OFFICE OF THE
City Auditor

Software License and Hardware Use

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Software License and Hardware Use

1.   Introduction

The City of Edmonton invests a significant amount of resources into computer software and hardware. There are employees in all City departments who use computer hardware and software on a daily basis. The Office of the City Auditor (OCA) included an audit of City employees' use of software licenses and computer hardware in it's approved *2011 Annual Work Plan.*

2.   Background

As at March 31, 2011, the City had 6,698 desktop, laptop, and tablet computers (computers). The City leases these computers for three or four-year terms. In 2010, the City capitalized $4.8 million in lease payments for these computers.

There are approximately 1,100 different licensed software programs installed on these computers. The City purchases software licenses in many different ways depending on the requirements of the software producer. For example:

- It purchases an individual license for each computer it has installed the software program on.
- It installs the software program on many different computers, but purchases only a set number of licenses. Therefore, only a set number of people can use the software program at one time. This is known as concurrent licensing.
- It purchases a license that can be used at a single location, but with an unlimited number of end users. This is known as a site license.
- It pays for the cost of the license as part of the purchase price of the software program.
- It purchases licenses at a corporate level based on the total number of computers it owns.

In 2010, the City spent $9.3 million on the purchase and renewal of software licenses; in addition it capitalized $1.5 million for the purchase of software programs. Per the Financial Services Department, the capitalized software programs will benefit the City over the next 10 years.

There are also many other software programs on the City's computers that do not require the purchase of a license. These include software that the City developed (e.g. POSSE), free software (e.g. RealPlayer), or software that came with the purchase of hardware (e.g. software to run the computer's mouse).

Management of each City branch decides what software and hardware their staff require to run their operations. The Information and Technology (IT) Branch coordinates

the purchase of the required software programs and the leasing of the required computers for the branches based on approved requests. The IT Branch or each individual branch coordinates payment for the software licenses required.

3.   Audit Objective, Scope, & Methodology

Objective
The overall objective of this audit was to determine if the City has software licenses or computer hardware that employees are not using.

Scope
The scope of the audit included the computers and the software programs installed on them from all City departments reporting to the City Manager, as well as the computers and software used by the OCA. However, to meet our objective we focused our review on a sample of computers and the software installed on them. We did not include other types of hardware such as printers and servers in our scope.

Additionally, our audit did not include reviewing the City's software asset management process, since it has recently been reviewed by a consultant. However, we did include a review of the consultant's findings as part of our audit.

Methodology
The IT Branch maintains a record of each computer leased by each branch in the City. We randomly selected a statistically valid sample of 148 computers out of the 6,698 computers (2.2 percent of 6,698 computers) listed on this record. Also, to ensure adequate coverage in branches where we thought the potential to have unrequired computers was high, we judgmentally chose an additional 52 computers. Our sample of 200 included computers from all City departments.

In order to meet the objective of this audit we sent a questionnaire to the user of each computer in our sample. We used responses to the questionnaires to determine if someone was actually using the computer or if the branch had definite plans to use the computer in the near future. We also asked each user to indicate whether or not they required each piece of software installed on their computer and how frequently (daily, weekly, monthly, rarely, or never) they used it. We had all of the responses to our questions verified by a branch representative. The branch representatives either had the knowledge to verify the user's responses or were able to coordinate the verification with the user's supervisor.

4.   Observations and Analysis

4.1.   Software License Use

The responses to the questionnaires show that City employees do not require all of the software licenses the City has purchased. This means that the City is spending money on software licenses that computer users do not use.

Of the 200 questionnaires we sent out, 53 percent (106) indicated that there are software programs on the computers that are not used. After verification by the branch representatives, we found that 39 percent (78) of the computers actually had software programs installed on them that were not required. Of the software programs that are not required, 50 percent require some type of license. Some users also indicated that they require a licensed software program but that they rarely use it.

We identified two potential reasons for why so many people have unused or rarely used software programs installed on their computers. They are:
1) The challenges in the City's software asset management process, and
2) The ineffective optimization of software program usage and software license costs.

These potential reasons are discussed in the following sections.

4.1.1.   Software asset management

A software asset management program enables the effective management, control, and protection of software assets within an organization. Among other things, having an effective software asset management program helps reduce the risk of excessive spending on licensing and IT support costs.

In 2010, the IT Branch hired a consultant to assess the City's software asset management process. This included reviewing the City's procurement, deployment, asset repositories, and license reconciliation processes. It also included an assessment of the impact to the process that would result if the City changed its model for licensing Microsoft products. The consultant identified several challenges related to the City's software asset management processes, in particular:
- There is a strain on the existing resources to manage the software asset inventory and contractual reporting requirements of the software license agreements.
- The roles of the individuals involved in the process are not well defined.
- There is no single person responsible for providing governance and accountability to enforce software asset management practices.
- There is a lack of understanding/knowledge of contract/licensing terms.
- The City has disparate and incomplete software inventory systems and tools.
- The software audit/true-up and inventorying processes are lengthy due to manual data collection and reconciliation process.

The consultant indicated that these challenges increase the risks of:
- Higher costs associated with unrequired software.
- Non-compliance with licensing contracts.
- Being unable to determine the City's current licensing position at any given time and whether licensing gaps exist.

The consultant made several recommendations to the IT Branch to help reduce the risks associated with the challenges they identified and improve the City's software asset management processes. The IT Branch agreed with the recommendations and has identified an effective software asset management program as a priority for the Corporation. However, to date, the IT Branch has not started to implement these recommendations.

Recommendation 1 – Improve Software Asset Management Process
The OCA recommends that the Chief Information Officer ensure the recommendations provided by the consultant to improve the software asset management process are implemented.
Management Response
Management agrees with this recommendation. In 2010, under the direction of the Chief Information Officer, the IT Branch secured the services of Deloitte consulting to proactively review management of software use and licensing. The Chief Information Officer is committed to implementing the recommendations from the consultant and has met with senior IT staff to ensure a plan is in place. Phase One of the plan will commence early in 2012, and is planned to take approximately three months to complete. This phase will establish the overall project scope and approach, and estimate the resources required to implement the recommendations. Once this phase is complete, and the identified resources required for the next phase determined, a detailed implementation plan including a target implementation date will be developed.

4.1.2.   Optimizing software program use and software license costs

City Administration is responsible for ensuring the optimization of software program usage and software license costs within the City. This includes ensuring the amount of use of the software program warrants the purchase of the software license or if other more cost effective means of performing the work are available. Currently, software program usage information is not available for the City Administration to fulfill this responsibility effectively.

The results from our questionnaires show that the unused licensed software on the 200 computers we sampled is costing the City $5,900 annually. If the amount of unused software throughout the city is similar to the results from our statistical sample, we believe the City is paying approximately $156,000 annually for unused software licenses.

Optimizing software program usage and software license costs will also mean looking at the costs associated with software licenses that are rarely used.

We calculated the cost of software licenses for six individually licensed software programs that the users from our sample are rarely using. We chose these programs because the IT Branch staff believe there are many employees with these programs installed on their computers who are rarely using them.

From our sample, we identified the users who have these programs installed on their computers and their response to our question on how often they use the program. We multiplied the number of employees who indicated that they rarely use the program (they use it less than once per month) by the cost of a single license. Table 1 shows the results of our analysis.

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Table 1 – Cost of Rarely Used Software Licenses

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Software Program	Cost of One License	Results From Sample		
		# of Computers With a License	# Rarely Using the Software Program	Cost of Rarely Used Licenses
Microsoft Visio Standard	$200	20	6	$1,200
Microsoft Visio Pro	640	7	6	3,840
Acrobat Standard	196	31	6	1,176
Acrobat Pro	252	22	3	756
Microsoft Project Standard	452	7	3	1,356
Microsoft Project Pro	1,134	1	0	0
			Total cost of rarely used licenses	**$8,328**

We believe that there is a potential for the City to save on annual software license fees if the Administration works with the IT branch to ensure software use and software license costs are optimized.

Recommendation 2 – Effective Software Use
The OCA recommends that the Chief Information Officer works with City Administration to ensure that software use and software license costs are optimized for all City computers.
Management Response
Management agrees with this recommendation. The Chief Information Officer has been working with City Administration to set a new direction for the management of software licenses for both office productivity tools and enterprise applications. This new direction maximizes the effectiveness of software licenses by creating a solution where software is accessed from a central repository and is used when required and returned when not in use. This direction, defined in the Workspace Edmonton Initiative, will transition the City from a distributed funding and approval model to a centrally managed software license model under the oversight of the Chief Information Officer. Details of the projected cost avoidance for Workspace Edmonton are defined in the Workspace Edmonton business case. If the Workspace Edmonton initiative is approved and

funded, implementation of the centrally managed software license model will commence in the 4th quarter of 2012 and be phased in throughout 2013 and the first 3 quarters of 2014.

5.   Hardware Use

The results from the questionnaires show that City employees are using or have concrete plans to use substantially all of the computers leased by the City. This means that the City is not paying for computers that are not required.

The 200 computer users we sent questionnaires to verified the existence of all the computers and only one indicated that the computer we were asking about was not required. The branch representative indicated that the unneeded computer's lease will expire soon and that they will not be replacing it.

Our results indicate that the City's system for tracking and monitoring hardware use is effective. It helps reduce the risk of lost computers and minimize the costs associated with leasing computers that are not required. The system involves the IT Branch maintaining a record of each computer owned or leased by each branch in the City. As computers change locations and users, branch staff notify IT Branch staff so they can update the record. IT Branch staff then makes the records available to branch staff on a regular basis. This provides branch management with information they can use to ensure each computer is required and reassign unrequired computers instead of acquiring new ones.

6.   Conclusion

The results of this audit indicate that all computers leased by the City are required. However, the results show that some of the software programs installed on the computers are not being used and some are rarely being used. If these software programs were removed from the computers we estimate that there would be significant savings for the City in annual license fees.

We made two recommendations to the Chief Information Officer which will assist the City in optimizing the use and costs of software licenses. However, the implementation of these recommendations will only lead to savings for the City if the Administration ensures that the software programs that are rarely or not being used are removed from City computers.

We would like to thank all the City staff who completed our questionnaires and the branch representatives who worked with us to ensure the accuracy of the results of this audit, as well as the IT Branch for their cooperation.