

**Report to  
Rapport au:**

**Information Technology Sub-Committee  
Sous-comité de la technologie de l'information  
27 April 2017 / 27 avril 2017**

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**Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE      File Number: ACS2017-CSD-ITS-0001**

**SUBJECT: Information Technology Services 2017 Work Plan**

**OBJET: Plan de travail de 2017 des Services de technologie de l'information**

#### **REPORT RECOMMENDATIONS**

**That the Information Technology Sub-Committee receive for information the following report summarizing the Information Technology Services 2017 work plan.**

#### **RECOMMANDATIONS DU RAPPORT**

**Que le Sous-comité de la technologie de l'information prenne connaissance du présent rapport, qui résume le plan de travail de 2017 des Services de technologie de l'information.**

## **EXECUTIVE SUMMARY**

Information Technology Services (ITS) is a core back-office function with the City of Ottawa. In addition to providing services to the entire City of Ottawa corporation, ITS provides services as well to Ottawa Public Library and Ottawa Public Health, supporting 19,000 full- and part-time staff. Highlights of the ITS work plan for 2017 are contained in this report.

There are three primary drivers of the ITS work plan: ensuring the maintenance, security and required upgrades to the City's hardware and software domains; providing frontline support to employees and business lines; and responding to the technology implications of new business needs.

Work in 2017 will include the maintenance and necessary upgrades to the more than 1,000 servers and 170+ applications supported by ITS. This includes a focus on assessing the City's SAP roadmap and several improvements to IT security tools and processes. Technical support for internal users is provided through a call centre, online portal, service centre and mobile options. Recent and planned enhancements include 24/7 call centre support, a new service centre at City Hall, and online chat options.

The Technology Modernization, Technology Project Management and Technology Solutions branches provide support to business areas to ensure that technology solutions are identified and implemented for the new and changing business needs of the City.

A number of operational changes including staff training, development, succession planning, resource management, intake and case planning further improve the capacity of ITS to successfully implement this work plan.

The work plan presented will be achieved within current budget allocations.

## **RÉSUMÉ**

Les Services de technologie de l'information (STI) de la Ville d'Ottawa jouent un rôle d'appui. Leurs services s'adressent non seulement à la municipalité, mais aussi à la Bibliothèque publique d'Ottawa et à Santé publique Ottawa, appuyant ainsi 19 000 employés à temps plein et à temps partiel. Ce rapport présente les points saillants de leur plan de travail de 2017.

Ce plan de travail s'articule autour de trois grands axes : assurer la maintenance, la sécurité et la mise à jour du matériel et des domaines de logiciels de la Ville; offrir du

soutien de première ligne aux employés et aux divers secteurs d'activités; et déterminer les implications technologiques liées aux nouveaux besoins institutionnels.

En 2017, les STI devront effectuer la maintenance et la mise à jour de 1 000 serveurs et plus de 170 applications. Ils devront notamment évaluer la feuille de route du système SAP de la Ville et les différentes améliorations aux outils de sécurité et processus informatiques. Ils continueront d'offrir un soutien technique aux utilisateurs par l'entremise d'un centre d'appels, d'un portail, d'un centre de services et d'options mobiles. Des améliorations ont été apportées récemment, et d'autres sont prévues : un service offert 24 heures sur 24, sept jours sur sept, un nouveau centre de services à l'hôtel de ville et un service de clavardage en ligne.

Les directions de la modernisation technologique, de la gestion de projets technologiques et des solutions technologiques assistent les secteurs d'activités en s'assurant que les solutions technologiques sont définies et mises en œuvre de façon à répondre aux besoins opérationnels nouveaux et évolutifs de la Ville.

De nombreux changements opérationnels (formation, perfectionnement, planification de la relève, gestion des ressources, orientation, prise en charge) permettront aux STI de mettre en œuvre ce plan de travail, qui sera réalisé au moyen des ressources budgétaires existantes.

## **BACKGROUND**

Information Technology Services (ITS) is a core back-office function with the City of Ottawa. ITS is the technology service provider for the entire City of Ottawa corporation as well as Ottawa Public Library and Ottawa Public Health, supporting 19,000 full- and part-time staff. Highlights of the ITS work plan for 2017 are contained in this report.

## **DISCUSSION**

There are three primary drivers of the ITS work plan: ensuring the maintenance, security and required upgrades to the City's hardware and software domains; providing frontline support to employees and business lines; and responding to the technology implications of new business needs.

### **Network Operations**

The work of maintaining and upgrading the City's core systems will involve a number of initiatives in 2017:

- Ensuring software updates are implemented to maintain over 1,000 servers supported by ITS.
- Implementing System Center Configuration Manager (SCCM) and Operations Manager (SCOM) tools to further automate the patching process and reduce errors.
- Creating and maintaining a segregated network architecture of network equipment, as well as various control and access measures required to meet the security standards mandated by the Payment Card Industry (PCI) Council governing credit card processing.
- Supporting the City's two primary data centres including plans to consolidate and create a disaster recovery and fail-over secondary site, install a secondary Uninterruptible Power Supply (UPS) at one of the primary data centers, and implement new tools to monitor network capacity utilization and support performance tuning and troubleshooting.
- Having a dynamic directory that maps relationships between servers, databases, storage devices, applications, software systems, ITS support staff and departments, is key to understanding how technology updates and downtime can have an effect on the end users. The existing architecture built over a long period of time lacks such a comprehensive catalogue. In 2017, ITS expects to make significant progress in capturing this information and automating future updates.
- Replacing the Windows Operation System which reaches end of life in 2018. This is a multi-year initiative that involves the upgrade of approximately 700 Windows servers while minimizing downtime to users who depend on the data running on these windows servers for their daily tasks.
- Upgrading Active Directory (AD) which manages computer and user features, enables access to software and other back-end systems, controls log-in, authentication and access permissions.
- Maintaining and planning for the upgrade of the Microsoft Exchange server that manages the 22,000+ email accounts and processes approximately 45,000 external and 185,000 internal City emails each day.
- Standardizing the Linux platform within the City. Linux is an operating system that is used to host/serve software and websites to the public.
- Maintaining and upgrading the VMWare software used to manage approximately 900 virtual servers used by both City operations and the public.

### **Applications Management**

ITS is responsible for the support, maintenance and development of enterprise applications and more than 170 business applications. These applications provide the

tools for staff to complete their day-to-day activities. A number of enterprise systems are nearing end-of-life and require replacement or significant upgrade. These include:

- CSM/Lagan is the system used to manage the City's 311 operations. In 2016, the application handled more than 300,000 service requests and 100,000 inquiries through the phone, counter and web channels. In 2017, preliminary work will begin to find a replacement as the current solution approaches end-of-life.
- MAP is used by more than 1,100 City staff supporting the complete cycle of land development, zoning, building permits, inspections, bylaw enforcement, residential solid waste work flow and other functions. A project has been initiated to replace the Land Management functionality of the MAP legacy system to support the business processes for planning and building code services.
- Migration of the remaining business functions in the legacy MAP application to in-house systems will be achieved through a series of projects.
- CLASS is the application that manages recreational program registration and facilities booking for residents. The CLASS application manages more than \$60M annually, 229,000 registrations, 244,000 facility bookings and 850,000 client data accounts. The project to replace this platform with a new system is underway with an expected implementation timeline of Q1 2018.
- GIS (Geographic Information Systems) provides the underlying spatial data for land development, addressing for permits and licensing, zoning, 311 call locations and many other business functions. It also provides tools such as geoOttawa, which is used by residents of Ottawa, community associations and businesses. geoOttawa is undergoing an upgrade to improve functionality and better support mobile users.
- The City's existing electronic records management system (BIMS, or Business Information Management System) needs to be replaced to provide an improved technology solution for the management of the City's Official Business Records. In 2017, work will continue to identify a solution to replace BIMS with a more modern solution.

Other major systems that ITS provides maintenance and support for include:

- SERVIS (Social Eligibility Reporting and Vendor Information System) supports the Community and Social Services department to manage the day-to-day activities of the five service centres providing social assistance services.
- Aquacis and VTAX that support the City's water and tax billing. These integrated systems support the management of more than 230,000 external clients through the issuance of water and tax bills and management of accounts.

- Open data initiatives are underway to implement the Open311 web services standard which will allow third parties to integrate with the City's 311/CSM system. Spatial/GIS services will also be extended to the public through Open Data which will allow for development of applications for the public.

## **SAP Solutions**

SAP is the City's integrated software solution used to manage an extensive range of business processes including financials, materials management, procurement, sales distribution, real estate management, plant maintenance, project systems, training and events, as well as human resources and payroll.

The City's SAP platform enables common data and business processes to be shared to increase efficiency, and it improves decision-making by providing total-picture information. The SAP Solutions Branch handles more than 6,500 service calls annually to support more than 1,800 users of the core SAP solution, and approximately 8,000 users of Employee and Manager Self Service via the City's intranet. Support for SAP includes system configuration changes, development or modification of reports, implementation of annual technical and vendor upgrades.

A number of initiatives are underway to expand integration with SAP. These include: the Hastus system that will integrate employee data, scheduling and pay information for OC Transpo; a mobile solution for time entry for field staff in the Recreation, Cultural and Facilities Services department; an expanded maintenance management solution using mobile devices for work scheduling for the Public Works and Environmental Services department; a mobile solution for inventory tracking for OC Transpo; and integration with Transit fare gates and the new water billing system.

As part of a longer term vision, ITS is working with other departments to develop an SAP Roadmap to ensure that the SAP solution is positioned to support the City's growth and business needs.

## **Technology Security**

Technology Security is a critical function for ITS. A number of initiatives are underway to expand and improve the City's technology security:

- Implementation of a managed security service and toolset to improve threat intelligence and cyber threat detection, minimize security risk and allow ITS to respond in a timely manner.

- Implementation of Endpoint Detection and Response (EDR) to monitor and isolate cyber threats on end-points (i.e. laptops and computers). This tool improves our ability to find the root cause of a cyber incident, radically reduce the response time, isolates infected systems and significantly reduces the need for a large system shutdown.
- Reducing risk of data breaches from internal or unintended error by refreshing the processes tools for administrative access to systems.
- Helping clients identify and manage technology risks by improving tools to assess technology risks of new solutions, implementing a new service to help business areas develop more consistent technology continuity plans and pursuing an aggressive awareness and training program.

In response to the Auditor General's IT audit, significant resources are being directed towards finalizing a technology risk management framework and technology security governance; documenting technology risks and maintaining an active technology risk register; policy and standard updates; training; and refining existing incident handling processes.

### **Frontline Services**

A core function for ITS is the provision of service desk support to all technology users in the City. This multi-channel service receives more than 100,000 requests annually with an approximate 90% internal client satisfaction rating. 24x7 live agent support was recently added to improve access to service after hours. ITS is planning to implement a 'Live Agent' chat capability to allow staff to request support using instant messaging as well.

The IT Service Centre offers a convenient "genius bar" style walk-up service counter at 100 Constellation Drive, serving more than 6,000 clients annually. Skilled staff assist with a variety of support needs, including troubleshooting equipment, connectivity issues, application support, loaner devices, and more. This service is also available in a mobile format which provides a "pop-up" IT Service Centre at facilities and events across the City. In 2017, ITS will be launching a new permanent counter at City Hall.

Around 20,000 service requests were made through the ITS online portal in 2016. Improvements planned for 2017 include a simplified user interface, quick self-help videos for popular support topics, and streamlining hardware and software ordering.

The ITS Computer Lifecycle Program refreshes the 10,000+ desktop and laptop computers based on industry standard device lifecycle practices. This includes replacement of 2,000 computers annually in a 5-year replacement plan.

The ITS Mobility team provides support for more than 4,000 cellular, smartphone and tablet devices across all City departments. In 2017, ITS will begin an initiative to refresh all cellphones over the next 3 years. This refresh will expand our cell phone environment to include iOS and Android platforms. These platforms have a rich app library and will create many opportunities for innovation. Android and iOS will be considered as a cost effective alternative when replacing aging handhelds and other rugged equipment used by field and mobile workers.

ITS is responsible for the provisioning of all “Internet of Things” or Machine-to-Machine (M2M) communications technology, which is used in 1,300+ M2M points across the City including digital signage, public transit vehicles and more.

In response to demand for live streaming of meetings and public events, ITS will launch an internal and resident-facing livestreaming service. This service will provide the City and elected officials the ability to broadcast public information sessions and internal staff sessions through streaming services such as Facebook Live and YouTube with a high quality HD quality audio / visual experience.

Many seasonal and part-time employees lack network access. ITS will expand network access to 3,000+ such employees allowing them to access online Employee Self Services tools, time and leave management, internal communications and more.

There is a growing need for new collaboration technologies including video conferencing (30+ boardrooms), instant messaging (Jabber), and e-collaboration tools. In 2017, ITS will expand upon this investment by adding an additional 15 A/V enabled boardrooms and providing a stronger integration with smartphones, laptops and tablets. Video conferencing with external partners will be made possible by investments in A/V infrastructure that will allow the City to collaborate more easily with clients and partner organizations.

### **Technology Modernization**

One of the key functions of the Technology Modernization group is to identify opportunities for software and hardware modernization across the corporation.

Some key activities within this area include:

- Upgrade of Microsoft Office suite from version 2007 to Office 2016.
- Outreach to the technology vendor community to engage in vendor road mapping sessions to keep current on upcoming technologies and solutions.
- Development of a Cloud Computing Framework that can be used as a guideline to help City staff make informed decisions on the use of cloud services and how to manage any related risks.
- Improving options to allow users to securely access internal shared electronic files and folders from non-City of Ottawa devices (tablets, smartphones, laptops).
- Providing modern Wi-Fi infrastructure to the main staff campuses to support our more mobile workforce.
- Creation of a consolidated Architecture Testing Lab that will mimic production and allow new technical solutions to be thoroughly tested before deployment.

### **Technology Project Management**

The Technology Project Management Branch provides a pool of technical project resources to lead internal ITS or client initiatives with large technology components. Resources are knowledgeable and skilled in industry best practices and project management methodologies.

In addition to many of the enterprise network and application initiatives already identified, project management resources are also supporting:

- A series of technology projects required to support the upcoming Municipal Election.
- Implementation of an Electronic Medical Records (EMR) solution for Ottawa Public Health.
- Lifecycle replacement of the system used for legislated reporting and water and sewer billing.
- Implementation of an electronic health and medication administration system for Long Term Care.
- Lifecycle replacement of the agenda builder and meeting management system used for Council and Committee agendas.
- Housing Collaboration system - a collaborative project between the City and 7 other municipalities in Ontario to implement a multi-channel frontline web application for housing services that will provide secure and easy access to housing providers, staff and applicant waitlists.
- Implementing a Road Asset management system that will support transportation asset management practices, risk analysis and prioritization, forecasting and programming.

## **Technology Solutions**

When initiating IT projects, the Technology Solutions team works closely with departments to identify solution options to support their business needs. Special consideration is given to leveraging existing solutions, exploring open source offerings, and identifying opportunities for synergies by partnering with other departments. The team engages with the vendor community, local innovators and software developer groups in order to create new opportunities and access a unique pool of ideas and skill sets.

In addition to supporting many of the projects already identified, the following initiatives are currently underway or scheduled for options assessments and kick-off in 2017:

- Supporting the Digital Services Strategy through technical collaboration with the Service Innovation and Performance department.
- Implementing a software solution that will assist with detailed visualizations and space planning for corporate accommodations planning.
- Exploring barcode scanning solutions in support of multiple departments who are looking to implement new and replacement barcoding systems.
- Identifying a data storage and sharing solution to support Cultural Services' annual funding programs.
- Documenting requirements for the development of an in-house system to support garbage collection and inventory management
- Identifying a solution to replace the system used by Ottawa Public Health to manage their field work and reporting. Identifying mobile application options to track immunizations.
- Supporting a number of pilot initiatives through the City's Innovation Pilot Program. Examples include testing an application which aims to prevent texting and driving; and piloting a 'wandering and alert' technology with Community & Social Services.

## **Key Operational Changes**

In order to manage a growing technology footprint and ensure clients are able to receive cost-effective, timely and high-quality service, a number of operational initiatives are being put in place throughout 2017 to unlock capacity within ITS. These include:

### **Technical Training**

The nature of information technology work demands an on-going focus on technical training to keep internal skills current. ITS has adopted a leading-edge training product,

Pluralsight, that is also used by major technology firms and offers 6,000+ courses with 35+ certifications. In just two months, ITS staff have benefited from 500+ hours of training in 100+ different courses. This effort is not only expected to yield positive employee satisfaction but will build an internal talent pool that can offset some professional services costs, as well as quickly respond to new technology needs.

### **In-House Development**

The staff in ITS offer a wide range of skills and expertise when it comes to developing and supporting technical solutions. When departments are seeking a new technology to support a particular business need, the City often looks externally for ready-made solutions or specialized configurations to meet the complexities of the organization. The concept of building something in-house has seen less consideration in recent years, but is an untapped option that ITS will be re-introducing into the early solutions analysis phase of projects.

### **Resource Management**

In an environment where demand is constantly exceeding supply, it is critical for ITS management to have a strong handle on resource utilization. An ITS-wide deployment of a resource management tool has already taken place that would allow balancing available capacity with demand, and encourage fluidity within ITS for resource sharing.

### **Succession Planning**

A high number of ITS staff is eligible to retire in the next 24 months. This provides an opportunity to retool ITS with new skills. The goal is to create job shadowing and internal training programs for existing ITS staff so that future vacancies can be filled within the current talent pool.

### **Consultant Review**

A stringent process has been put into place to ensure external consulting support is kept to a minimum. However, the lack of niche skills in-house and/or the volume and urgency of technology project requests can sometimes make the use of professional services unavoidable. One ongoing tactic is to focus the external expertise on supporting legacy applications, while allowing staff to support new technologies.

### **Intake Process**

Like many information technology groups in other large organizations, ITS has struggled to manage an intake process that is aligned with business needs. A fundamental shift

has taken place, where ITS is now embedded with the various client groups so that planning on both ends is synchronized.

Another critical change is the idea that not all new technology requests should receive the same level of due diligence. This means a higher level of governance is only applied to big projects that are multi-year and high-dollar value.

ITS and our partner departments have experienced an immediate benefit as the process change has unlocked capacity with many projects underway.

### **New IT Services Portal**

ITS strives to streamline the process for accessing IT services and support for everyday tasks. A new ITS portal has been put in place that has several improved functionalities including intelligent search query, video FAQs and many self-serve options.

### **Agile Project Management**

ITS is reviewing the existing project management lifecycle methodologies to make our processes more flexible and client-focused with a goal of creating business value.

### **Case Tracking**

ITS uses Marval as its case management solution. An increased focus on the use of Marval, as well as data mining trends would support ITS management and supervisors in resource allocation, as well as automation of tasks for frequent inquiries.

### **Data Centre Consolidation**

An analysis is underway to rationalize the current footprint of data centres. This exercise is expected to focus ITS efforts in maintaining a single on premise data centre, while potentially utilizing third party data centres in Canada to create redundancies and higher availability. This work is expected to have a direct positive impact on client applications.

### **RURAL IMPLICATIONS**

There are no rural implications for this report.

### **CONSULTATION**

No public consultation was conducted for this report.

**COMMENTS BY THE WARD COUNCILLOR(S)**

Not applicable.

**ADVISORY COMMITTEE(S) COMMENTS**

**Not applicable.**

**LEGAL IMPLICATIONS**

There are no legal impediments to receiving the information in this report.

**RISK MANAGEMENT IMPLICATIONS**

The ITS work plan includes a comprehensive set of actions and initiatives to mitigate technology risks to the City.

**ASSET MANAGEMENT IMPLICATIONS**

Not applicable.

**FINANCIAL IMPLICATIONS**

There are no financial implications associated with this report.

**ACCESSIBILITY IMPACTS**

All ITS projects and initiatives include an assessment of accessibility requirements. Accessible criteria, features and functionality are included in all public facing technologies to ensure compliance with AODA requirements.

**ENVIRONMENTAL IMPLICATIONS**

Not applicable.

**TERM OF COUNCIL PRIORITIES**

A number of the initiatives and projects identified in the ITS work plan are directly linked to Council priorities.

**DISPOSITION**

IT Services will follow-up on direction received as part of consideration of this report.