

Information Technology Infrastructure and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management

Date: June 28, 2018

To: Audit Committee

From: Auditor General

Wards: All

SUMMARY

The Auditor General initiated the audit of the City's Information Technology (IT) infrastructure and asset management in 2017. The results of the Phase 1 of this review were presented to the Audit Committee on February 7, 2018.

This current report provides results of our Phase 2 audit of the City's IT infrastructure and asset management. In this Phase 2 report, we have identified the following opportunities for improvement related to various IT projects and initiatives:

- Improving the accuracy of inventory information: The Information Technology Asset Management (ITAM) System was not reliable due to incomplete and inaccurate information. Improvements are needed here.
- Better planning: Computers valuing \$1.9 million were purchased in bulk but not deployed for a significant amount of time. Better planning is necessary.
- Reducing delays in implementation: We saw delays in IT project implementation resulting in the City incurring costs but not receiving the intended benefits

This report highlights a number of key issues that need to be addressed by the I&T Division in collaboration with other City divisions. The Auditor General has made eight recommendations in this Phase 2 report. Overall, the Auditor General has made 22 recommendations during the Phase 1 and Phase 2 of the IT infrastructure and asset management audit.

RECOMMENDATIONS

The Auditor General recommends that:

1. City Council request the Chief Information Officer to:
 - a. Develop a process to ensure timely synchronization of IT asset purchases recorded in SAP with IT Asset Management (ITAM) System records
 - b. Expedite reconciliation of network assets and update them in the ITAM System
 - c. Develop secure communication mechanisms (or an alternate process) to allow for the update of segregated networks' IT assets in the ITAM System
 - d. Provide ITAM System access to other City divisions (where required) including adequate training to assist them in understanding the system.
2. City Council request the Chief Information Officer to:
 - a. Develop a process for monitoring and reporting of "in stock" assets and their respective costs. Reporting should be made available within the I&T Division and other City divisions to review the availability and age of IT assets for consideration of deployment before making new purchases
 - b. Ensure that all high-volume purchases of IT assets are supported with an appropriate deployment plan
 - c. Develop a process for performing a periodic review with City divisions that have IT assets which are not deployed or assigned to users to address any excess inventory.
3. City Council request the Chief Information Officer to develop a reporting mechanism and criteria for reporting to the Executive Modernization Committee and respective Executive Project Sponsors on project implementation delays and unused software licences with reports to include as a minimum:
 - a. Accumulated financial impact of delays
 - b. Unused assets, licences and solutions
 - c. Forgone benefits as a result of project implementation delays
 - d. Plans in place to mitigate the impact of delays.

4. City Council request the Chief Financial Officer to coordinate with the Executive Director of Human Resources and Chief Information Officer to:
 - a. Expedite the adoption of the SAP Employee Self-service solution throughout the City to maximize licence use and save costs incurred from printing and distribution of pay stubs
 - b. Review the existing IT environment to evaluate options to allow staff that do not have a work computer to have access to Employee Self-service solution.
5. City Council request the Chief Information Officer to conduct an assessment of the City's existing physical servers for identification of opportunities for adoption of cloud services and/or virtualization.
6. City Council request the Chief Information Officer to implement ongoing monitoring of cloud consumption levels by divisions to ensure any necessary adjustments to the service delivery model are identified and implemented on a timely basis to avoid incurring excessive costs.
7. City Council request the Chief Information Officer to formalize criteria to identify critical network assets to be covered by the corporate support and maintenance contract and communicate to the responsible divisions the advantages of inclusion in the City contract.
8. City Council request the City Manager to forward this report to the major agencies and corporations for their review and consideration of the relevance of the recommendations to their respective organizations.

FINANCIAL IMPACT

This audit identified opportunities to save costs incurred on software assets that are not used on a timely basis. In addition, improved controls over management of IT assets and ongoing monitoring of project implementations would also lead to reduced IT costs for the City.

There are also opportunities to realize efficiencies and cost savings by moving away from City-operated physical servers to either virtual servers or cloud service delivery solutions.

The extent of savings cannot be determined at this time. However, the Auditor General will attempt to estimate savings during the follow-up on the implementation of these recommendations.

DECISION HISTORY

The Auditor General's 2017 Audit Work Plan included a review of the information technology infrastructure and assets managed by the I&T Division. The Auditor General's 2017 Audit Work Plan is available at:

<https://www.toronto.ca/legdocs/mmis/2017/au/bgrd/backgroundfile-101843.pdf>

The results of the Phase 1 of this review were presented to the Audit Committee on February 07, 2018. The Phase 1 report is available at:

<https://www.toronto.ca/legdocs/mmis/2018/au/bgrd/backgroundfile-112385.pdf>

COMMENTS

PROBLEMS RELATED TO IT ASSET MANAGEMENT

The City is now 12 years down the road from its initial purchase of an IT Asset Management (ITAM) System that was scrapped after four years, and eight years on from the time a second system was acquired. The ITAM System still does not have a complete and accurate picture of IT assets. A total of over \$7 million has been spent on both the ITAM Systems. A concerted effort needs to be made to ensure the current ITAM System is updated and stays accurate going forward.

PROBLEMS WITH EXTENT AND TIMING OF SOFTWARE ACQUISITIONS

The report includes a number of examples where software licences were purchased but were not used at all, or were not used for a long period of time. For example:

- In 2007, the City bought a SAP Procurement solution for its Supply Chain Management processes, but this solution was never implemented. The City spent \$4.7 million in acquisition and maintenance costs over a period of nine years. Management advised that this cost has been credited towards the price of a new solution, however, it is difficult to verify that the City actually recovered \$4.7 million.
- The SAP Ariba cloud solution was expected to be implemented from Q3 2017 to Q2 2018. Currently, the project's implementation is delayed by over a year. The City will pay \$2.5 million in subscription costs during the period of delay, but it will not receive the intended benefits.
- From 2007 to 2012, the City acquired about 19,000 licences for an Employee Self-service solution to provide electronic payroll services to City Staff. As of January 2018, 72 per cent of these licences remained unused. The City has incurred \$543,600 in acquisition and five-year maintenance costs on these unused licences. The City could have also reduced its cost of \$1.4 million spent on printing and distribution of pay stubs from 2013 to 2017, if the Employee Self-service Solution implemented on time.

OTHER ISSUES

The report also identifies that improvement in controls are needed as the City adopts new IT solutions. One example is cloud services that are provided under a consumption-based pricing model, which means that the City will be invoiced on a pay-per-use basis.

The Auditor General, in her Phase 1 report, highlighted the importance of strengthening the Chief Information Officer's role across divisional boundaries, establishing a strategic technology roadmap and transforming the City's IT infrastructure by harmonizing and modernizing technologies. This report identifies a number of areas for improvement that can enhance the City operations through the provision of accurate IT assets data, improved monitoring and reporting on IT project implementation and software utilization, and a shift to cost effective alternate service delivery options.

CONTACT

Syed Ali, Audit Director, IT & Strategy, Auditor General's Office
Tel: 416-392-8438, Fax: 416-392-3754, E-mail: Syed.Ali@toronto.ca

SIGNATURE

Beverly Romeo-Beehler
Auditor General

ATTACHMENTS

Attachment 1: Information Technology and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management