REVIEW OF THE CITY
SAP COMPETENCY CENTRE

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TORONTO Auditor General's Office

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

The SAP Management Information System supports critical City business activities including financial, accounting, purchasing, billing, collection, payroll, real estate management and human resource processes.

The Auditor General in 2003 recommended the creation of the SAP Competency Center

The Auditor General's 2003 report entitled "SAP Financial and Human Resources/Payroll Information Systems Post Implementation Review" recommended establishing an SAP Competency Centre as part of a broader strategy to develop a long-term plan designed to expand the use of SAP.

Of the many recommendations made by the Auditor General since the establishment of the Office, the recommendation relating to the formation of an SAP Competency Centre was probably one of the most important. The intent of the Auditor General's recommendation was to address the need to:

- work with divisions to identify and prioritise the roll out of SAP modules available to City operating divisions;

- work with divisions to coordinate the implementation and integration of major information systems;

- work with divisions to identify and prioritize management information needs;

- identify best practices to improve the level of SAP information systems functionality; and

- coordinate initial training for new SAP functions.

Since the formation of the SAP Competency Centre in 2005, the Centre has fulfilled the original intent of the Auditor General's recommendation in formalizing processes and taking on responsibility to control the development and environment in which the SAP system operates.

Operating an enterprise resource system such as SAP is complex

Managing an enterprise resource system such as SAP is a complex undertaking. A competency centre increases the City's opportunity to maximize the value of the investment made in SAP by creating a focal point for expertise and management across the City.

Competency Centre brings together SAP expertise and functions as a link between City divisions	The purpose of the SAP Competency Centre is to consolidate City SAP expertise and resources in one City division in order to facilitate an efficient exchange and coordination of SAP development and training between City divisions and the Information and Technology Division.
Audit Objective	The objective of this audit was to review the adequacy and effectiveness of practices adopted by the SAP Competency Centre with a view to identifying opportunities for improvement and cost savings.
Audit recommendations will improve the effectiveness of the SAP program	Implementation of the seven recommendations included in this report will further leverage the knowledge and expertise of the SAP Competency Centre and improve the effectiveness of the City's SAP Program. These recommendations include the need to:

- ensure maximum value is received from staff members with both divisional business and SAP knowledge

- consistently use SAP best practices and methodology for SAP related projects

- formalize the process for developing and maintaining the long term SAP Work Plan

- ensure the SAP Competency Centre manages all SAP related projects

- develop and formalize service level agreements

- establish a centralized process to address and evaluate risk related to the SAP system and environment

- develop SAP Competency Centre performance measures.

BACKGROUND

City use of SAP continues to expand	SAP use in the City continues to expand. In order to manage the complexity of the system, management has implemented an oversight framework that includes an SAP Steering Committee and an SAP Integration Project Advisory Group. These groups maintain appropriate control over any expanded use of SAP.

SAP Competency Centre provides centralized expertise

The City's SAP Competency Centre centralizes related expertise and is responsible for supporting the efficient implementation, maintenance and quality of business processes and systems supported by SAP. One of the purposes of the Competency Centre is to consolidate SAP resources in the City and function as a link between City divisions and the Information Technology Division.

Consequently, the SAP Steering Committee and the SAP Integration Project Advisory Group place a great deal of reliance on the SAP Competency Centre to ensure decision-making information is complete and accurate.

Organizationally the City's SAP Competency Centre is part of the Information and Technology Division. The SAP Competency Centre consists of 28 staff members. Operating costs for the SAP Competency Centre during 2009 were $4.5 million and projected costs for 2010 are $5.9 million. The $1.5 million dollar increase is due to the future acquisition of software licences.

2010 annual operating costs expected to be $5.9 million

Projected five year capital budget for SAP projects is approximately $70 million

Implementing City SAP applications requires the combined involvement and cooperation of the SAP Competency Centre, business divisions and third party vendors. The use of SAP continues to expand and over the next five years, the City plans to invest an additional $70 million in enhancements and improvements to SAP.

Competency Centre lowers operational and technical risk associated with SAP

Operating any enterprise resource system is a complex undertaking. Typically, successful management of an enterprise resource system is not a result of a review of a specific application or technical risk in isolation. Successful management of an enterprise resource system such as SAP requires system management at the corporate level.

A competency centre lowers the risk in such areas as:

- failure to meet user requirements
- failure to integrate with other systems
- incompatibility with other information technology
- insufficient vendor support.

Creation of the SAP Competency Centre is part of a wider SAP strategy	The establishment of the SAP Competency Centre in 2005 was a result of Council's approval and endorsement of a strategic direction, governance structure and continuous service improvement framework for the SAP system.
City adopted an "SAP first" protocol	Finally, as recommended by the Auditor General, City Council adopted an "SAP first" protocol in 2004. The "SAP first" protocol requires management to investigate first whether required business needs can be met by existing resources in SAP or by expanding the use of SAP.

AUDIT OBJECTIVES, SCOPE AND METHODOLOGY

Why we conducted this audit	The Auditor General's Work Plan included a review of the City's SAP Competency Centre. The Competency Centre plays a key role in leveraging the City's investment in SAP. We selected this review based on the importance of the SAP system to the City and projected future plans and costs for expansion.
Adequacy of Competency Centre practices	The objective of this audit was to review the adequacy and effectiveness of practices used by the SAP Competency Centre in managing the SAP program and provide recommendations for improvement and cost savings.
Audit Scope	The audit scope included a review of:

- City-wide policies and standards governing SAP
- SAP management practices
- change management policies and procedures
- research studies
- best practices

Audit Methodology	Our audit methodology included the following:

- review of Council and Standing Committee reports
- review of policies, procedures and practices
- interviews with relevant City staff
- examination of relevant documents
- review of SAP best practices.

Compliance with generally accepted government auditing standards

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that provides a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

AUDIT RESULTS

1. The Role and Reporting Relationship of Divisional SAP Leads

As part of our review, we investigated best practice recommendations of leading research companies in business and technology. Leading researchers including Forester Research Inc. and Gartner both promote and recommend a centralized SAP Competency Centre where the centre provides both business and technical support. However, they also recognize that one model does not fit all organizations. The design of the competency centre should fit the organization it supports.

Operating divisions have a designated lead staff member with expertise in SAP

The City operates in a decentralized manner where support for the SAP system requires a designated SAP lead staff member in the operating division to work closely with the SAP Competency Centre. This approach evolved from the initial SAP implementation in 1999 with an Accounting Services Division lead staff member.

As the use of SAP expanded, other divisions such as Pension, Payroll and Employee Benefits, Human Resources, and Facilities Management adopted the divisional lead member approach, where the divisional SAP lead staff member represents divisional SAP business processes and interests. These individuals understand the division's business processes and have a knowledge of the SAP module supporting those business processes. Divisional lead staff serve as the business and technical analyst for SAP projects in their respective divisions.

SAP environment has evolved to the point where the existing model requires review

The City's SAP environment has evolved to the point where the existing model requires review. We identified several concerns related to the current model including the following:

- delays in SAP projects as a result of operational demands placed on SAP lead staff members
- lack of a clear division business owner for certain SAP modules
- lack of proper segregation of duties.

Each of these is explained as follows:

Delays in SAP Projects

The combined business process and SAP knowledge of divisional lead staff make them a critical resource. Their availability and expertise is essential in completing SAP projects in a timely manner. However since these individuals are accountable to divisional management they have other day-to-day responsibilities requiring their attention.

Operational demands on SAP divisional staff result in delays in SAP projects

The challenge to balance operational demands with the need to work on SAP projects has in some cases, led to the suspension and delay of SAP projects for months at a time. Examples of such situations include:

- a three month period when Accounting Services staff members are exclusively dedicated to work related to the financial year-end

- a two month period when staff members in Pension, Payroll and Employee Benefits are processing employee T-4's

- a month or more when labour settlement results and adjustments are made to SAP.

Need to Clarify Ownership of SAP Modules

The SAP system consists of distinct functional modules serving various business functions in the City. Each module performs business tasks, and where applicable exchanges information with other SAP modules.

It is difficult to identify an owner of a particular SAP module

In the past, identifying an owner responsible for the data and functions performed by a particular SAP module was straightforward. For example, it made logical sense for Accounting Services to be the owner of the SAP modules for accounting data and functions.

However, as SAP expanded in certain cases a particular module may serve more than one division. For example, the SAP Plant Maintenance module serves several operating divisions. Difficulties arise in meeting the needs of multiple divisional owners. Adjustments made to the SAP Plant Maintenance module to accommodate one divisional user, may conflict with another division's needs.

The Plant Maintenance module provides software for all maintenance activities performed within the City. Consistent with the approach established at the time the original SAP system was implemented, Facilities Management became the SAP lead and owner for the Plant Maintenance module.

Consequently, the design of the module reflects the business needs of Facilities Management. Because other divisions such as Parks, Forestry and Recreation use the same module, the primary responsibility for adjustments made to the plant maintenance module become less clear. Although there may be common data elements used by both divisions, Parks, Forestry and Recreation have data and functional requirements to support the division's business processes that are different from Facilities Management.

Identifying the responsible owner and responsibilities is important for maintaining the integrity of information and ensuring ongoing software development occurs in a cost effective manner.

Lack of proper segregation of duties

Various divisional business users outside the SAP Competency Centre are assigned user administration privileges and sensitive maintenance functions. These include transaction codes ordinarily available only to staff in the SAP Competency Centre. This has been an on-going concern identified by the City's external auditor and implementation of corrective action remains outstanding.

Recommendation:

1. The City Manager, in consultation with the Chief Information Officer, review the current reporting structure and relationships between divisional SAP representatives and the Competency Centre with a view to:

    a. minimizing delays in the completion of SAP projects

    b. ensuring that the ownership of certain SAP modules is clarified and workable

    c. ensuring that there is an appropriate segregation of duties between SAP divisional staff and the SAP Competency Centre.

2. SAP Best Practice Methodology Should Be Consistently Followed

No City-wide requirement to follow SAP best practices

The SAP Competency Centre follows SAP best practices and methods for projects managed by the Centre. However, other City divisions may not follow SAP best practices and methods for projects they manage.

Currently, there is no City-wide requirement outside of the SAP Competency Centre to adhere to SAP best practices and methods when developing and managing an SAP project.

Although the SAP Competency Centre has no authority to require adherence to SAP best practices or methods, the Competency Centre encourages those responsible for managing SAP projects to follow SAP best practices.

Recommendation:

2. The City Manager in consultation with the Chief Information Officer formalize a policy to require adherence to SAP best practices for all City-wide SAP projects, and implement quality assurance measures to ensure such practices are followed.

3. Process for Preparing the SAP Integrated Work Plan Needs to Be Formalized

The City's SAP Program prioritizes SAP project initiatives. A critical component in managing the SAP program is the Integrated SAP Work Plan. The SAP Steering Committee reviews and ratifies the SAP Work Plan and monitors ongoing progress.

The SAP Work Plan is an important component in managing the timelines and implementation schedule of SAP initiatives.

There are many divisional participants involved in finalizing the SAP work plan as well as Information and Technology Division staff. The Integrated Work Plan Advisory Group and SAP Steering Committee are also involved in developing the SAP work plan. Because of the expertise of the Competency Centre staff, these groups serve an important role in establishing a useful integrated work plan.

Process to prepare the SAP Work Plan has not been formally established

Activities related to the development of the SAP work plan are not formally established. The involvement and effort of the SAP Competency Centre in preparation of the SAP Work Plan is in large part due to the effort of the Centre's management. Without a formally established mandate, future changes in Competency Centre management could have a detrimental effect on the efficiency, effectiveness and value of Competency Centre activities.

The SAP environment is complex and projects are often interdependent. In some cases, consolidating a number of improvement requests into a single project is more efficient than addressing them on a case-by-case basis.

Formalizing the process for developing the SAP plan will leverage Competency Centre staff expertise and ensure the formulation of a meaningful and workable SAP Work Plan. Such a process should clearly specify the role of the SAP Competency Centre and that of other participants.

4. Oversight of SAP Related Projects Need to Be Strengthened

Project managers trained and skilled in SAP project methodology should manage SAP-related projects. SAP Competency Centre staff members are familiar with related best practices and methods and are therefore in a unique position to ensure projects comply with appropriate guidelines and best practices.

Managing projects in accordance with these guidelines and best practices provides reasonable assurance of completing projects on time, within budget and consistent with stated business objectives.

Added risk when project managers have limited knowledge of SAP best practices and methods

Limited resources available in the SAP Competency Centre to manage SAP related projects requires division's to acquire third party services to manage SAP related projects. In these situations, divisional management provides oversight over consultants hired to manage implementation of the SAP related project.

The City takes on added risk when project managers with limited knowledge of SAP best practices and methods oversee SAP related projects. The City should leverage the knowledge and expertise of SAP Competency Centre staff members. Management should take steps to strengthen the Centre's oversight role over SAP project managers to ensure those hired by divisions adhere to SAP best practices.

5. SAP Competency Centre Service Level Agreements

Service level agreements define service expectations

A service level agreement is a contract between the service provider and divisional users. Service level agreements define expected services and service levels. The SAP Competency Centre provides a number of SAP system related services to divisions.

Although the Competency Centre is meeting service level expectations, Service Level Agreements currently under development between operating divisions and the Information Technology Division do not include SAP Competency Centre service level expectations.

Except for one agency, service level agreements do not exist

With the exception of one service level agreement with the Toronto Police Services, there are no formal service level agreements between the SAP Competency Centre and the divisional management of a specific SAP business function. Although such agreements do not prevent delays or poor quality of service, they do provide a framework for establishing performance expectations.

Recommendation:

5. The Chief Information Officer include SAP Competency Centre service level expectations in formal service level agreements currently being prepared between operating divisions and the Information and Technology Division.

6. A Centralized SAP Risk Management Process

Centralizing the identification and management of SAP related issues and risks would improve overall risk management

Responsibility for identifying and managing SAP project related issues and risks rests with individual operational divisions. In general, management of SAP related issues and risk is done in isolation. Centralizing SAP issues and a risk management program would help in identifying and managing SAP risks and problems and ensure transparency and consistency in managing activities.

For example, implementation and maintenance of a central issue and risk management log would allow both divisional managers relying on SAP and SAP Competency Centre staff members to identify and manage risk and trends.

Identifying and managing SAP related issues and risks allows for common items to be addressed at one time and in a consolidated manner.

Recommendation:

6. The City Manager establish a process for maintaining a single repository for SAP related issues and risks, and the Chief Information Officer establish a formal process for collecting, addressing and reporting on such risks.

7. Performance Measures for the SAP Competency Centre

Performance measures do not exist

SAP Competency Centre performance indicators and standards related to efficiency and effectiveness do not exist. Key performance indicators and standards provide a means for managing resources efficiently and effectively. Performance measures are also useful in identifying deviations from acceptable performance standards in a timely manner.

Examples of relevant SAP Competency Centre performance measures and standards might include:

- Number of requests for management reports
- Time required to respond to management report requests
- Time required to complete a request for system maintenance
- Time required to process security access requests.

Recommendation:

7. The Chief Information Officer develop SAP Competency Centre performance measures and standards. Such measures and standards should monitor ongoing performance.

CONCLUSION

The objective of this audit was to review the adequacy and effectiveness of practices used by the SAP Competency Centre in managing the SAP Program with a view to identifying opportunities for improvement and cost savings.

Our review indicated that since the formation of the SAP Competency Centre in 2005, the Centre is functioning as intended and has fulfilled the original intent of the Auditor General's recommendation in formalizing processes and taking on responsibility to control the development and environment in which the SAP system operates.

The City's SAP environment has evolved to a point where a review of the current approach to managing SAP assets would help in adapting to ongoing changes in the information and technology environment.

Implementation of the seven recommendations in this report will further strengthen the administration and management of SAP related projects.