describe the interaction between cost, schedule and quality. As one or more sides of the triangle is changed, it invariably must have an effect on one or more of other sides of the triangle. In the current approach taken by the department, the third leg, quality, is unmonitored resulting in an unbalance measure. In cases such as these, Niven recommends a counter-balancing measure to ensure that performance is not adversely affected.[42] Given the lack of counterbalance in that quality is not measured, this performance measure does not fully meet this criterion for an effective measure. This performance measure is weak in its relevance in respect to management of the capital procurement program as it provides no fidelity as to why projects are behind schedule. In addition, this measure does not indicate whether the cause of the schedule delays are internal or external to DND, meaning that some aspects of this measure are completely out of the control of PMB and therefore it does not aid in improving performance.

Having established via Niven's criteria that *percentage of projects on schedule* is not an effective measure for managing the capital procurement program, focus will now

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[41] David Bryde and Gillina Wright, "Project Management Priorities and the Link with Performance Management systems," *Project Management Journal* 38, no. 4 (December 2007): 5, http://search.proquest.com/docview/218747605/413A7FCA7EE04210PQ/1?accountid=9867.

[42] Niven, *Balance Scorecard..*, 148.

shift to what literature states in reference to this measure. In "The Intersection of Strategic Planning and Performance Measurement: Where Vision Meets Action," Monica Croskey notes that companies who want to focus on project budget and times should include "…phased milestone dates."[43] This more micro view would allow PMB to identify areas of concern with respect to meeting a project schedule, and enable them to take timely action. This measure is therefore not effective in managing the capital procurement program since it does not aid in identifying the cause nor accurately predict future failure with respect to schedules. In addition, Parmenter argues that projects behind schedule should be reported to senior management on a weekly basis.[44] This performance measure however is only reported on an annual basis and therefore does not provide PMB an opportunity to address the issues which may be causing the delay in a timely fashion. While this measure does meet many of the criteria required by an effective measure, other measures are more effective in the performance management of the capital procurement program.

Current Performance Measures - Percentage of Overall Planned Dollars Expended

The second measure that is contained in the 2012-2013 Department Performance Report is the *percentage of overall planned dollars that are expended.* This measure also meets most of the criteria required to be a successful measurement, however it too is a poor measure for the performance management of the capital procurement program. This measure is not strongly linked to strategy. As previously stated, the strategy is

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[43] Monica Croskey, "The Intersection of Strategic Planning and Performance Measurement: Where Vision Meets Action," *Government Finance review* 29, no. 6 (December 2013): 55, http://search.proquest.com/docview/1476269150?accountid=9867.

[44] Parmenter, *Key Performance Indicators…*, 9.

"…Resources are delivered to meet government Defence Expectation."[45] While the delivery of resources requires funds be expended, the ability to spend planned dollars does not necessarily equate to resource delivery. This measure is accessible, both through the CID and through the Defence Resource Management Information System (DRMIS). In regards to the ability to understand this measure, it is very simplistic. Either the capital procurement program is meeting its budget targets or not. The more appropriate question is what does that mean? This measure provides no insight as to the reason or consequence of not meeting the budget targets. As was the case for the measure *percentage of projects on schedule*, the measure *percentage of overall planned dollars that are expended* does not meet the requirements of the counterbalanced criterion. The focus on budget and schedule while ignoring quality can have negative effects. Susan Leanri notes in "Measures that matter: how to fine-tune your performance measures," that ignoring this balance can leave an organization startled by their performance results.[46] If budget and schedule remain fixed then quality is the only variable remaining for adjustment. Finally, this measure is of little relevance, in regards to the performance management of the capital procurement program. For a measure to be relevant Niven states "… a good test is whether or not measure results are actionable."[47] Since this measure is presenting historical data it is a lagging indicator, therefore action can only be taken to improve next year's results and in year management of the process does not occur.

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[45] Government of Canada, *2012-13 Departmental Performance Report...*, 24.

[46] Susan Leandri, "Measures that matter: How to fine-tune your performance measures," *The Journal for Quality and Participation* 24, no. 1 (Spring 2001): 39, http://search.proquest.com/docview/219133672/9B97A2A72BC04CB5PQ/2?accountid=9867.

[47] Niven, *Balance Scorecard..*, 148.

Overall, the measure *percentage of overall planned dollars that are expended* offers no insight on the possible causes of an increase or decrease in performance, but merely reports on the ability to meet budget targets. Parmenter argues that budget processes are "…often seen as a hindrance to management rather than being beneficial."[48] In *Managing by Measure,* Mark T. Czarnecki notes that a common problem with measures is that they "…simply record the amount of resources expended."[49] This is clearly the case with this measure which does not indicate the effects of the expenditure of the funds, but merely that they were expended. While this measure met some of the criteria required for a good measure, overall its ability to effect the in year management of the capital program is limited.

The measures of *percentage of projects on schedule*, and *percentage of overall planned dollars that are expended* are both outcome measures. Leandri states that outcome measures "…reflect the company's key objectives and are used to determine whether the company has reached them."[50] Therefore, while the use of outcome measures is completely appropriate in the Department Performance Report, monitoring the performance of the capital procurement program requires different metrics in order to achieve set goals. The PMB must have access to accurate and timely measures so that adjustments to resources are possible during the fiscal year, enabling the department to achieve set goals. An examination of proposed measures follows.

Proposed Performance Measure – Percentage of Wait Times

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[48] Parmenter, *Key Performance Indicators…*, 11.

[49] Mark Czarnecki, *Managing by Measuring: How to Improve Your Organization's Performance Through Effective Benchmarking* (New York: American Management Association, 1999), 51.

[50] Leandri, "Measures that matter"…, 39.

The first proposed performance measure is *percentage of wait times*. Wait times are described by the PAPR project as "…the amount of time the client has to wait for their service or product."[51] This equates to the time when a project is waiting for an outside organization to complete a step so that they can continue to the next stage of the project. An example of this is time spent waiting for Statement of Requirement approvals from Chief of Force Development (CFD). The amount of wait time in a project has a direct impact on the ability to maintain schedule. This measure is comparable to *percentage of projects on schedule* in relation to strategy, as it too addresses the higher strategy of delivering resources. However; *percentage of wait times* is not as accessible as *percentage of projects on schedule* and *percentage of overall planned dollars that are expended* since it is not currently tracked by the department. This measure is commonly understood and intuitive in that an increase in wait time will clearly lead to an increase risk of schedule slippage. Focusing on improving this measure can lead to a reduction in quality, therefore it lacks in the criterion of counterbalance. Finally, the measure is highly relevant. As previously stated it contributes directly to the success of the schedule, which in turn reflects strategy. In *Key Performance Indicators*, Parmenter recants a story of an airline using delayed flights as performance measure.[52] Focusing on this one measure allowed the company to affect several different outcomes including cost and customer satisfaction.[53] A similar focus on wait times within DND could have a positive effect on not only schedule but also cost, as delays diminish and throughput increases. Wait times, reported to PMB on a bi-weekly basis would allow the identification of bottlenecks in the

[51] Department of National Defence, *Project Approval Process*…, 38.
[52] Parmenter, *Key performance indicators.*…, 4.
[53] *Ibid.*, 4.

process, which they could rectify in a timely manner. Measuring *percentage of wait times* may require additional resources, and it could be argued that this measure would not be easily adopted. Janine Douglas et al. notes in "The Performance Management Continuum in Municipal Government Organizations," that a key concern with respect to performance management is requiring too much new data collection.[54] Further examination is required to determine if overcoming the obstacles to the collection of data for measuring *percentage of wait times* is worth the effort in comparison to the value it would provide. Even though this measure does not meet all of Niven's requirements for a good measure, it shows clear benefits in the in year management of the capital procurement program over the existing measures.

Proposed Performance Measure – Percentage of Re-submissions to Treasury Board

Next is an examination of the proposed measure, *percentage of re-submissions to Treasury Board*. In order for a project to make a submission to Treasury Board they must use DNDs corporate submission process. Typical, a project will need to use this process twice, however, a project may be required to re-engage with the Treasury Board for several reasons. The most common reasons a project may need to re-submit includes a change in scope, cost or schedule. Measuring *percentage of re-submissions to Treasury Board* links to strategy as projects potentially face a delay in their schedule if they need to re-enter the corporate submission process. An estimation of the corporate submission process by the PAPR project found that it took up to 187 days to complete and therefore

[54] Douglas, Janine and, Thomas Plant, "The Performance Management Continuum in Municipal Government Organizations." *Performance Improvement* 45, no. 1 (January 2006): 43, http://search.proquest.com/docview/237236932/5F3AB5F10FA5435BPQ/1?accountid=9867.

it has the potential to add a considerable amount of time to the schedule.[55] The information required to track this measure is not contained in the CID, however the burden for gathering this information is not great. As the requirement for the corporate submission process requires resources in the form of time and personnel, one can understand the applicability of increase or decrease of this measure. Since this measure speaks to the quality of the work produced it also acts as a counterbalance to wait time. If a drop in wait time corresponds to an increase in re-submissions, then this would alert PMB to a problem with the capital procurement program. Finally, it could be argued that measuring *percentage of re-submissions to Treasury Board*, like the current measures that are employed, is not very relevant in that results from this measure are not actionable. However, quality measures such as this one, lends itself to a timely report. Therefore, if a nonfinancial measure such as this one indicates poor performance, it is possible to take action before adverse financial consequences can occur.[56] As for the use of this measure in performance management, Leandri argues that companies "…need to choose performance measures that reflect cost, quality and time concerns." The measures of *percentage of projects on schedule*, and *percentage of overall planned dollars that are expended* are time and cost based, thus adding a quality measure aids in improving the performance management of the capital procurement program. While this measurement did not meet all the criteria of an effective measure, the benefit of having a quality-based measure in conjunction with the other proposed measures, makes this a better option than the measures that are currently used.

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[55] Department of National Defence, *Project Approval Process*…, 36.
[56] Czarnecki, *Managing by Measuring.*…, 66.

Proposed Performance Measure – Percentage of Project that have reached IOC

The third proposed measure is *percentage of projects that have reached an initial operating capability (IOC).* Although IOC is defined differently for each project, it is generally the time in which a new capability is considered operationally deployable. Therefore, it directly relates to the strategy contained in the Departmental Performance Report. This information is easily accessible on the CID and therefore it does not constitute a new collection requirement. One is able to understand this measure, as an increase in percentage represents an increase in capability delivered to the department. Measuring *percentage of projects that have reached an initial operating capability* is also counterbalanced as it does not adversely affect the process. Finally, this measure is relevant as it speaks to the delivery of capability, which is the ultimate goal of the capital procurement program. Measuring the number of projects in IOC gives indications of capability entering service and provides information on the number of projects in each various stage. If the majority of projects in the process have reached IOC then perhaps resources need realignment to support a new initiative. Douglas et al. argues that process-oriented measures are needed to address problems in a timely manner.[57] Measuring *percentage of projects that have reached an initial operating capability* focuses on process vice financial data. In "The impact of muti-criteria performance measurement on business performance improvement," Fentahun Kasi et al. found that companies with measures that focused on process statistics had a greater impact on financial performance

[57] Douglas, "The Performance Management Continuum in Municipal Government…", 45.

than those who did not.[58] Therefore, as a performance measure for managing the capital procurement program, this measure could lead to improvements not only in the timely delivery of capability but also a reduction in schedule and ultimately cost. Overall as a performance measure for the capital program, *percentage of projects that have reached an initial operating capability* is more effective than *percentage of projects on schedule*, and *percentage of overall planned dollars that are expended.*

Proposed Performance Measure – Average Cycle Time of Projects

The last proposed measure is *average cycle time of projects*. Cycle time is defined by the PAPR project as "…total length of time it takes for a request to go through the entire process from beginning to end."[59] Essentially it is the time from when a project makes it first request to proceed as a capital procurement project, until it officially closes. Measuring *average cycle time of projects* links to the strategy of delivering resources as a project schedule plays a key role in this measure. The information for *average cycle time of projects* is available on the CID therefore it is accessible. This measure is also intuitive, as a decrease in cycle time is attributable to an increase in the proficiency of the process. In fact, one of the goals of the PAPR project was to decrease cycle time by 50%.[60] A*verage cycle time of projects* may not be counterbalanced, as an organization seeks to improve this measure sacrifices in quality of product are possible. Finally, this measure is highly relevant as it depicts the entire project lifecycle from cradle to grave.

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[58] Alemu M. Bealy and Kasie M. Fentahun, "The impact of multi-criteria performance measurement on business performance improvement," *Journal of Industrial Engineering and management* 6, no 2 (2013): 611, http://search.proquest.com/docview/1375969610/6D5CEAFA7A464B83PQ/1?accountid=9867.

[59] Department of National Defence, *Project Approval Process*…, 36.

[60] Department of National Defence, *Project Approval Process*…, 7.

Literature refers to this type of measure as a lagging indicator as it measures the total time of the process.[61] Although being a lagging indicator makes it ineffective at making immediate adjustments to a process, it can provide a meaningful goal for the organization. Brindusa Popa states in "The Necessity Of Using Performance Indicators" that "…organizations need to know whether they are on the right track or not, whether the goals and objectives are being achieved."[62] This proposed measure, when used with a benchmark, will allow the organization to determine if their goals of reduced cycle time are indeed being met. Therefore, measuring a*verage cycle time of projects* is more effective in the performance management of the capital program than *percentage of projects on schedule*, and *percentage of overall planned dollars that are expended.*

CONCLUSION

The management of the capital procurement program within DND is a difficult and complex issue. The amount of taxpayer dollars, which it consumes, means that organizations such as the Office of the Auditor General will continue to take interest in the efficient use of these funds. The department continues to seek efficiencies in the capital procurement program process by instituting reforms such as those recommended by the PAPR project. It also monitors and reports the performance of the capital procurement program through mechanisms such as the Departmental Performance Report. However, as identified by the PAPR project, more can be done, such as the use of additional performance measures.

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[61] Leandri, "Measures that matter"…, 39.

[62] Brindusa M. Popa, "The necessity of using performance indicators," Journal of Defense Resources management 1, no. 2 (2011): 127, http://search.proquest.com/docview/1348604179/fulltextPDF/28C33627557F4768PQ/9?accountid=9867

This paper examined the theories and uses of performance management, demonstrating that they can be used both at the strategic and operational levels of an organization. Next, it examined the Government of Canada and DND internal policies demonstrating that not only are performance management practices supported within the department, they are required, with the direct oversight of the performance of the capital procurement program being carried out by PMB. Finally, the two existing performance measures for the capital program, *percentage of projects on schedule*, and *percentage of overall planned dollars that are expended*, which appear in the 2012-2013 Departmental Performance Report were compared to four new measures; *percentage of wait times, percentage of re-submissions to Treasury Board, percentage of projects that have reached an initial operating capability*, and a*verage cycle time of projects*. This analysis demonstrated that the existing measures are outcome measures, suited for high level reporting, while analysis of the four proposed measures demonstrated that they were more process focused and therefore could be used as an in year management tool to make changes to the capital program, enabling more effective management.

While this paper was successful in proposing new measures, much more work is required to implement a performance management framework. Targets for measures need establishment and the number and type of measures required for managing the process of the capital procurement program need to be determined. Another challenge that DND faces, is the broad spectrum of capital procurement projects, it manages. Presently there is little difference in the process of a $5 million project and a $1 billion project. In addition, this paper did not differentiate between infrastructure, equipment and weapon

projects. Further work is required to determine if different performance measures are applicable to these disparate projects.

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