



Office of the Superintendent of  
Financial Institutions Canada

Bureau du surintendant des  
institutions financières Canada

**Report  
on**

**Infrastructure Technology Services  
Planning Activities and Processes**

**January 28, 2009**



**Canada**

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## Background

An audit of the planning activities and processes for Infrastructure Technology Services (**ITS**) of Information Management /Information Technology (**IM/IT**) was approved by the Audit Committee and the Superintendent for inclusion in OSFI's 2007-08- Internal Audit Plan.

### *Introduction to ITS Planning*

The Information Management /Information Technology Group has four groups reporting to the Senior Director, IM/IT, as follows:

- Infrastructure Technology Services (**ITS**)
- Project Management Group (**PMG**)
- Information Systems Operations and Architecture (**ISO**)
- Information Management (**IM**)

The Infrastructure Technology Services objectives are:

- To maintain and operate OSFI's information technology infrastructure and services in support of OSFI operations, minimizing downtime and facilitating storage of, and access to, OSFI's information assets in a cost-effective manner
- To conduct and support the evolution of OSFI's information systems to meet changing needs and keep pace with technological change
- To establish and maintain a secure network environment to safeguard OSFI information holdings in accordance with established Government policy and the sensitivity of the information.

Functional activities address Network Security Services, Network Services, System Services, Client Service and Data Base Architecture, *Attachment 2- ITS - Products & Services*, through:

- Provision of technical infrastructure
- Controlling promotion to production
- Management of service provider (for communications)
- Service/patch management
- Disaster Recovery Planning
- Technology asset management

The ITS group maintains OSFI's technical infrastructure and Information Technology (**IT**) operations supporting some 140 User applications across the Office. IT services operate on a 24 / 7 basis supporting ongoing supervision and regulatory work through data networks including Internet and Remote access and Local and Wide Networks. In addition, ITS supports other IM/IT divisions in system development, changes to existing User applications, and User IT support services.

*Infrastructure Technology Services planning*

IM/IT planning is a key enabling tool of OSFI Corporate and Business planning through providing strategic and operational IT support. Due to the scope and complexity of OSFI's IT services and the level of system development, ITS planning involves developing multi-year plans for phase in of new technology and upgrades of existing infrastructure and operations and supporting existing and new user applications (systems).

With input and consultation from the IM/IT divisions as well the Security and Finance divisions, ITS develops multi-year plans covering areas such as Network Security Services, Network Services, System Services, Client Services and Data Base Architecture. *Attachment 3 – IM/IT Planning Structure* illustrates the relationships and interaction in developing their ITS plan.

Information needed for planning purposes flows from Sector / Division (user) IT service needs through Information Systems Operations and Project Development IM/IT divisions. User information on volumes (number of users and access, process and storage requirements), changes to existing applications, and to new application is gathered and translated into specific infrastructure and operation requirements.

*Terms used*

COBIT	Control Objectives for Information and related Technology (IT management control framework)
COSO	Committee Of Sponsoring Organizations of Treadway Commission framework (control framework)
ITIL	Information Technology Infrastructure Library, UK (de facto standards, best practices for IT service management)
Users (Applications)	Supervision, Regulation and Corporate Services Sectors, Pensions Division and Office of the Actuary (applications)
OLA	Operational Level Agreement is an agreement between IM/IT areas
SLA	Service Level Agreement is a written agreement between Users (Sectors / Divisions) and IM/IT
ERM	Enterprise Risk Management
MITS	Management of Information Technology Security (Government of Canada Security for IT Security)

## Objectives and Scope

### *Objectives*

The objectives of the audit were to:

- *Review the ITS Planning activities and processes (framework) with respect to governance & accountability, objective setting, operating environment, risk management, planning processes and communications and its integration with IM/IT overall planning; and*
- *Identify potential areas for improvement in ITS Planning activities and processes, if any*

### *Providing assurance to the Superintendent*

In order to manage its work in a complex and rapidly changing environment, OSFI develops and puts in place specialized policies, guidance and processes. In general, these are called frameworks. These frameworks provide assurance to the Superintendent and senior management that the nature and scope of work required to carry out OSFI's activities is well defined and that consistency and quality of the work is maintained.

Such frameworks are essential to the Superintendent and the Audit Committee in being able to fulfil their responsibilities under the Treasury Board Policy for Internal Audit regarding OSFI's governance, risk and control processes. Under the Policy, Audit & Consulting Services is to conduct assurance reviews and audits of OSFI's operations, reporting on the adequacy of OSFI's frameworks and their application in carrying out OSFI's activities. This Audit of Infrastructure Technology Services Planning framework is such an assurance report.

### *Scope*

The audit covers ITS planning activities, processes and tools for OSFI's 2008-09 planning period as well improvements for the 2009-10 planning period.

Matters outside of the scope of this audit are:

- A review of IM/IT and the other IM/IT divisions detailed operations plans.
- An assessment of the degree to which the ITS plans are being applied, except for a walkthrough of operation plans in support of the ITS plans, activities and processes.

The audit was conducted on a collaborative basis, and included information gathering in the other IM/IT groups and alignment of ITS plans with overall IM/IT plans, and sharing observations and assessments throughout the audit.

### **Audit evaluation criteria**

The audit criteria or control criteria set out the elements and related components which serve as the basis for assessing ITS planning activities and processes as set out in *Appendix 1 – Audit Evaluation Criteria*. These criteria were drawn from internationally recognized management standards: COBIT (Control Objectives for Information and related Technology), COSO (Committee Of Sponsoring Organizations of Treadway Commission) and ITIL (IT Infrastructure Library, UK) as adapted to OSFI's environment and in consultation with the Director of ITS and the Senior Director of IM/IT.

The audit criteria and the planning risks were accepted by the Senior Director of IM/IT as the basis for assessing and reporting on the ITS planning framework.

### **Audit Approach**

The audit was conducted on a collaborative basis, and included information gathering with the other IM/IT groups and alignment of ITS plans with overall IM/IT plans, and sharing observations and assessments throughout the review.

The ITS planning framework audit work included:

- A review of ITS planning activities, processes and guidance, tools, input & output documents, the resulting plan and its incorporation into the IM/IT overall plan.
- A review of information / input *from* the other IM/IT divisions in preparing the ITS plan and information / outputs provided *to* the IM/IT divisions.
- Interviews with those involved in developing ITS plans. Interviews were held with IM/IT managers, including but not limited to:
  - Assistant Superintendent, Corporate Services
  - Senior Director, IM/IT
  - Directors / Manager of ITS, ISO, IM and PMG
  - Director Security
  - Other OSFI Managers, as appropriate
- An identification and application of comparable practices and methodologies such as COBIT and related IT planning methodologies.

## Observations and Recommendations

### Overview

The audit covers Infrastructure Technology Services planning activities, processes and tools for OSFI's 2008-09 planning period as well improvements for the 2009-10 planning period.

As a collaborative audit our work involved discussions with the IM/ IT management on ITS and their planning activities and processes and sharing views on improving planning. We identified key areas where improvements are needed in ITS planning. These improvements require continued pro-active ITS planning efforts and the integration of ITS planning within the IM/IT and Users IT planning. The areas are:

- Determining IT infrastructure and operation requirements in new applications and changes to existing applications
- Gathering information on User IT services for ITS planning purposes

For each evaluation criteria drawn from internationally recognized management COBIT, COSO and ITIL standards as adapted to OSFI's environment, refer to Attachment 1, where we provide our observations and recommendations.

Evaluation Criteria Elements / Components	Observations & Recommendations
<p><b>Governance and Accountability</b></p> <ul style="list-style-type: none"> <li>▪ <i>Responsibilities and the accountability &amp; reporting</i></li> <li>▪ <i>Management oversight, review &amp; monitoring of ITS plans</i></li> <li>▪ <i>Planning responsibility and accountability</i></li> </ul> <p><b>Recommendations</b> Establish the role of ITS in determining IT infrastructure and operation requirements in new applications and changes to existing applications in order to facilitate ITS planning</p>	<p>ITS follows an <b>ITIL</b> (IT Infrastructure Library, UK) structured methodology for planning and managing operations such as full lifecycle asset management and maintenance of vendor agreements and of renewals and upgrades. Infrastructure and Technology Services (<b>ITS</b>) IT infrastructure and operations planning is reviewed and approved within the Information Management/Information Technology (<b>IM/IT</b>) envelope.</p> <p>The IM/IT Division (Infrastructure Technology Services, Information Systems Operations and Architecture, Project Management Group and Information Management) respective roles and responsibilities are generally understood. With a recent reorganization, IM/IT is reviewing the role of the IM/IT Divisions in system development and providing IT services across the Office and is establishing Operation Level Agreements within the Group. We support this important initiative in strengthening IM/IT planning and its alignment with User IT service needs.</p> <p>Due to IT planning challenges in the Office, ITS is not in all cases</p>

Evaluation Criteria Elements / Components	Observations & Recommendations
	<p>aware and informed of changes in existing and new User<sup>1</sup> applications and as such ITS plans for IT architecture improvements or upgrades do not reflect associated changes. For example, the timing of major system development IT upgrades is not always formally approved or incorporated into ITS planning. ITS involvement in determining IT infrastructure, operations and support requirements in new applications and changes to existing applications is integral to ITS planning. The role and degree of ITS involvement in existing and new applications needs to be established to facilitate ITS multi-year planning, consistent with its responsibilities and accountabilities in determining IT infrastructure and operation requirements.</p>
<p><b>Objective Setting</b></p> <ul style="list-style-type: none"> <li>▪ <i>ITS's objectives and priorities aligned with IM/IT</i></li> <li>▪ <i>ITS monitoring and performance</i></li> <li>▪ <i>Cascade to staff and across IM/IT divisions.</i></li> </ul> <p><b>Recommendations</b> Establish the role of ITS in determining IT infrastructure and operation requirements in new applications and changes to existing applications in order to facilitate ITS planning</p>	<p>As set out in Governance and Accountabilities, ITS is a partner in the planning and provisioning of IM/IT services across the Office. In doing so ITS maintains detailed multi-year plans, supported through the identification and assessment of existing IT infrastructure and operational requirements (e.g. migration of systems versions, process mapping) and of capacity requirements.</p> <p>However, ITS is not fully involved in determining IT infrastructure, operations and support requirements resulting from changes in existing small and large applications and in new applications. A recent benchmarking study indicates that system development processes do not fully take into account the impact of ongoing maintenance and support costs in providing IT services. As such, ITS planning is constrained in its ability to establish objectives, priorities and plans in order to:</p> <ul style="list-style-type: none"> <li>▪ Maintain and improve service level management within resources provided</li> <li>▪ Manage architecture discipline in operations and implementation of new systems</li> <li>▪ Align ITS plans, work and timelines with changes needed in IT architecture and IT operations to support existing and new user applications (systems)</li> </ul> <p>As set out in Governance and Accountability, the role and degree of ITS involvement in determining IT infrastructure, operations and support in new applications and changes to existing applications needs to be established to facilitate ITS multi-year planning.</p>

<sup>1</sup> For example: Supervision, Regulation and Corporate Services Sectors, Pensions Division and Office of the Actuary

Evaluation Criteria Elements / Components	Observations & Recommendations
<p><b>Operating Environment</b></p> <ul style="list-style-type: none"> <li>▪ <i>External and internal environments</i></li> <li>▪ <i>Assessment of results</i></li> </ul> <p><b>Recommendations</b> The role of ITS in gathering information on User IT services for SLAs should be put in place in order to facilitate ITS planning</p>	<p>OSFI Infrastructure Technology Services are provided through a comprehensive IT infrastructure (e.g., desktops, blackberries, e-mail, networks, etc) and highly automated User applications, incorporating IT security requirements as confirmed in a recent independent IT Security Threat Risk Assessment.</p> <p>The ITS environment is driven by internal and external requirements. Internally there is support for existing and new User applications and related operating systems and database lifecycle maintenance. Externally there is the maintenance of vendor agreements and ongoing support related to the IT architecture, operations and related 'generation' upgrades.</p> <p>ITS has put / is putting in place ITIL processes in managing its operations in areas such as Configuration Management, Incident Management, IT Service Continuity, Change Management. IM/IT is establishing Operation Level Agreements among the Divisions to clarify the respective management and accountability in providing IT services across the Office.</p> <p>The recent benchmark study noted the importance of establishing User Service Level Agreements (SLA) to ensure alignment of their IT needs (applications) with IT services, including setting performance levels such as response time, number of application users and data storage capacities. We support such an initiative and putting in place the role of ITS in gathering information from Users on IT services in order to facilitate ITS planning.</p>
<p><b>Risk Management</b></p> <ul style="list-style-type: none"> <li>▪ <i>Risk and risk tolerance guidance</i></li> <li>▪ <i>Risk consistent with ERM framework</i></li> </ul> <p><b>Recommendations</b> None</p>	<p>OSFI Enterprise Risk Management processes and activities are used for the identification, assessment and mitigation of potential risk at the Sector and Group levels, in this case IM/IT. The Corporate Services Sector risk profile includes an assessment of risk associated with system development and providing IT services that are considered in IM/IT planning. In addition, ITS completes detailed self-assessments of operational risk consistent with the ITIL structure. The results are also incorporated into ITS planning.</p> <p>The Security Group, following the Government IT security (Management of Information Technology Security, MITS) standards, provides ongoing monitoring and assessment of IT risk, advising ITS of any potential risk and any incidents. Also, IT security threat risk assessments are conducted and ITS is advised of any improvements</p>

Evaluation Criteria Elements / Components	Observations & Recommendations
	<p>needed.</p> <p>However, there is a need for alignment of the Security Group and ITS work in identification and mitigation of IT risk, such that ITS plans fully incorporate IT security requirements. The Security Group and ITS are currently defining respective responsibilities and accountability and are establishing a working protocol. We support this important initiative in putting in place a comprehensive framework for a review and assessment of IT risk in a collaborative way. Such an arrangement is instrumental in ITS assessing and in incorporating IT security requirements into its plans.</p>
<p><b>Planning Process</b></p> <ul style="list-style-type: none"> <li>▪ <i>Planning objectives, process, guidance and deliverables</i></li> <li>▪ <i>ITS planning includes:</i> <ul style="list-style-type: none"> <li>▪ <i>Issues / concerns / challenges</i></li> <li>▪ <i>Operations and priorities plans</i></li> <li>▪ <i>Resource allocation and Financial Planning</i></li> </ul> </li> </ul> <p><b>Recommendations</b> Establish the role of ITS in determining IT infrastructure and operation requirements in new applications and changes to existing applications in order to facilitate ITS planning</p> <p>The role of ITS in gathering information on User IT services for SLAs should be put in place in order to facilitate ITS planning</p>	<p>As noted earlier, ITS maintains multi-year detailed plans, following the ITIL processes, that are incorporated into IM/IT plans. IT architecture and IT operations lifecycle management is in place. Infrastructure migration and operations support processes provide detailed information for ITS planning purposes such as rolling quarterly schedules of long-range deployment for desktop, server and database software; briefing notes on pending operational issues; canvassing for new project priorities.</p> <p>However, capacity planning of IT processing and storage is impaired as detailed information and impact assessment of User application changes and new applications are not always provided to ITS nor is ITS involved in the early stages of determining IT infrastructure, operations and support requirements. As a result, in some cases, changes to IT architecture and operations are made on an urgent basis delaying other User application changes and ITS maintenance / adjustment activities.</p> <p>The recent benchmark study noted that “development activities have dwarfed ITS IT support activities, raising the likelihood that support will be under-funded and OSFI could potentially experience unsustainable support requirements”. To maintain “evergreen plans”, the role and degree of ITS involvement in determining IT infrastructure and operation requirements in existing and new applications needs to be defined and put in place in order to facilitate ITS planning. This is essential in translating application changes into detailed IT requirements and their incorporation into ITS planning and major IT upgrades such as Office 2007, Vista, and servers. ITS created a Project Manager position with a focus on early identification and definition of IT infrastructure and operations requirements.</p>

Evaluation Criteria Elements / Components	Observations & Recommendations
	<p>In addition, User IT services are not fully defined and are not aligned with ITS IT services and related costs. Such information is essential for comprehensive ITS planning and supporting investment decisions on IT infrastructure, operations, and support.</p> <p>IM/IT is establishing Operation Level Agreements within the Group to strengthen the alignment and co-ordination of IM/IT planning and plans. As noted by the benchmark study, the alignment of User IT services with IT operations and support through Service Level Agreements (SLA) is an essential management and planning tool. An SLA would provide detailed information about User IT services needed currently and in the future for ITS planning. We support such an initiative in strengthening IM/IT planning and its alignment with User IT service needs. Although SLAs would be established and managed through Information Systems Operations of IM/IT, ITS has an important role in defining IT services and their alignment to the IT infrastructure, operations, and support requirements. The role of ITS in gathering information on User IT services for SLAs should be put in place in order to facilitate ITS planning.</p>
<p><b>Communications and Reporting</b></p> <p><i>Process for progress reporting and revision of plans</i></p> <ul style="list-style-type: none"> <li>▪ <i>Information</i></li> <li>▪ <i>Performance measures</i></li> <li>▪ <i>ongoing and transparent communication</i></li> <li>▪ <i>objectives, processes, guidance and deliverables</i></li> </ul> <p><b>Recommendations</b> The role of ITS in gathering information on User IT services for SLAs should be put in place in order to facilitate ITS planning</p>	<p>As the provider of IT services, ITS has ongoing communications across the Office. Within IM/IT there is informal and formal reporting. ITS routinely meets with its direct managers, IM/IT Directors and the Senior Director. IM/IT reports quarterly to the Assistant Superintendent, Corporate Services and, as appropriate, to the Executive Committee.</p> <p>Monitoring of IT operations is in place following the ITIL structure. Internal processes and performance reporting have been / are being established and incorporated into ITS planning, monitoring and reporting that is essential in maintaining “evergreen plans”.</p> <p>Through IM/IT implementation of Operations Level Agreements, ITS communications and reporting on implementing ITS plans is being strengthened. However, reporting of IT services by User business lines, levels of service, performance standards and resource consumption is not maintained. As set out in Planning Process, Service Level Agreements recommended in the benchmark study would provide the foundation for monitoring and reporting on IT services. In addition, SLAs would provide the foundation for assessing the adequacy and capacity of the office’s IT infrastructure, operations and support as key input into multi-year planning. As previously noted, we support establishing SLAs as a key planning tool</p>

Evaluation Criteria Elements / Components	Observations & Recommendations
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and defining the ITS role in gathering information on User IT services for SLAs in order to facilitate ITS planning.

## Conclusion

### Overview

The audit of Infrastructure Technology Services planning activities, processes and tools covered OSFI's 2008-09 planning period as well improvements for the 2009-10 planning period.

The audit was conducted on a collaborative basis and included information gathering with the other Information Management and Information Technology groups, and sharing observations and assessments throughout the review. We observed a strong commitment and a very proactive effort in strengthening Infrastructure Technology Services and generally Information Management and Information Technology planning.

### Conclusion

Our audit conclusion, based on the assessment of the Infrastructure Technology Services (ITS) planning activities and processes (framework) is that:

*Infrastructure Technology Services has many elements and components of a comprehensive planning framework, particularly in the areas of "keeping the lights on". As outlined in this report, there are two key areas where improvements are needed to facilitate Infrastructure Technology Services planning. These improvements require continued pro-active planning efforts and the integration of Infrastructure Technology Services planning within the Information Management and Information Technology and Users information technology service planning.*

- *Establish the role of ITS in determining IT infrastructure and operation requirements in new applications and changes to existing applications*
- *The role of ITS in gathering information on User IT services for SLAs should be put in place.*

Our audit team wishes to recognize the support we received throughout this audit and the comments that were shared with us.

\_\_\_\_\_  
Senior Director,  
Audit & Consulting Services

\_\_\_\_\_  
Date

## **Management Response**

ITS views the A&CS audit as very positive. It provides an unbiased indication of the progress we have made so far, and paints a picture of what is left to accomplish. It substantiates our current direction and sets out the areas of improvement in planning.

Prior to the A&CS audit of ITS planning, ITS initiated work to enhance our planning capabilities, by ensuring repeatable processes in areas such as change management, incident management, release management, problem and issue management, patching, capacity management, budgetary control, and assessment / prioritization of initiatives. The A&CS audit captured this work. ITS agrees with the findings of the report.

The two recommendations, for strengthening ITS planning by ensuring involvement in application development and establishment of SLAs with the users of our services, are appropriate. ITS is moving forward on the first, by ensuring a core member of the Architectural Council is from ITS. This Architectural Council sets the OSFI data standards and enforces them. ITS is also developing a Service Level Agreement (SLA) with Security Services for IT Security due by January 31, 2009. The remaining SLAs will be developed commencing FY 2009 / 2010.

**Audit Evaluation Criteria – Appendix 1**

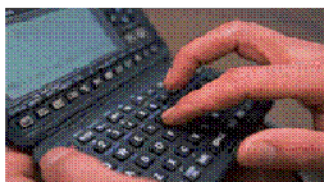
These evaluation criteria were drawn from internationally recognized management standards: COBIT (Control Objectives for Information and related Technology), COSO (Committee Of Sponsoring Organizations of Treadway Commission) and ITIL (IT Infrastructure Library, UK) as adapted to OSFI's environment and in consultation with the Director of ITS and the Senior Director of IM/IT.

Element	Components
Governance and Accountability	<ul style="list-style-type: none"> <li>▪ <i>Responsibilities</i> and the <i>accountability &amp; reporting</i> structure in ITS Planning are established.</li> <li>▪ A process exists for <i>IM/IT management oversight</i> over ITS Planning activities and processes.</li> <li>▪ A process exists for <i>IM/IT management</i> review and approval of ITS Plans</li> <li>▪ A feedback loop process exists for <i>monitoring ITS</i> plans and updating as appropriate.</li> <li>▪ <i>Planning responsibility and accountability</i> is incorporated in respective Goal Commitment Documents.</li> </ul>
Objective Setting	<ul style="list-style-type: none"> <li>▪ ITS objectives and priorities are (defined, documented and communicated) aligned with <i>IM/IT objectives and priorities</i>.</li> <li>▪ <i>ITS monitoring and performance measures</i> are established (defined, documented and communicated).</li> <li>▪ ITS objectives and priorities and related performance measures cascade down to ITS staff as well across IM/IT divisions.</li> </ul>
Operating Environment	<ul style="list-style-type: none"> <li>▪ <i>External and internal environments</i> (emerging issues, information technology developments, and standards / guidelines) are monitored, gathered and considered in ITS' ongoing operations and planning.</li> <li>▪ Assessment of prior years' results and performance against ITS plans.</li> </ul>
Risk Management	<ul style="list-style-type: none"> <li>▪ OSFI and IM/IT <i>risk and risk tolerance guidance</i> is incorporated into ITS plans and priorities and cascade down to ITS staff.</li> <li>▪ Overall OSFI risk and IM/IT risk information, consistent with ERM framework, is incorporated into operations and project plans.</li> </ul>
Planning Process	<ul style="list-style-type: none"> <li>▪ Planning <i>objectives, process, guidance and deliverables</i> are in place (defined, understood, and documented).</li> <li>▪ ITS planning includes: <ul style="list-style-type: none"> <li><i>Issues / concerns / challenges:</i> <ul style="list-style-type: none"> <li>▪ <i>Operating environment and risk management issues</i> are identified, assessed and incorporated in ITS planning.</li> </ul> </li> </ul> </li> </ul>

Element	Components
Communications / Reporting	<ul style="list-style-type: none"> <li>▪ <i>ITS operational capacities</i> (services levels and trends, current and future staffing needs, capital and professional funding requirements) are determined and incorporated in ITS planning.</li> </ul> <p><i>Operations and priorities plans:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Alignment of ITS 'plans and priorities with IM/IT plans and priorities.</i></li> <li>▪ Development of multi-year <i>operations and project plans</i> incorporating resource needs and interdependencies across IM/IT divisions.</li> </ul> <p><i>Resource allocation and Financial Planning:</i></p> <ul style="list-style-type: none"> <li>▪ Capacity and resource <i>allocation</i> are consistent with ITS plans and align with IM/IT division plans.</li> <li>▪ ITS Plan broken down by <i>capacity and resources, and timelines</i> (i.e. multi-year budgets).</li> </ul> <p>A process for progress reporting and revision of plans is defined, understood and documented.</p> <ul style="list-style-type: none"> <li>▪ <i>Information</i> required for reporting against plans is defined, documented and communicated.</li> <li>▪ ITS plans and priorities are aligned with <i>performance measures</i></li> <li>▪ There is <i>ongoing</i> and <i>transparent communication</i> within ITS and IM/IT management objectives, and plans and priorities, and the required responsibilities and accountability.</li> <li>▪ Planning <i>objectives, processes, guidance and deliverables</i> are communicated to those involved in preparing ITS plans.</li> <li>▪ Planning <i>information</i> is captured, maintained, and accessible as needed</li> </ul>

## Infrastructure and Technology Services (ITS)

### Product/Service Information



Director Infrastructure and Technology Services  
Telephone 813-990-8013  
Facsimile 813-990-7386  
Office of the Superintendent of Financial Institutions  
266 Albert St.  
Ottawa, ON K1A 0H2  
[Richard.John@osfi-baif.gc.ca](mailto:Richard.John@osfi-baif.gc.ca)

ITS installs and maintains the information infrastructure for OSFI. We provide the following services:

#### Network / IT Security Support

Network Security protects OSFI IT systems and data integrity from unauthorized access. This involves installation, configuration and ongoing adjustment to security devices and software composing the security infrastructure. Specific functions include:

- Establishment and ongoing maintenance / support of network zoning including a corporate security perimeter and internal perimeters for sensitive data
- Establishment of Network Security standards and enforcement of IT Security Policies / Standards established or adopted by OSFI Security Services
- Ongoing research and monitoring for known threats in the IT area, for web browsing and for email (e.g., SPAM)
- Ensuring current anti-virus controls on email / web traffic
- Ensuring only authorized OSFI users can access our systems by operating / maintaining authentication systems
- Ensuring web security against spyware, etc. by installation and ongoing support of web security software
- Ensuring secure data is protected during storage by disk encryption or in transmission by providing PKI / CA support
- Work with SSU on any identified security incident, Threat Risk Assessments, Vulnerability Assessments, Network Penetration Tests, Security Reviews, etc.
- Ensuring OSFI's alternate Data Centre is secure

#### Blackberry Data Support

ITS provides the data infrastructure for hand-held Blackberry devices, including the operation and maintenance of the Blackberry Enterprise Server; responding to data-related incidents / problems; and the development / maintenance of Blackberry architectural standards.

#### Remote Access Support

ITS provides the infrastructure so remote OSFI users can securely access the OSFI network by the provision of secure VPN technology and monitoring / reporting performance of all remote access traffic.

#### Infrastructure Support

These ITS services encompass the design; installation / upgrade / removal and approval of hardware and associated software; operational control; and overall management of the infrastructure including core infrastructure, infrastructure supporting applications / service provided to business but excluding database support. These support functions include the:

- Development / maintenance of architectural standards for networks and applications
- Provision of architectural advice for networks and application development
- Provision of server support / maintenance including patches, updates

- Development, configuration and maintenance of an IP Addressing scheme, Active Directory, and monitoring software (SMS, MOM) including administration
- Provision of ongoing monitoring / reporting for performance and capacity thresholds for network servers; application servers, server room facilities and environment controls
- Completion of all backups
- Ensuring the operation of LAN and WAN connections
- Installation, configuration and management for the SAN, WAN, and LAN Network Routers and Switches
- Ensuring Application security and internal network authentication
- Completing application upgrades (based on Change Requests or Releases) and configuration management control
- Providing incident / problem support (2<sup>nd</sup> & 3<sup>rd</sup> Level)
- Assisting in asset management / network asset tracking
- Managing OSFI's internet connection
- Ensuring OSFI's alternate data centre is prepared

#### Database Support

These ITS services encompass the design; installation / upgrade / removal of hardware and associated software; operational control; and overall management of the database infrastructure and include the:

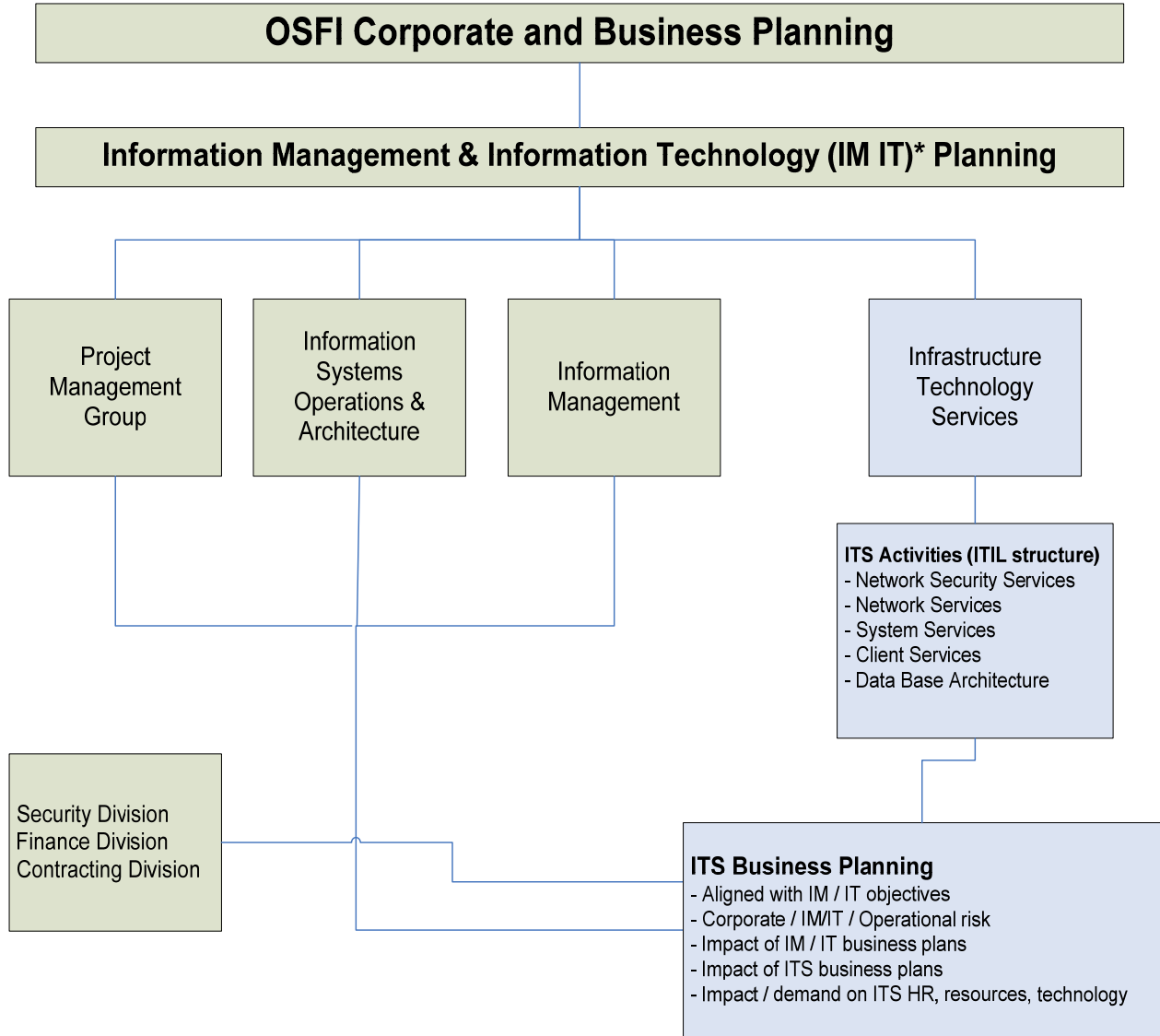
- Provision of database support / maintenance (patches, updates) and upgrades including change management control
- Completion of all database backups and ensuring these databases can be rapidly restored
- Provision of infrastructure advice for new databases
- Monitoring and reporting database performance and capacity thresholds
- Provision of database security
- Provision of incident / problem support (2<sup>nd</sup> & 3<sup>rd</sup> Level)

#### 2nd Level Desktop Support

Issues related to the desktop environment are investigated and resolved including:

- Provision of incident / problem support for workstation clients when requested (2<sup>nd</sup> & 3<sup>rd</sup> Level)
- Selection and configuration of printers
- Maintaining workstation hardware / software configuration standards and "images"
- Monitoring / reporting workstation assets (e.g., licenses)
- Ensuring workstation stability via anti-virus upgrades, installation of workstation client patches and ongoing monitoring / review of Windows XP / Office 2003 security safeguards.

**Information Management and Information Technology Planning Structure – Attachment 3**



\* IM IT restructure July 1, 2008