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Chief Review Services / Chef - Service d'examen

CRS / CS Ex

Review of Management of Non-Classified Information Technology Hardware

September 2006

7050-22 (CRS)



Canada

CAVEAT

The review conclusions **do not have the weight of an audit** and must not be regarded as such. While adequate for developing recommendations for consideration by management, the assessments provided and conclusions rendered are not based on the rigorous inquiry or evidence required of an audit.

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LIST OF ACRONYMS

ADM(IM)	Assistant Deputy Minister (Information Management)
ADM(Mat)	Assistant Deputy Minister (Materiel)
CAS	Chief of the Air Staff
CDS	Chief of the Defence Staff
CFSS	Canadian Forces Supply System
CLS	Chief of the Land Staff
CMS	Chief of the Maritime Staff
CRS	Chief Review Services
CSE	Canadian Security Establishment
DG Fin Ops	Director General Financial Operations
DGLS	Director General Land Staff
ECS	Environmental Chief of Staff
FAA	*Financial Administration Act*
FMAS	Financial Managerial Accounting System
IM/IT	Information Management/Information Technology
IMSR	Information Management Strategic Review
IMST	IM Services Transformation
ITAMS	IT Asset Management System
ITSDA	IT Service Delivery Assessment
ITSM	Information Technology Service Management
NCR	National Capital Region
PMO	Project Management Office
RVD	Request for volume discount
VCDS	Vice Chief of the Defence Staff

RESULTS IN BRIEF

Reliance on information technology (IT) hardware and software in offices has increased the amount of resources dedicated to administrating information management (IM)/IT within the Department of National Defence (DND). Accordingly, the management control framework of IM/IT throughout the Department is presently one of the main areas of review for Chief Review Services (CRS). This review focused on the management of non-classified workstation hardware (software acquisition and maintenance was reported on in 2005).

The following factors impede the management of non-classified IM/IT workstation hardware:

- Across DND there are multiple stand-alone databases for tracking IM/IT hardware inventory, costs, contracts and maintenance services;
- Funding for workstation hardware is usually not allocated until the third quarter;
- The majority of non-classified IM/IT workstation hardware expenditures are not easily traceable to the corresponding projects, end user or original funding plans; and
- New approaches to managing non-classified IM/IT workstation hardware are being considered, yet reliable baseline costs are not available to substantiate the final decision.

Overall Assessment

Opportunities exist to improve the quality of information on non-classified workstation hardware and to increase the return on investment.

Plans for the future management of IM/IT could not be validated as they are currently undergoing major changes. However, the final decision must entail:

- Reliable baseline costs;
- Verifiable target savings;
- Appropriate risk assessment; and
- Strong implementation plans.

Observations and Recommendations

Information for Decision-Making. Unsuccessful past attempts to implement a DND-wide database for non-classified IM/IT workstation hardware has resulted in multiple, independent databases whose information cannot be amalgamated. Without a department-wide database, DND will continue to incur avoidable costs such as repair costs on pieces under warranty, contract for services to take inventory, and redundant training costs. There is also duplication of data entry into parallel databases: the independent databases and a department-wide supply database.

It is recommended that the Assistant Deputy Minister (Information Management) (ADM(IM)) assign priority to having an effective department-wide IT Asset Management System (ITAMS) successfully implemented by FY 2007/08, and assist local IT officers to prepare for implementation of this system by defining both the data to be captured and who must have access to this information (e.g., warranty details easily accessible to the help desk). In addition, the use of parallel databases should be discouraged.

Procurement and Financial Control Framework. All sites have their own approach to replenishing non-classified hardware, and at any time of the year are able to identify which equipment to replenish. However, as most funding is not allocated until year-end, the vast majority of this hardware had to be purchased all at once in volumes too large to be efficiently managed, given the available resources. Bulk purchasing brings the benefits of initial cost savings (volume discounts), but before amalgamating procurement to an even larger scale, other relevant factors should be taken into account to estimate real net savings.

There are recurring weaknesses across DND offices in maintaining adequate supporting documentation for local procurement of workstation hardware. This puts to question their certification of Section 34 of the *Financial Administration Act* (FAA). The DND policy states that all supporting documentation should be maintained in the office certifying Section 34.

The Information Management Strategic Review (IMSR) team recognized the poor visibility of the IM/IT expenditures across DND, and although key changes have been made to the IM/IT financial control framework, more changes are necessary to provide quality information for performance measurement on resource management.

In order to maximize requests for volume discounts (RVD), it is recommended that IM/IT funds be allocated early in the fiscal year to allow orders to be broken up into manageable quantities at the most convenient times of the year for each destination. It is also recommended that the importance of maintaining all original supporting documentation of procurements—and the time period such documents must be retained—be communicated, and that ADM(IM) expand the annual cost visibility report to include comparison of actual expenditures to fund and budget allocations.

Centralizing and Outsourcing of IT Asset Management—The Future. Management of IM/IT non-classified hardware is currently undergoing some changes, and IMSR is examining the options of centralization and outsourcing. This report provides the advantages and disadvantages of each option, along with lessons learned from other organizations that have taken either approach. The critical step for successful implementation is meticulous planning with reliable data, significant research and a comprehensive business plan.

It is recommended that ADM(IM) continue the shift towards centralization and be sure to document a business case that identifies quantified cost-benefit goals, risk mitigation strategies, effective implementation plans and a performance measurement framework.

It is also recommended that ADM(IM) delay outsourcing IT hardware management until internal IM/IT services are optimized, reliable baseline metrics are available, appropriate risk assessment is done, and sufficient resources are provided for managing and monitoring outsourcing contracts.

Note: For a more detailed list of CRS recommendations and management response, please refer to Annex A—Management Action Plan.

INTRODUCTION

Objectives

- Review the current management control framework for non-classified hardware;[1]
- Review the availability and use of information for decision-making; and
- Examine the transition of IT hardware management being considered at the time of this review.

Scope

This review focused on resource management, controls on procurement, information for decision-making, and maintenance services of non-classified IM/IT workstation hardware in FY 2004/05. This includes desktops, monitors, laptops, servers and printers that are expected to follow a continuous lifecycle plan—primarily workstations for administrative offices and laptops used for field exercises. It excludes hardware purchased for either capital projects or operations, or funded by the Canadian Security Establishment (CSE). From this point on, this will be referred to as IM/IT hardware.

Methodology

Work was conducted within the National Capital Region (NCR) and five site visits, representing a cross section of Environments and budget sizes. The findings and opportunities for improvement identified by the CRS team are based on the results of sampling of financial transactions, interviews, comprehensive financial data analysis and comparison to IT asset management practices suggested in papers written by IM/IT management consultants. In addition, CRS reviewed future directions of the management of IM/IT hardware throughout DND that are currently being studied and implemented.

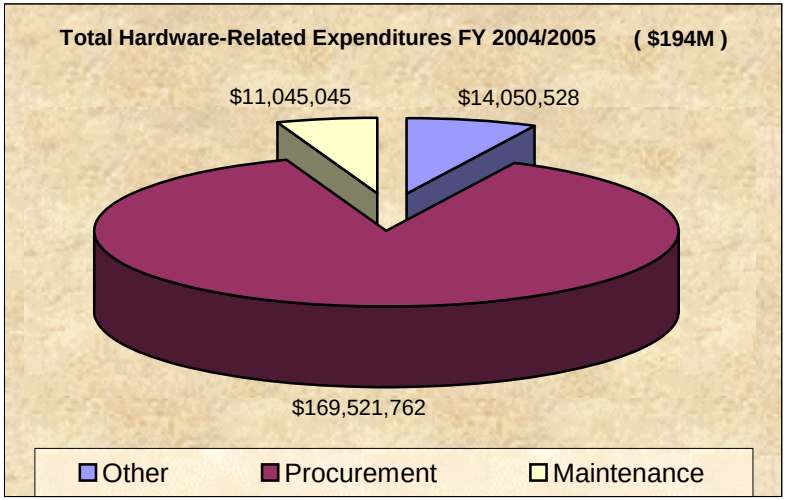


Figure 1. IM/IT Hardware Expenditures FY 2004/05. *Procurement accounts for 87 percent of annual IT hardware-related expenditures.*

[1] "Non-classified" is any hardware that is not covered in the following definition of Classified Assets in Annex A of Information Systems Security Orders (ISSO): *Assets, other than information, that are important to the nation and therefore warrant safeguarding.*

Background

In FY 2004/05 departmental expenditures related to procurement, rental and maintenance of IM/IT hardware totaled $194M (see Figure 1). Maintenance has been managed centrally via a national maintenance contract. Procurement was done by IT officers to meet local requirements and funded through local budgets. However, at the time of the review, both the procurement process and funding of IM/IT hardware were being centralized to maximize the potential savings of bulk orders. Monitoring of IM/IT planning and expenditures has improved with new reporting tools.

IT is essential for DND's operations and security. Efforts have been made to tighten controls on the corresponding risks and exploit the potential savings. As outlined in Figure 2, the first major initiative was the initiation of the *Information Management Strategic Review* in July 2001. The Review concluded that "DND/CF needs a single, best-informed focal point for strategic IM thinking and a pan-DND/CF approach to IM-related decision-making."[2] The overall mission is to reduce resources committed to IM/IT support in order to re-deploy them to operations.[3] It began with a department-wide Information Technology Service Delivery Assessment (ITSDA), and is currently under study by a team of experts (the Tiger Team) for rationalization.

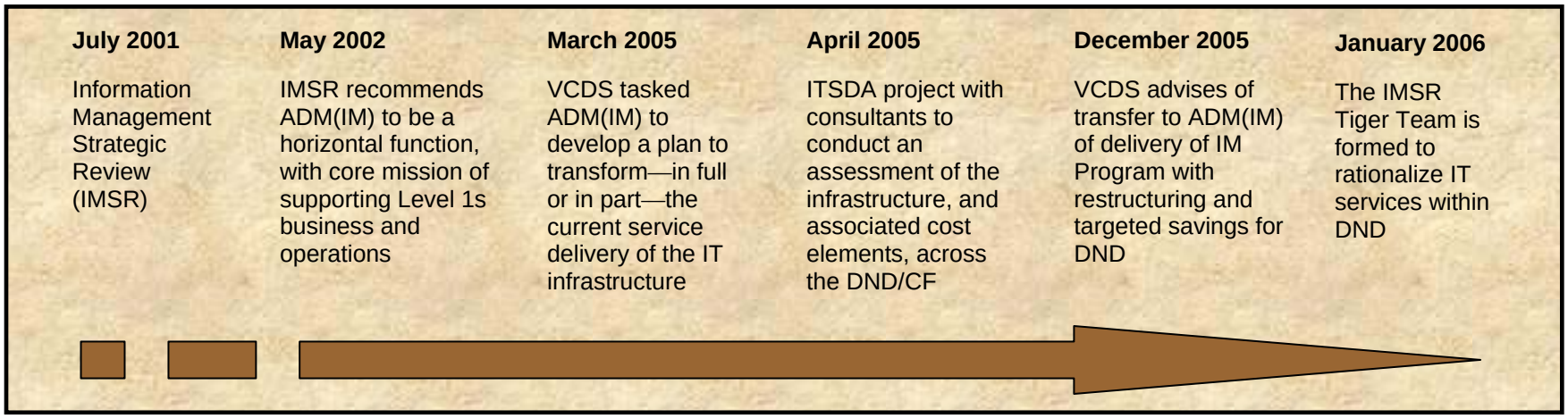


Figure 2. Major Initiatives in IM/IT Hardware Management Transformation. *The push is for centralized, strategic IM thinking in order to reduce resources committed to IM/IT support.*

The goal is to adapt a more centralized management approach across the Department. At the time of this review, there had not been significant progress made towards centralization. For this reason, the CRS team had to review the existing decentralized management approach, specifically profiles of local information systems for decision-making, financial resource management, financial controls and processes for procurement and maintenance.

[2] Defence Information Network, Information Management Review Implementation, *Frequently Asked Questions*, http://hr.ottawa-hull.mil.ca/IMRI/engraph/faq_e.asp.
[3] IM Forum Volume 6, Number 8, September 2005.

OBSERVATIONS AND RECOMMENDATIONS

Information for Decision Making

No information system exists to monitor DND's IT hardware from a departmental perspective. Regions rely on systems they developed themselves. Environments recognize the advantage of having a comprehensive profile of IT hardware and are taking action to develop systems that serve their own needs.

Lack of Department-Wide Profile of IT Assets

An ITAMS should provide a profile on the physical, contractual, financial and maintenance aspects of IM/IT hardware within an organization. This information is vital for making sound decisions ranging from IT/IM budget planning to ensuring that defined hardware standards are being met. Despite a number of attempts to develop a department-wide ITAMS (i.e., Enterprise Management Systems, Common User Core, and Defence Consolidated Service Desk), such projects never reached the implementation stage. It appears that a lack of management commitment and support led to under-funding and lengthy, unproductive planning stages. There is a department-wide inventory management tool called the Canadian Forces Supply System (CFSS), but all IM/IT officers interviewed concur that CFSS does not provide the details needed to effectively manage IM/IT hardware. As a result, there has been a bottom-up approach, and IT asset managers have each developed their own system, resulting in independent, homegrown ITAMS with various data that cannot be amalgamated to provide a department-wide profile.

Until a single, department-wide ITAMS becomes available to provide a department-wide profile and accurate, timely, relevant data on IT hardware assets, DND will have difficulties in monitoring and oversight of IM/IT hardware. In addition, the following situations will persist:

- Continuously spending resources on contractors to conduct department-wide inventories on an ad-hoc basis. Examples are inventory of IT hardware prone to operational risks of Y2K and one in 2005 to obtain a baseline necessary for deciding the future of DND's IT/IM.[4]
- Paying for maintenance on hardware still under warranty because warranty details of locally purchased assets are not available to central authorities of the national maintenance contract.
- Incurring a high level of training and learning curves for IT officers being posted to various sites that have different databases.
- Duplicating effort to enter asset data into CFSS and local databases.

Clearly a department-wide ITAMS would help reduce the amount of resources committed to IT hardware.

[4] The latter report did not include all unclassified or designated systems, so there still is no accurate department-wide inventory record of non-classified IM/IT assets.

Developing a Useful IT Asset Management System

An ITAMS should provide useful, accurate and timely information to anyone involved in IM/IT hardware management from base/wing IT officers to part-time IT technicians. A review of the current ITAMS at the six visited locations revealed what information is being captured and exploited for decision-making (see Table 1).

Location	Physical Data	Financial Data	Contractual Data	Maintenance Data
NCR				
Comox				
Winnipeg				
Esquimalt				
Land Force Central Area				
Land Force Quebec Area				

Information not recorded
Information recorded but not used or available
Information recorded and used

Table 1. Type of Information Captured and Exploited. *DND manages IM/IT hardware under multiple, independent databases. In general, the various databases are thorough in physical details such as brand, capabilities and location, but are lacking financial and contractual details such as the repair costs and warranty expiry dates.*

- Physical data such as brand, capabilities and location are being captured in high detail, but the usage of this information ranges from simple inventory count to reporting in detail which assets are idle, which assets should be replaced in the lifecycle plan, and the status of purchase orders.
- Only half of the systems capture financial data.
- Most of the systems are lacking contractual details, such as the repair costs or warranty expiry dates. Those that do capture it do not make it available to help desk staff who decide to call a service contractor or the manufacturer.
- Maintenance history records are captured in separate help desk databases; people deciding which pieces to replace or which model to purchase do not have access to this database.

It appears that most of the reviewed ITAMS systems have matured to only level 2 of 5 of Gartner's ranking (see Annex B) of ITAMS:

A database that is focused on counting the assets…however, installation, move, add and change processes are not consistently followed… Reports are basic, lack detail…inventories…are typically run on a project-by-project basis… software and hardware are often treated as separate assets. Linkages and sharing of (helpdesk) data with purchasing are sporadic at best.[5]

[5] Gartner, "Evaluating the Maturity of an IT Asset Management Program," November 2001. All five levels are briefly described in Annex B.

The greatest risk observed is the lack of contractual details and limited access to maintenance history records. Without this information DND is at risk of paying for repairs on items still under warranty. Unfortunately, as the national maintenance contract is funded centrally, many chief information officers do not see the benefit of recording manufacture warranty information on locally purchased assets. This risk has been identified and most of the help desk staff interviewed have begun to depend on the vendors' Internet sites for warranty details. Full dependence on vendors to provide warranty information is not sound management. This was demonstrated when ADM(IM) switched from depending on the national maintenance contractor to determine if services were under warranty, to doing their own review of each individual service call listed on the monthly invoice (100 percent verification). Since it began (May 2005) 5 to 10 percent of the claims were identified to be for equipment still under manufacturer warranty or the 120-day warranty of the service provider, and payment was denied. Review of maintenance claims should continue, and DND should capture contractual and maintenance information in a department-wide ITAMS.

Implementing New ITAMS

The latest endeavour for a department-wide database began in 2002 as part of the IT Service Management project (see Annex C). This project has mainly focused on configuration management, but this cannot be done without accurate and reliable asset records. More than three years later, in March 2006, the project was still in the definition stage and implementation is projected no sooner than 2009. This lengthy planning process was the cause of breakdown in the previously mentioned unsuccessful attempts; there is a high risk of project failure if this continues. On the other hand, if the ITAMS project becomes a high priority, with sufficient resources committed, implementation could reasonably be started in FY 2007/08.

Rather than wait, the Environments have begun to centralize their various databases and have spent resources on their own common ITAMS. To date, the Chief of the Land Staff (CLS) is modifying an off-the-shelf system for a common IT inventory database throughout the army, and the Chief of the Air Staff (CAS) has begun pilot-testing a different off-the-shelf database for all wings. To facilitate the eventual migration of their records to a department-wide database, ADM(IM) should quickly determine what information the department-wide ITAMS will require and advise the Environments to capture this information in their new systems.

Recommendations

COS ADM(IM)	**Department-wide Management System:** Assign priority to having a department-wide ITAMS with all key details for most effective inventory management successfully implemented by FY 2007/08.
COS ADM(IM)	**Database Implementation:** Assist local IT officers to prepare for implementation of a common DND system by defining the information required to be captured and who must have access to such information (e.g., warranty details easily accessible to the help desk).
COS ADM(IM) COS ADM(Mat)	**Parallel Systems:** Discourage the use of parallel systems for IM/IT hardware management (CFSS and ITAMS).

Procurement and Financial Control Framework

IT hardware lifecycle planning is of low priority on funding allocation, resulting in inefficient procurement at year-end. Financial controls such as monitoring planned to actual expenditures and retention of procurement documentation need improvement.

Procurement—Timing Funding to Maximize Cost Savings

Each DND location has established lifecycle plans for IT/IM hardware. To take advantage of the offered volume discounts from suppliers, each year the procurement plans are amalgamated mainly into four bulk orders (one for each Environment and the NCR) per type of IT hardware. RVDs are not new. As DND has become more aware of the potential savings, RVD application has augmented. In FY 2004/05, consolidation of requirements for desktops, laptops and printers significantly increased within each Environment and the NCR to a total of $19.7M with savings of $5.4M (additional RVDs were done at local levels). This is following the advice of the Information Management Strategic Review, and there is a push to continue increasing the application of RVDs.

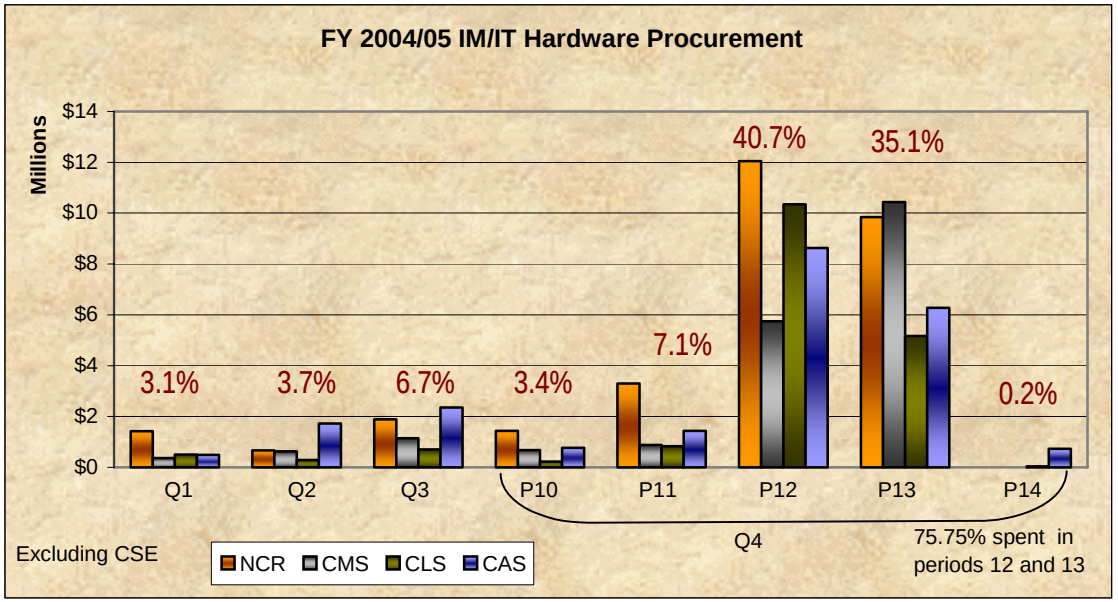


Figure 3. Hardware Procurement for FY 2004/05. *This extreme year-end spending on IT hardware results in volumes of goods too large to efficiently manage.*

Despite local lifecycle plans prepared early in the fiscal year, such procurement plans have not been given priority; thus, the funds required to meet these plans have historically not been freed up until the third quarter. As shown in Figure 3, in FY 2004/05, the NCR and ECS combined incurred 86.5 percent of their IM/IT hardware procurement in the fourth quarter of the fiscal year, with over 75 percent in periods 12 and 13 alone.

Dependence on year-end funding constrains annual procurement into very large orders with a tight deadline for delivery. While bulk purchasing brings the benefits of initial cost savings and standardization of equipment, other relevant factors should be taken into account to estimate real net savings:

- Due to insufficient human resources, large volume orders are taking between 6 to12 months to roll out to end users and install for operation. The assets are left idle for up to a quarter of their lifetime (or in the worst case, disposed in their original packaging), they lose value as technology advances very rapidly and 12 months of pre-paid warranty is lost. Some locations addressed the delay by incurring the additional costs of contracting extra people to help with the rollout, or leasing warehouse space to hold the large inventory.
- Centralization results in fewer (but larger) orders which, in turn, results in a lower variety of hardware models throughout DND. Standardizing personal computers to a low range of models throughout the Department increases risks of negative impact that a flawed model would have on operations or meeting security requirements.
- Despite warranties offered by suppliers, not all suppliers will service DND's remote areas. As very large orders (those exceeding the call-up limit of the National Master Standing Offer) must be awarded to the lowest bidder, DND may have to incur extra costs for other suppliers to do hardware maintenance, or pay full replacement costs of repairable items.
- Year-end procurement restricts the timeline between order and delivery. This has eliminated cost savings such as complimentary configuration by the vendors, which requires a number of weeks. Instead, DND had to accept delivery prior to fiscal year-end and use its own resources to configure each computer which, in turn, slowed down the roll-out to the end users.

Resource Monitoring—Comparing Actual Expenditures to IM/IT Hardware Plans

Due to lack of visibility, it used to be impossible to monitor departmental IT hardware expenditures. Until recently, such expenditures were charged to Operations and Maintenance of devolved local budgets under a general ledger account for all IT expenditures. As a result, hardware expenditures were not visible from a department-wide perspective. The IMSR team identified this weakness, and ADM(IM) has created tools such as the Functional Guidance Report that must clearly show a breakdown of L1s' planned investment in IM/IT, some distinct general ledger codes for various types of hardware, some distinct funds for IM/IT, and a Cost Visibility Report that is an overview of departmental annual IM/IT expenditures, including hardware.

Nonetheless, the expenditures in the Cost Visibility Report are not being compared to the L1 Business Plans, the Functional Guidance Plans, or the Hardware Lifecycle Plans to verify if resources are consumed as planned and variances can be explained. Three points brought this issue to this review's attention:

- The IM/IT Functional Planning Guidance Report is a composition of annual spending plans reported by L1s to ADM(IM). Only four of 17 L1s provided the response in FY 2004/05.
- Despite lifecycle plans that follow defined four- or five-year recapitalization strategies, the number of assets to be recapitalized in the FY 2004/05 lifecycle plans was increased at year-end whenever extra funds were available.
- One location had cost centres transfer funds from their budgets to a centralized procurement budget, yet the lifecycle plans were not adhered to. In fact, none of the hardware purchased was provided to the cost centres that funded the procurement.

This observation is similar to one in the recent CRS Audit of Software Acquisition and Maintenance (September 2005): "Improved visibility of IM/IT expenditures required that software licence and maintenance costs be fully identified in both business plans and the FMAS. L1/Group Business Plans currently do not clearly identify all software requirements and the resulting costs are often allocated to several budgets."

Compliance with *Financial Administration Act*—Retention of Supporting Documentation

CRS observed that authorization of payment for goods received is written on all invoices reviewed by staff with appropriate delegated authority, and adequate segregation of duties is followed. However, whenever supporting documentation had not been retained with the invoices, we were unable to assess if Section 34 had been done in accordance with the FAA. Inspection of a sample of invoices for IT hardware procurement found that supporting documentation was often kept in various areas on the base/wing or shipping documentation were disposed of once it was confirmed that the goods were received and the payment was made. The departmental policy is very clear: *"All supporting documentation regarding a payment, such as contracts, receipt documents, invoices, Section 33 and 34 certifications and all other relevant documents, must be retained…by the office certifying under Section 34 of the FAA."* [6] Financial policies require retention of such documentation for a minimum of six years. Improvements must be made to the communication and training of the financial policies related to the administration of the FAA. This problem did not exist in the NCR as the Director Common Procurement and Supply maintained supporting documentation as required by the policy. The sites that need to address this issue have been advised.

Recommendations

IM Gp, Asst CMS DGLS, Asst CAS	**Return on Investment:** Maximize return on investment on RVDs by allocating IM/IT funds early in the fiscal year to allow orders to be broken up into manageable quantities at the most convenient times of the year for each destination.
COS ADM(IM)	**Financial Management:** Expand annual cost visibility report to include comparison of actual expenditures to lifecycle plans and Functional Guidance Plans.
DG Fin Ops	**Document Retention:** Communicate the importance of maintaining all original supporting documentation at the offices certifying IT procurement under Section 34 of the FAA, and the time period such documents must be retained.

[6] FAM 1016-3, Account Verification, paragraphs 6 and 7, requires all original supporting documentation regarding a payment, such as contracts, receipt documents, and invoices, are to be retained by the office certifying under Section 34 of the FAA.

Centralization and Outsourcing of IT Asset Management—The Future

Management of technology and information systems has been undergoing centralization throughout DND and more changes are being studied. The overall goal is to reduce resources committed to IM/IT support in order to re-deploy them to operations.[7]

Risks of Centralization

Management of IT hardware within DND is currently being transformed to a more centralized approach. This includes a national maintenance contract, regional service desks and amalgamation of all annual lifecycle procurement. This may reduce costs, but has hindered the quality of services provided. For example:

- Soon after centralization of IT hardware services within the NCR, clients perceived a significant increase in the time for them to obtain a laptop to have on loan, or to replace a broken asset. Clients could become dissatisfied. There could also be an impact on overall costs, including employee productivity. ADM(IM) has been developing tools to assess the quality of services.
- In March 2004, DND changed the service provider and the level of service to be rendered under the national maintenance contract. Clients/users interviewed as part of this review were dissatisfied with the quality of service they received in FY 2004/05. This contract is funded centrally, but users/clients believe that due to either administration of the problem tickets or the inexperience of the technicians, the service is too slow (or too expensive) and many outside the NCR will often by-pass the contract and spend additional local resources to examine the problems themselves and purchase repair parts.
- Centralized lifecycle procurement of DND workstation hardware pushes most of the funding into a large budget which, in turn, eliminates visibility in FMAS of who is actually incurring the cost (the end users).

Under the Rationalization of IM/IT project, ADM(IM) has organized a team of IT management professionals (the Tiger Team) to find ways of eliminating duplication of IT initiatives throughout the Department, define *what* services need to be provided, the quality of services that *can* be provided and where or *by whom* should such services be provided.

Studies suggest that the most effective approach for centralization of IM/IT hardware management within large organizations is to have the IM/IT organization (i.e., ADM(IM)) simply define and enforce controls such as standard procedures and IM/IT hardware models while allowing individual business units to choose and pay for the hardware they need. This balanced approach supports a high degree of centralized IM/IT control, "without the inflexibility that can alienate decision-makers".[8] This complies with the IM Functional Planning Guidance for 2005/2006: *"ADM(IM) will provide the guidance, direction and standards for IM/IT design, use and functionality in the DND/CF. L1s are expected to have their own IM/IT-related strategies and to sponsor their IM/IT-related requirements within these departmental standards."*

[7] IM Forum Volume 6, Number 8, September 2005.
[8] PC Lifecycle Management, Tools and Strategies for Reducing TCO and Optimizing Total Value, Intel Solutions White Paper, September 2003.

Whatever approach the Department chooses, a business case must entail clearly defined roles and responsibilities, quantified cost-benefits to be achieved and measured, associated risk mitigation strategies, a performance measurement framework and the required resources. Table 2 provides a list of possible advantages (+) and disadvantages (-) of centralizing IM/IT management that should be taken into account:[9]

Operational Efficiency	Constituent Service	Political Return
+ Economies of scale + Reduced overlap and duplication + Easier data and infrastructure consolidation + Rationalization of service contracts + Easier to maintain internal skills and capability + Potentially less vulnerability to disaster for each individual department - Loss of agility at the departmental level - Possible tensions with smaller departments	+ Easier integration of constituent-facing services - Decreased flexibility in responding to department-specific needs	+ Easier overall justification of IT spending + More resources for other political priorities as IT costs are reduced - Higher risk of political backlash due to average larger size of deals

Table 2. Advantages and Disadvantages of Centralized IT Asset Management. *Hardware users are concerned about the above-mentioned disadvantages. The business case for centralization should address how to mitigate such operational, constituent and political risks.*

Note: "Department" in DND represents local Information Services offices.

Risks of Outsourcing

Outsourcing IT hardware management to an external vendor introduces new risks and challenges. Common risks are presented in Annex D. The most common cause of setbacks is a lack of understanding of the service levels that must be provided, the total cost structure or even the impact the change will have on operations. Studies conclude that organizations should not outsource until they optimize the quality and expenditures of their own IT services in order to have an accurate baseline to perform a risk assessment on which to produce a sound and comprehensive service-level agreement.

[9] As adapted from Gartner: Strike a Balance Between Centralization and Decentralization of Government IT Management, June 2005.

Preliminary decisions to outsource part of IT services had been made before the 2005 ITSDA was complete. One objective of this ITSDA was to obtain a baseline of internal IT processes and expenditures, with data gathered by Gartner.[10] A similar Gartner review of MARLANT and MARPAC IT service delivery was done in 2002. Both studies encountered major challenges with its data gathering. The MARPAC report states: "*There are gaps in almost all study areas,*" and a draft ISTDA report states: "*only indicative estimates for the quantity of IT assets, personnel resources and spending levels were attainable.*"[11] CRS reviewed the data gathered by the latest ITSDA team and concluded that the information collected is not accurate enough to make major strategic decisions such as outsourcing DND IT hardware services.

CRS was advised at the time of review briefings that the decision to outsource has not yet materialized. Instead, the Tiger Team has been established to find ways to optimize the current IT service levels and rationalize resources. This should define suitable metrics to be recorded over a 12-month period, thereby creating a reliable, accurate and useful baseline. There must also be a rationalization of the resources required for effective monitoring of service provider performance, terms of the agreement and billing.

Another outsourcing option being discussed at the time of this review is a government-wide program proposed by Public Works and Government Services Canada. We believe that with DND's high volume of assets and the span of locations to service, this option imposes significant risks and challenges to ensure that the Department's requirements are satisfactorily met.

Recommendations

COS ADM(IM)	**Centralization:** Continue the shift towards centralized, IM/IT hardware management. Fully document the conclusions of the Tiger Team with a business case that identifies the quantified cost-benefits to be achieved, the associated risk mitigation strategies and a performance measurement framework.
COS ADM(IM)	**Outsourcing:** Delay outsourcing IT hardware management until internal IM/IT services are optimized, reliable baseline metrics are available, appropriate risk assessment is done and sufficient resources are provided for managing and monitoring outsourcing contracts.

[10] See Annex E for a brief outline of ITSDA.
[11] Draft Data Collection report of IT Service Delivery Assessment, DND Information Services Transformation Project, 29 November 2005.

ANNEX A—MANAGEMENT ACTION PLAN

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Information for Decision Making				
1.	**Department-wide Management System.** Assign priority to having an effective department-wide IT Asset Management System (ITAMS) successfully implemented by FY 2007/08.	ADM(IM)/ COS ADM(IM)	The need for a common department-wide IT asset management repository is recognized. IT asset visibility will be achieved through a number of mechanisms. 1) A tool is being deployed on the network (SMS) through the DND standard NOS project. This will provide visibility of all network connected assets. 2) Consolidation of service delivery across the DND/CF is being pursued under the IM rationalization initiative. A pilot is being launched under SQFT in the Province of Quebec. Once validated in the pilot, plans will be developed to consolidate IT service delivery across the remainder of CF bases/wings. 3) An approach for better integrating IT procurement and asset management support is being developed in partnership with PWGSC, IT Shared Services. ITSM tools and/or services will be provided through this mechanism.	End of FY 2006/07 FY 2009/10

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Information for Decision Making (cont'd)				
2.	**Database Implementation.** Assist local IT officers to prepare for implementation of a common DND system by defining and communicating both the data to be captured and who must have access to this information (e.g., warranty details easily accessible to the help desk).	ADM(IM)/ COS ADM(IM)	Local IT services will initially be consolidated at the base/wing or regional level. In conjunction with this consolidation, some services will be further consolidated under the IM Group and provided as national shared services. National shared services will be implemented gradually as solutions are developed. In the meantime, bases/wings will use their existing service desk and ITAMS tools to manage the consolidated local inventory holdings.	Requirements definition complete by FY 2007/08
3.	**Parallel Databases.** Discourage the use of parallel databases for tracking non-classified IT hardware.	ADM(IM)/ COS ADM(IM)	Some rationalization in the number of different asset repositories will occur as IM rationalization progresses. Until such time as an integrated solution is implemented, parallel systems will be required to record IT hardware information.	Ongoing

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Procurement and Financial Control Framework				
4.	**Return on Investment (ROI).** Maximize ROI on requests for volume discounts (RVD) by allocating IM/IT funds early in the fiscal year to allow orders to be broken up into manageable quantities at the most convenient times of the year for each destination.	ADM(IM)/ IM Gp	The IM Gp Comptroller will recommend to the Resource Management Committee to target the allocation of all available IM/IT funds by the end of April each fiscal year.	April 2007
		CLS/DGLS	While the availability of in-year funds is dictated by operational priorities, the army maximizes the value of RVDs by conducting centralized procurement of IT hardware. Additionally, the Land Force maintains strict IT inventory control through established IT entitlement templates and uses the departmental change management process for effecting change and managing growth. Recapitalization of IT hardware is planned centrally, with input from Army Area Headquarters, and requirements are passed to procurement as time and funding allows. Under auspices of the VCDS IM/IT Rationalization Initiative, the army will be leading the ADM(IM) drive to attain economies and efficiencies in the management and procurement of IM/IT assets through the conduct of an IM/IT Rationalization Pilot. This pilot project is scheduled for completion by March 2007, while the rest of the army will follow the departmental schedule for first level rationalization by March 2009.	Pilot–March 2007 Dept–March 2009

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Procurement and Financial Control Framework (cont'd)				
		CAS/Asst CAS	Over the past two FYs, Air Staff have made extensive use of RVD contracting. The combined financial savings exceed $2M. RVDs will continue to be used to the fullest extent. To facilitate the purchase of manageable hardware quantities, 10-15% of the necessary funding was allocated at the start of each FY. The remaining amount was allocated throughout the year depending on both the tempo and unpredictable nature of operations. The business planning process for FY 2007/08 includes a proposal to allocate up to 35% of the required IT recapitalization funding at the beginning of the FY and use the Air Resource Management Committee to satisfy quarterly in-year funding requests for the remaining requirement.	Complete
		CMS/Asst CMS	The Maritime Command Planning Guide for FY 2008/09 (MCPG 2008) will be amended to include direction on the allocation for funding of IM/IT requirements. This direction will incorporate functional direction anticipated from ADM(IM) as a result of the studies conducted through the IM Rationalization process. MCPG 2008 will be published in June 2007.	June 2007

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Procurement and Financial Control Framework (cont'd)				
5.	**Document Retention.** Communicate the importance of maintaining all original supporting documentation of procurements, and the time period such documents must be retained.	ADM(Fin CS)/ DG Fin Ops	Document retention requirements are indicated in Financial Administration Manual chapters.	30 November 2006
		ADM(IM)/ COS ADM(IM)	IM Gp's Annual Financial Management Training and Procurement Session addresses the issue of document retention and reminds employees/members of the document retention policy. Also, DIMCBM 2-3 Verification and Review checklists include a "check" to remind or inform staff of the departmental policy to retain documents.	Annual basis Ongoing
6.	**Financial Management.** Expand the annual cost visibility report to include comparison of actual expenditures to fund and budget allocations.	ADM(IM)/ COS ADM(IM)	As a result of IM/IT Rationalization and the consolidation of funding for IT procurement and support into IM Gp, the cost visibility will likely no longer be produced. Because all L1 IT spending, except those systems and applications excluded from L1 Transfer Agreements, will be centralized in the IM Gp, expenditures will be reported at the L1 level and comparisons will be made with fund and budget allocations.	FY 2007/08

ANNEX A

Ser	CRS Recommendation	OPI	Management Action	Target Completion Date
Centralization and Outsourcing of IT Asset Management—The Future				
7.	**Centralization.** Continue the shift towards centralization and be sure to document a business case that identifies quantified cost-benefit goals, risk mitigation strategies, effective implementation plans and a performance measurement framework.	ADM(IM)/ COS ADM(IM)	The proposal is to consolidate in a corporate account all funding for IT equipment procurement and support. This was already done for the NCR. It will provide visibility of the current baseline level of expenditures on IT. A common standard will be applied departmentally for the renewal of IT assets. The development of a formal L1 performance measurement framework is in progress. Any strategic decision relating to centralization or outsourcing will be included in the framework.	Funding transfers to corporate account complete by 1 April 2007 Spring 2007
8.	**Outsourcing.** Delay outsourcing IT hardware management until internal IM/IT services are optimized, reliable baseline metrics are available, appropriate risk assessment is done and sufficient resources are provided for managing and monitoring outsourcing contracts.	ADM(IM)/ COS ADM(IM)	Much greater visibility will be gained through IM rationalization. Sourcing options for delivering national shared services will be examined and developed as we gain understanding of the support requirements.	Ongoing as IM rationalization progresses

ANNEX B—ITAMS-LEVEL ASSESSMENT

Level 1: Chaos—Little process maturity, inadequate tools to track or manage assets, lack of operations management discipline.

Level 2: Reactive—Focus counting the assets with auto-discovery tool; installation, move, add and change processes are not consistently followed; reports are basic and lack details.

Level 3: Proactive—Cross-functional team formed to assess requirements; processes are well-defined, adhered to, reviewed and re-engineered when necessary; inventory data is linked with financial and contractual data to create a centralized view in an ITAM repository.

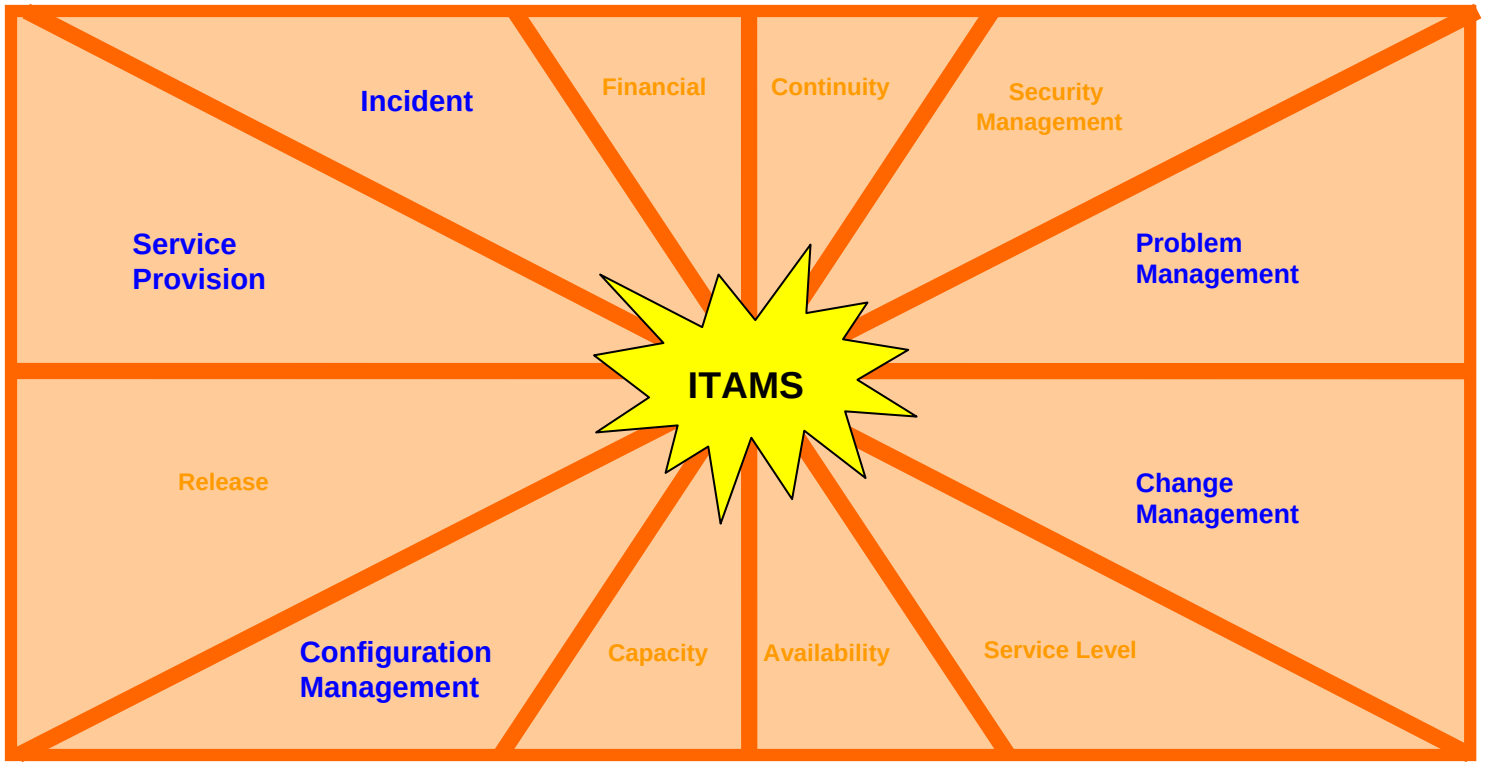
Level 4: Service—Metrics are in place, frequent reporting, requisition processes are automated and tightly integrated with purchasing and ERP systems, inventory levels are tracked, assets retired/disposed in accordance with technology refresh plan, ITAM team in sync with service demands.

Level 5: Value Creation—Mature ITAM program and systems, TCO metrics are linked with ITAM metrics.

Source: *Gartner, Evaluating the Maturity of an ITAM Program, November 2001*.

ANNEX C—OVERVIEW OF IT SERVICE MANAGEMENT PROJECT

The ITSM project began with a $66M estimate and included 12 processes of IT services. Project cost estimate has since been reduced to $26M for only 5 processes: Incident, Service Provision, Change Management, Configuration Management and Problem Management. An IT Asset Management System is vital to capture records of incidents, problems and configurations, which in turn would provide accurate, timely, useful information for all monitoring and decision-making in management of IT services.



ANNEX D—RISKS OF OUTSOURCING

- In a Deloitte Consulting LLP study, most executives from 25 large organizations indicated that outsourcing is not meeting their organization's expectations due to unexpected costs and complexity.
  - 44 percent of respondents did not save money as a result of outsourcing; 57 percent absorbed costs for services they believed were the contractual obligation of their supplier; and nearly half of them identified hidden costs as the most common problem.
  - One in four respondents had to bring back functions in-house after realizing that they could be performed better internally and at less costs.
- A US bank outsourced IT help desks and distributed computing services. The decision was reversed two years later due to low morale, employee turnover and reduced well being of IT organization and users throughout the corporation.
- Many companies struggle to identify the actual tasks performed by the functions being outsourced. These unknowns may affect the cost of outsourcing or the level of satisfaction with the end product or service.
- On-time delivery performance and end-customer satisfaction levels may decline because of delays at third parties.
- Providers may not be financially viable, thereby exposing the company to supply interruption risk.

ANNEX E—OUTLINE OF IT SERVICE DELIVERY ASSESSMENT

- To transform the current delivery of the IT infrastructure in order to support the CDS transformational vision, to make it more efficient and cost effective across the DND/CF, and to identify target outcomes for DND participation to the IT-Shared Services government initiative.
- Team includes Gartner consultants.
- Includes assessment and review of IT Services Delivery (e.g., distributing computers, IT Help Desk Services, etc.).
- Data collection at 24 sites.
- Gartner benchmarked DND against similar “peer” organizations.
- Target dates: Data collection (August 2005), Business Case (November 2005), Approval (February 2006).
- Reports issued: Data Collection Report (November 2005), DND/CF Final Results (December 2005).