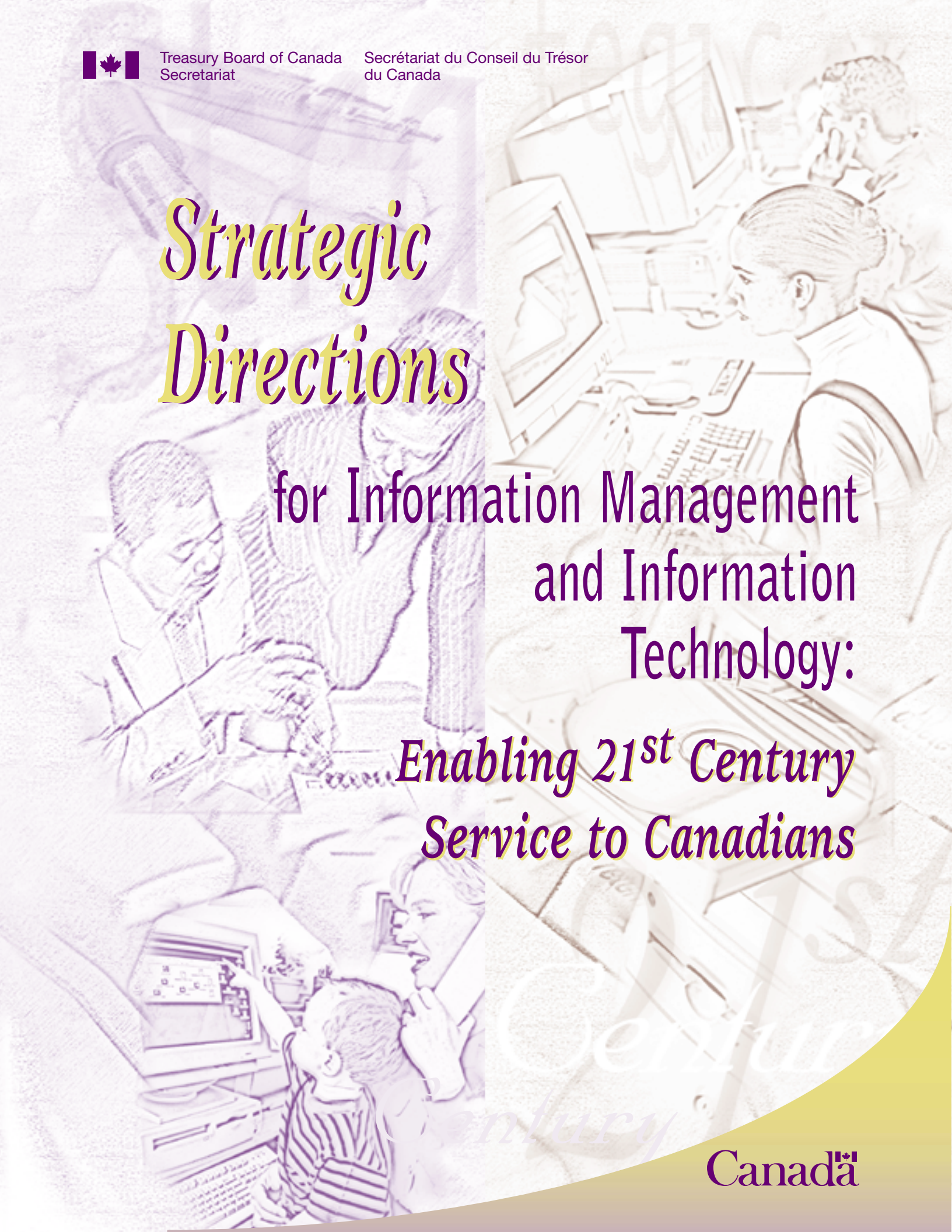
Treasury Board of Canada Secretariat
Secrétariat du Conseil du Trésor du Canada

Strategic Directions

for Information Management and Information Technology:

Enabling 21st Century Service to Canadians



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Strategic Directions

for Information Management and Information Technology:

Enabling 21st Century Service to Canadians

A Mission for the New Century

A Message from the President of the Treasury Board

The impact of technology is transforming our lives.

The Government of Canada feels this impact. As societies and economies evolve, largely due to the influence of globalization, changing demographics, and the rise of the digital economy, governments are "reinventing" themselves to meet new expectations and the priorities of citizens and businesses. These dynamics are compelling the federal government to create a new vision for its relationship with Canadians. Characterized as citizen-centred government, it is a vision that recognizes the different ways that people interact with their government:

as taxpayers who expect value and results;

as clients who expect accessible, quality services; and

as citizens who participate in the democratic process.

The government's challenge is to enable Canadians to explore all three elements of their citizenship. Government is meeting this challenge by reassessing the substantial resources it has in public servants and IM/IT assets and levering these investments to make government more responsive and affordable.

This ***Strategic Directions for Information Management and Information Technology*** document represents a broad-based, comprehensive approach to achieving this goal. It is an ambitious agenda that confirms Canada's role as a world leader in modern governance empowered by information management and technology.

Vision Statement

The IM/IT strategy will advance the federal government's citizen-centred service delivery vision collaboratively across departments and with other levels of government.

Lucienne Robillard

Lucienne Robillard. P.C., M.P.

Enabling Government's IM/IT Vision:

A Message from the Chief Information Officer for the Government of Canada

Governments, corporations, and other institutions around the world are fundamentally changing the relationships they have with the people they serve. This transformation is in its nascent stages and is the result of many powerful influences.

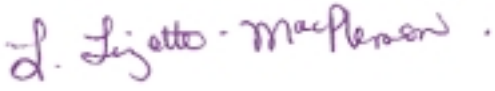
One of the strongest is the shift in how governments view citizens and businesses. In order to improve service delivery, governments are listening to the concerns of citizens and businesses and are acting on their insights.

The citizen-centred dynamic is driving the Government of Canada's ***Strategic Directions for IM/IT***, a series of directions and opportunities geared toward a more collaborative, integrated model of delivering government services and programs. These directions arose out of the collaboration of communities of interest that came together and agreed on the path forward. They are the foundation for how we can together shape the ongoing process of change and renewal.

> *"As we continue to renew and modernize the institution of public service, it is increasingly the voice of Canadians that will guide us. Technology is providing us with one of the greatest tools to hear that voice more clearly, and putting in our hands a better means to respond."*
>
> Peter Harder,
> *Secretary of the Treasury Board*

Our success in delivering on the promise of these ***Strategic Directions*** will depend on how well we continue to work together. Technology and information are powerful enablers, but their potential can only be fully realised through collaboration. This is fostering a public sector service revolution across the country, a revolution that is bringing governments together to integrate and rationalize services.

Facilitating this transformation is the core of the mandate for my two-year term with the Government of Canada. The level of participation, support, and enthusiasm from colleagues across government and in the private sector assures me that there is a deep commitment to harnessing IM/IT's potential to better serve Canadians.



Linda Lizotte-MacPherson

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Executive Summary

Globalization, demographic change and the growing influence of technology are reshaping our world at breathtaking speed. A world economy based on digitally empowered enterprises and people is giving rise to a new set of critical success factors for survival in the global marketplace. The Internet – the nervous system of this digital network – is growing exponentially as more and more of the world becomes connected and people begin to understand IM/IT's potential.

Together, these forces are causing institutions, businesses and governments to renew themselves in order to deliver their mandates, and remain competitive and relevant in a changing world. The Government of Canada has responded by reassessing its role in society, its priorities and the allocation of its resources. By placing citizens and businesses at the centre of activity, the federal government is organising processes and services around their needs and expectations. It has embraced a vision of electronic service delivery that would offer Canadians services at the right time and place, a vision that would enable individuals and businesses to interact securely with government in a convenient, accessible way.

Strategic Directions for Information Management and Information Technology is a comprehensive approach to achieving this vision. The result of extensive consultations, this approach draws on a strategic, government-wide perspective that recognizes the pivotal role the government's people, technology and management frameworks play in serving Canadians better.

This ***Strategic Directions*** document outlines a series of priorities that will lever government's significant IM/IT investments towards a more integrated, collaborative model of government. Each priority area is supported by detailed workplans with clearly defined milestones. First-tier priorities include the following:

Building the policy framework for sustainable and affordable structures to support electronic service delivery.

Aligning government's IM/IT infrastructure to support electronic service delivery and government operations. To enhance service delivery, a framework is needed to enable interoperability among government programs, both for information and for transactions. Government must also establish trust and confidence in electronic transactions to assure Canadians that their privacy is protected and their transactions secure. Departments from across the government have participated in the development of a government-wide

IM/IT Infrastructure initiative, which will implement a federated architecture model for government infrastructure and put in place security mechanisms. A common infrastructure related to information content is also an emerging priority, and the government is working towards a common set of IM standards, techniques and tools.

Building a world-class IM/IT workforce. The potential of technology and information ultimately depends on people to drive it forward. As government increasingly relies on IM/IT to serve Canadians better, its IM/IT workforce becomes all the more critical. Attracting and retaining these kinds of knowledge workers is a top priority, and the government is taking steps to become an employer of choice and a learning organisation that encourages innovation and team building. The federal government is also committed to ensuring that its IM/IT workforce has the opportunity to acquire the skills it needs to take full advantage of technological advances and meet evolving expectations. This ***Strategic Directions*** document includes a comprehensive human resources framework for the IM/IT community. This framework encompasses programs that will empower public servants to manage in an increasingly complex, dynamic IM/IT environment.

Working to make government an employer of choice that attracts and sustains a world-class IM/IT workforce.

Improving the management and success rate of IM/IT investments and minimising risk. The Government of Canada invests over four billion dollars annually in IM/IT. The difficulties with managing large IM/IT projects in the public sector have been well documented, with management-related weaknesses and risk management being identified as areas most problematic to project success. These findings are also consistent with private-sector experiences. In order to ensure that Canadians receive maximum return on IM/IT investments, this ***Strategic Directions*** document includes the implementation of an Enhanced Management Framework (EMF). The objective of the framework is to help guide IM/IT investments, enhance project management capacity and reduce risks. It includes methodologies, templates and a toolkit of best practices to support departments in their ongoing management of IM/IT projects. The EMF provides for strengthened portfolio management and business planning.

Taking steps to improve the management and success rate of IM/IT investments while minimising risks.

Reforming government's procurement regime has become an urgent priority due to the accelerating rate at which business needs are evolving and technology is changing. The IT procurement reform process set out in these ***Strategic Directions*** is designed to strike the right balance between the need for flexibility, innovation, openness, fairness and effectiveness, while maintaining careful stewardship of taxpayer's resources. IT reform initiatives focus on three areas: education and certification; the adoption of benefits-driven procurement; and the removal of immediate operational barriers to a more modern procurement environment.

Reforming IT procurement to facilitate program delivery

The ***Strategic Directions for Information Management and Information Technology*** document represents the energy and commitment of colleagues across government who have come together to chart a path forward. It is an ambitious IM/IT strategy that has assessed the challenges and developed a means to meet them, in order to serve Canadians better in the new century.

Part 1 – The Changing Landscape

1.1 Technology, Globalization, and the Digital Economy

Technology, globalization, and the rise of the digital economy are changing our world.

As we approach the 21st century, information technology is effecting what author Frances Cairncross calls the "death of distance." Cairncross's term captures the essence of what will surely be credited as the single most important force shaping society in the next century. Virtual government, virtual borders, virtual business, virtual reality--all are being made possible by information technologies that are altering the way people and businesses communicate and redefining the global marketplace.

The age of "ubiquitous computing" is dawning, an environment where people will have nomadic access to their information and computing systems from publicly shared access points. This environment will raise fundamental questions: Who will own public access points? What will their capabilities be? And how will they interoperate? How will we know who is authorized to access them? This environment will heighten the need for a robust and secure infrastructure to govern and deliver services electronically.

According to current projections, the information economy will surpass industrial and agrarian economies in terms of percentage of GDP by 2003. This shift has implications beyond technology. Unlike the physical goods industry, many information-based services are geographically insensitive. The Internet is the symbol of this new world; it is forecasted to become the primary infrastructure for all enterprises, with two billion users predicted to be on-line worldwide by 2003.

In Canada, the federal government is contributing to this shifting landscape. The March 1994 appointment of the Information Highway Advisory Council (IHAC), with a mandate to assist government in understanding how IM/IT is changing economies and societies, was an early response. The IHAC tabled reports and recommendations in September 1995 and September 1997, which have guided government decision making and have enabled Canada to emerge as a world leader in the adoption and use of IM/IT. The introduction of legislative measures to facilitate electronic commerce to protect privacy and confidentiality on the Internet are good examples of this leadership.

1.2 The Changing Voice of Citizens and Businesses

In tandem with the rise of the digital economy is the growing understanding of the citizen as the principal driver of change.

Information technologies have infiltrated almost every aspect of modern life, resulting in the rise of a new set of expectations and demands. Because technology can create instant communication, instant answers are expected. Because technology has the ability to warehouse and organize information, comprehensive, one-stop service has become the acceptable standard.

Drivers of service quality:	Citizen solutions for multiple contact experiences:
Timeliness	A "one-stop" centre for service in one location
Knowledge and competence	
Courtesy and comfort	Ability to do most tasks by mail, phone or Internet
Fair treatment	
Outcome	A person to guide me

Source: Erin Research Inc., 1998

Citizens and businesses want easy access through single-window service delivery – self-serve kiosks and the Internet – as well as improvements to traditional forms of contact such as mail, telephone and personal service. To identify the best ways to meet rapidly evolving expectations, governments are increasingly turning to those they serve for guidance.

1.3 Knowledge as a Key Resource in the Digital Economy

In the digital economy, the creation and strategic use of knowledge – how well it is managed, shared, transmitted and stored – is growing in importance. Government must lever enterprise-wide IM/IT initiatives to manage records, information and knowledge resources in ways that were never before possible. Just as importantly, knowledge must be viewed as a resource to be nurtured and shared in support of broad corporate goals.

While knowledge creation, transfer and sharing is principally behavioural, IM/IT can be key enablers in this process. To succeed in the future, government departments and agencies must collaborate to develop the necessary systems, strategies and cultures for knowledge management.

1.4 The Changing People Landscape

The emphasis on IM/IT as key strategic resources is changing the human resources landscape.

"We must become the employer of choice and be the most attractive and appealing option. We must have a modern and exciting workplace that better meets the needs of knowledge workers. This will require investments in four areas: the quality and nature of the work, the work environment, our work processes and the development of our leaders."

Mel Cappe,
Clerk of the Privy Council and Secretary to the Cabinet

"By pushing forward aggressively to get government on-line, the Government of Canada is playing an important role in making our country one of the most connected nations in the world. Government is becoming a model user of information technology, drawing on its considerable IM/IT infrastructure to bring integrated, accessible service to Canadians. As we do this, we are improving the quality of the information we provide, improving service delivery, and ultimately, becoming a world-class, technology-enabled organisation."

Kevin Lynch
Deputy Minister, Industry Canada and Chair, Treasury Board Secretariat Advisory Committee Information Management Sub-Committee (TIMS)

The traditional IT function is now seen as a strategic enabler rather than a support service. The prerequisites for effective knowledge management, coupled with growing recognition of the central role of IM/IT in achieving business goals, have contributed to this shift in thinking.

As a result, chief information officers and departmental heads of IT are becoming key members of senior management teams who help achieve business goals. They are increasingly viewed as team builders, consensus seekers, and problem solvers who must bring communications skills, business acumen, and management experience to their jobs.

Just as the CIO role and skill set is changing to reflect the alignment of IM/IT and business goals, so too is the role of the IM/IT professional. IM/IT professionals do much more than implement technical solutions; today, they are relied upon to have an excellent grasp of the business and its corporate goals, coupled with the IM/IT skills to help achieve them.

Attracting and retaining IM/IT professionals in this tight labour market is a top priority for the Government of Canada. The government must become an employer of choice and provide challenging, worthwhile work that attracts and retains highly sought-after knowledge workers.

Part 2 – Governing in a Digital World

2.1 A Vision for Electronic Service Delivery (ESD)

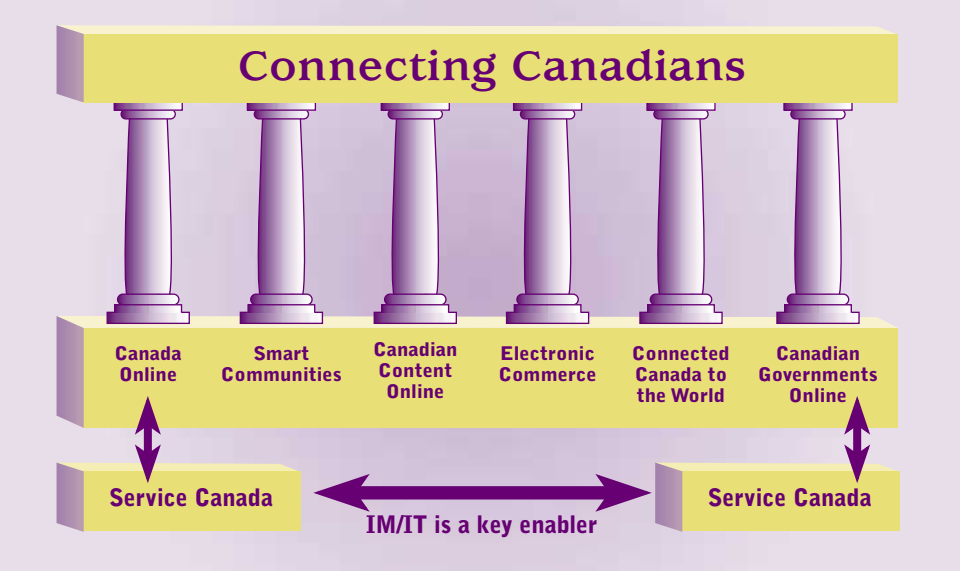
Public access to secure electronic services centred on citizens' needs.

The government's electronic service delivery (ESD) vision incorporates over a decade of experience using IT to mechanize programs and processes in order to make government more affordable, efficient and responsive. Through these experiences, the federal government has used IM/IT to revitalize its relationship with citizens and businesses.

The government has made tangible progress and is doing business differently than even five years ago. Over 190,000 public servants, for example, are now connected by e-mail, and some of these networks are linked to provincial and other networks. Furthermore, the government's websites, accessible through the Canada site, are entry points to a range of government services and information.

The Government of Canada is committed to providing services – at the right time and place – by enhancing and expanding the range of government services available electronically, and by making those services more integrated and accessible. The government's Connecting Canadians agenda and Service Canada initiative are tangible manifestations of that commitment.

The government's vision is to allow citizens to choose how they wish to access information and services – via mail, phone, personal visit, or through new ESD options like kiosks and the Internet – through a single window or by going directly to



departments. Electronic services will be readily available in all parts of the country and to all income groups, in both official languages, and will respect the special needs of persons with disabilities. This vision recognizes that ESD channels must be easy to use and have a common look and feel, and that Canadians want to conduct their business in a secure environment that protects their privacy and the confidentiality of information.

The Clerk of the Privy Council has mandated the Treasury Board Secretariat Advisory Committee Information Management Sub-committee (TIMS) – a committee of senior government officials – to champion efforts to get government on-line. Canadians are currently among the most connected citizens in the world, and government-on-line efforts will further encourage them to be avid and sophisticated users of new technologies. Getting government on-line will not only provide significant benefits to citizens and businesses; it will also stimulate new jobs and economic growth. Canadian businesses that supply high-value e-commerce products and services to government will also be able to sell these domestically and abroad, and a high level of connectivity will make Canada a more attractive place to invest and do business.

2.2 Treasury Board Secretariat's Mandate to Enable the ESD Vision

The affordable and responsive delivery of government services through the strategic use of information management and information technology.

In its role as a Management Board for the Government of Canada, the Treasury Board Secretariat (TBS) advises the government on resource management to ensure that it meets its agenda and provides Parliament and Canadians with the information they need to hold it accountable.

TBS carries out this responsibility through its five business lines: resource planning and expenditure management, human resources management, comptrollership, IM/IT, and the Canada Infrastructure Works program.

Within this structure, the Chief Information Officer Branch (CIOB) guides and directs the IM/IT business line. The CIOB supports the government's ESD vision through strategic direction and leadership in levering IM/IT to improve public access to government services and meet public service renewal objectives.

This document outlines the broad strategic directions and a plan to achieve them. The key elements of the federal government's IM/IT strategy are the following:

- A government-wide IM/IT infrastructure that provides a secure and trusted environment to connect with citizens and the private sector.
- A world-class government IM/IT workforce.
- Successful adoption of integrated governance frameworks to guide IM/IT investments, manage risks and set standards.

Achieving these priorities – detailed in the following sections – will require sustained effort and leadership over the next one to five years. Success will depend on how well discrete elements of government work together, building on existing strengths and discovering new ones through collaboration.

Part 3 – From Vision to Reality

3.1 Year 2000 Remediation: A Key Enabler for Electronic Service Delivery

Without question, the government's ESD efforts depend on its first meeting the Year 2000 computer challenge.

Service to Canadians is at the centre of government's Year 2000 efforts. The government has expended significant resources to ensure a minimal disruption of essential services at the change of the calendar year. This dedicated effort allows Canada to claim a position of strength in its degree of readiness. http://www.info2000.gc.ca/welcome/stream_e.htm.

The extraordinary Year 2000 effort will leave government with a valuable legacy. In addition to fostering unprecedented collaboration across governments, sectors and jurisdictions, Year 2000 remediation has illuminated the reciprocal relationship of technology and business programs and services. This insight will be invaluable as the government pursues its post-Year 2000 IM/IT agenda. Specifically, the legacy of the Year 2000 will be felt in four distinct ways:

- The value of collaboration and of working together to identify common areas of interest. Through its Year 2000 efforts, the government has developed effective horizontal processes.
- A better understanding of the strategic value of IM/IT.
- The importance of communications and information sharing, within government, across jurisdictions, and with Canadians.
- The strategic advantage of having a more complete understanding of government's IM/IT assets. Through its Year 2000 work, the government has developed inventories of systems, products, and network interfaces and interdependencies. As a result, it is in a stronger position to manage interdependence among governments to improve service delivery.

3.2 Consolidating Government's Strategic IM/IT Infrastructure

"Getting government on-line requires a new approach to our IM/IT infrastructure. We need to build our infrastructure into a cohesive, government-wide set of IM/IT capabilities that enable integrated service delivery while still allowing individual departments to control and manage discrete elements."

Jill Velenosi,
Deputy Chief Information Officer, Treasury Board Secretariat

Building the policy framework for sustainable and affordable "infra" and "info" structures to support electronic service delivery and internal operations.

Government is not building its strategic IM/IT infrastructure from ground zero. Initiatives to put in place an adaptable IM/IT infrastructure will build on the

government's considerable investments in existing infrastructure. This installed base, much of which will still be operational for another decade, provides both opportunities and challenges – opportunities to improve upon the existing infrastructure and information, and challenges to make it more interoperable.

Shared infrastructure does exist, but most IM/IT infrastructures were developed to optimize the strategies of single departments or programs. As a result, current infrastructures are not as effective as they could be in enabling the horizontality necessary for government-wide initiatives. In fact, some act as barriers to more integrated service delivery.

Within this context, government is taking action to enhance operations, enable seamless interoperability, draw on economies of scale and eliminate barriers to more responsive service options. In October 1998, the CIOB at TBS and the Government Telecommunications and Informatics Services (GTIS) at Public Works and Government Services Canada (PWGSC) undertook a consultative process to develop an action plan for renewing the government's IM/IT infrastructure.

The Strategic IM/IT Infrastructure initiative (SII) is the outcome of this process. The SII is based on input from technology, policy, and program specialists from 23 departments, the views of telecommunications suppliers and vendors, and the commitment of 16 deputy ministers. The SII sets out the underpinning of secure, citizen-centred electronic service delivery – technology components such as networks, telecommunications and systems, and information management components such as policies and information standards.

The SII has three objectives:

- Develop a policy that provides a sustainable approach to managing the federal government's IM/IT infrastructure.
- Adopt a framework that guides the government's investments in IM/IT infrastructure to support one-stop access with a common face to service delivery.

SII priorities

- *Develop overall framework to guide investments in the government-wide infrastructure*
- *Develop network strategy and telecommunications procurement policy*
- *Develop governance framework for the management and funding of the government-wide infrastructure*
- *Conduct review of the Shared Systems program*
- *Develop long-term business plan for the government-wide infrastructure*
- *Develop Government of Canada portal*
- *Implement secure channel prototype*
- *Implement pathfinder projects*

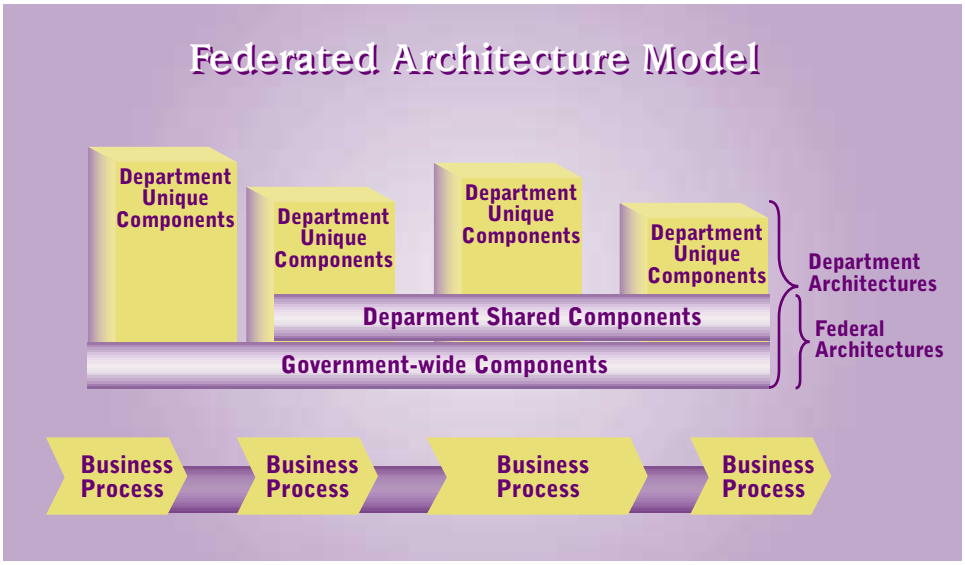
- Create interoperability among government programs, both for information and transactions, to support citizen-centred service delivery.

Infrastructures are complex and contain many pieces, so a framework is essential to identify the critical elements – or domains – needed to meet the government's business vision. Stakeholders endorsed a federated architecture approach to infrastructure, which balances government-wide needs with those of individual departments and agencies.

Within the federated architecture framework, some components of the infrastructure must be commonly held and mandatory across the government to ensure that it achieves its service delivery goals. In other cases, groups of departments may cluster around common solutions. What will remain are standards-based components that can be tailored to the specific needs of individual departments.

The federated architecture:

- specifies standards for common and shared parts of the infrastructure
- facilitates inter-departmental information sharing
- optimizes total cost of ownership by levering common facilities
- enables access by all citizens, regardless of location



Key government-wide components of the federated architecture

- Security (Public Key Infrastructure)
- Electronic directories
- Common look and feel
- E-mail and related attachments
- Co-ordinated channel management
- Network integration

The strategic IM/IT infrastructure requires proper foundations and best practices for governance so that the principles of a federated architecture are widely shared. A formal approval process is the key to sound architecture development. Effective governance structures and decision-making bodies will ensure compliance and guide the architecture process based on the business requirements of government. The recently established IM/IT Management Board (IMB), is comprised of senior government officials from both program and IM/IT areas. The IMB reports to TIMS, and is chaired by the CIO at TBS. It will establish annual business plans, set priorities for the architecture, and manage funding.

The government is currently developing several Internet-based pathfinder projects to work through technology, policy and governance issues that will arise as it builds common pieces of the infrastructure. The SII is a multi-year strategy, with implementation expected to take place over the next one to five years.

3.3 Building Confidence and Protecting Privacy in the Electronic World

Sustaining Canadian leadership in building and maintaining an affordable, secure infrastructure to support government operations and electronic service delivery.

The top priority of the SII focuses on security and privacy, issues that the digital era and the Internet have brought to the forefront.

As information technologies give it a greater ability to collect and access information, government must also protect information and privacy. Surveys have shown that Canadians are concerned about privacy and security, and that these concerns are heightened in an electronic context. The increasing desire of Canadians to conduct business electronically cannot be satisfied without first addressing these concerns.

Therefore, the protection of personal information and the adoption of privacy-enhancing technologies must infuse the underlying infrastructure. To that end, government is moving quickly on a public key infrastructure (PKI). An integrated structure of hardware and software, products, processes, standards, and people, PKI is designed to establish trust and confidence in electronic transactions.

PKI Priorities

- *Develop a PKI management and operational policy framework and governance structure*
- *Promote the deployment of PKI across government, including PKI pathfinders*
- *Facilitate cross-certification internally and with external PKIs*
- *Develop Government of Canada Access Strategy/Policy direction for PKI through consultation with citizens and business*
- *Work nationally and internationally to promote PKI implementation and interoperability*

PKI assures the recipient of an electronic message of the following:

- *Confidentiality*. No one else can read the message.
- *Identity*. The message was sent by the person identified as having sent it.
- *Data integrity*. The message was not tampered with.
- *Non repudiation*. The person who sent the message cannot realistically deny having done so.

Consistent with other parts of the SII, policy issues are more complex than technological ones. As a result, they have been the focus of much of the government's PKI efforts. TBS, in collaboration with departments, provincial counterparts, and other stakeholders, developed a policy for the Management of PKI in the Government of Canada. This policy, along with those that deal with cross-certification, have earned Canada an international reputation as a world leader in PKI policy development.

The government is maintaining this leading-edge momentum through innovative pathfinder projects. Pathfinders will inform the practical development, application, and use of PKI in support of departments' electronic business. The government will take a critical step forward when it extends the reach of PKI to the Canadian public, applying the lessons it learns from the pathfinders. The development and application of a comprehensive public access strategy will put a much broader range of government programs and services within the reach of citizens and businesses.

3.4 Shared Systems

Shared systems are an important piece of the government's strategic IM/IT infrastructure. In 1993, the government began taking steps to rationalize its computer systems to enhance interoperability, improve program delivery and reduce costs. The Shared Systems initiative had an original five-year timeframe to achieve several objectives with respect to the sharing of computer systems across government in the areas of administration, finance, human resources, and material management. The aim was to evolve from a multitude of administrative systems unique to each department to a co-ordinated environment where departments share systems. It promoted co-operation among departments in their acquisition of best-of-breed systems and associated maintenance services.

Canada was one of the first governments in the world to undertake this type of activity, and the initiative has yielded some significant results. With the expiry of the original mandate's timeframe, the CIOB undertook a review of the Shared Systems initiative in the fall of 1998 to assess progress, take stock of lessons learned, identify outstanding issues and make recommendations.

The CIOB consulted widely within government departments and the vendor community. The CIOB, in partnership with the Human Resources and Comptrollership branches at TBS, is taking action to address their input on key issues such as the following:

- governance and accountabilities
- leadership
- roles and responsibilities
- business planning
- funding
- compliance
- administration support
- enterprise resource planning systems

Departments are committed to continuing the Shared Systems agenda and to building on its successes to date.

3.5 An Emerging Priority: Information Management Framework

As government works through the issues of SII such as architecture, networks and governance, a common infrastructure related to information content is an emerging priority. To share information internally and with its external clients and partners in other jurisdictions, the government needs a common set of IM standards, techniques and tools.

The government currently manages information within the framework of Treasury Board-approved IM/IT policies. Experience has demonstrated that implementation of information management and knowledge management (IM/KM) standards will provide the greatest return on investment when they are aligned with the government's business objectives.

Through the SII, the CIOB is working closely with departments to identify information issues, develop a plan to resolve them, formulate necessary policies and share best practices. A collaborative process to identify the communities and the CIOB roles required to advance the emerging agenda for IM/KM is under way.

3.6 Renewing the IM/IT Community in Government

Working to make government an employer of choice that attracts and sustains a world-class IM/IT workforce.

The phrase "serving Canadians better" by definition includes the public servants who are essential to finding innovative ways to use government's IM/IT resources.

Building a world-class IM/IT workforce is a critical success factor in realising the government's ESD vision. The highly dynamic IM/IT environment is breeding a unique kind of knowledge worker, one who is highly mobile, motivated by challenges and opportunities, one who thrives on change and adapts well to a constantly shifting scene.

IM/IT professionals in government are motivated by many of the same dynamics as their colleagues in the private sector. Public servants are attracted to work environments that recognize their contributions, nurture diverse and expansive patterns of thinking, and present continuous learning challenges. Creating this kind of workplace – a hallmark of learning organisations – is essential to attract and retain highly skilled employees.

The government also recognizes the changing nature of the IM/IT profession itself. The Gartner Group predicts a complete reversal in terms of the composition of the IM/IT workforce early in the next century. Where today approximately 65 per cent of this workforce is composed of people with product and technical skills, Gartner predicts that by 2002 there will be a significant shift towards business management skills. Technical expertise will continue to be critically important, but the digital economy is placing a growing emphasis on business acumen and communications.

This skills challenge is further accentuated by retirements in the public service. By the year 2002, 50 per cent of IT executives in the government will be in a position to retire.

These dynamics are playing out against the backdrop of highly publicized people shortages in the human resources marketplace for IM/IT. The Gartner Group forecasts that until 2003 only 7.5 IT professionals will be available for every 10 full-time positions required.

Immediate action is necessary. In consultation with IM/IT executive champions across government, the CIOB has developed a human resources framework for the IM/IT community. Five programs will create opportunities that allow public servants to grow and manage in an increasingly complex environment. The framework, and the programs within it, target both executives and professionals to ensure that government is ahead of the skills curve.

IM/IT community renewal priorities

- *Develop HR Renewal Framework*
- *Develop ongoing understanding of community dynamics*
- *Initiate programs aimed at:*
  - *Development of IM/IT executives and managers,*
  - *Development of IM/IT professionals,*
  - *IT awareness for non-IT managers,*
  - *Development of project managers, and*
  - *Development of non-IT professionals in IT competencies*
- *Implement Project Management Certification Program*
- *Define and make available career development guidelines, systems and tools*

Further opportunities for renewing the government's IM/IT workforce will be found in competitive salary and benefits packages, in the availability of expert-level technical positions, and in the mobility that the public service offers. The challenge and scope of IM/IT work in government are unparalleled. Government is tackling IT projects on a range and scale that is difficult to match anywhere, and in many areas it is charting new territory.

3.7 Enhanced Management Framework

Taking steps to improve the management and success rate of IM/IT investments while minimising risks.

Each year, the Government of Canada invests three to four billion dollars in IM/IT. Citizens and businesses expect government to manage their resources with care. They expect recognizable value, tangible results and clear accounting.

The successes and failures associated with this investment have been well documented, with management weaknesses and the inability to assess and manage risk often identified as problematic areas. The public sector is not unique in this regard – the experiences of the private sector mirror those of government – and these areas are the focal point of improvement efforts.

To help departments maximize their return on IM/IT investments at the portfolio level and better manage their IM/IT projects, the government developed the Enhanced Management Framework (EMF).

The EMF is a menu of principles, best practices, methodologies, tools, templates, handbooks, guides and standards. It is designed to ensure that government IM/IT investments and projects fully meet the needs of the business functions they are intended to support, deliver expected benefits and are completed on time and on budget.

Improvement strategies are focussed in two broad areas: portfolio and project management. Over the last year, CIOB has paid particular attention to portfolio management, since strengthening this area will significantly improve the success rate of IM/IT investments and projects across government.

The guiding principles for EMF are the following:

- *align* IM/IT investments and projects to support business directions
- *establish* clear accountabilities for IM/IT investments

EMF priorities

- *Use benchmark study and other tools to measure effectiveness of the EMF*
- *Deliver regular symposia focussed on key aspects of EMF*
- *Continue roll-out of EMF across government through the Implementation Council*
- *Develop and improve mechanisms for sharing best practices*
- *Establish a pool of expertise to provide external review function on high risk projects*

- *develop* project managers to work within a corporate discipline
- *base* portfolio management and project management decisions on risk management

An EMF Implementation Council, with members from 21 departments, has been established to provide overall advice and support to the deployment of the EMF across government. The Council shares issues, solutions and experiences, and helps define and develop new approaches and solutions.

Implementation of the EMF is under way, with full take-up expected within three to five years. During this period, the CIOB will monitor results and continue to develop the framework to address emerging concerns and requirements.

3.8 IT Procurement

Reforming the government's IT procurement regime has become an urgent priority due to the accelerating rate at which business needs and technology are evolving.

The IT procurement reform process is designed to strike the right balance between the need for flexibility, innovation, openness, fairness and effectiveness, while maintaining careful stewardship of taxpayers' resources.

The CIOB is leading this reform, working closely with PWGSC. The goal of the IT Procurement Reform initiative is to facilitate government program delivery. To do so requires a framework that allows departments to meet their program delivery objectives quickly, responsibly and cost effectively within the context of EMF and the broader procurement reform framework.

The CIOB has taken first steps on IT procurement reform with extensive consultations with departments and industry to ensure a complete understanding of problems and issues. This investigation is also resulting in a baseline cost analysis of current processes, the setting of new targets, and an action plan for improvement.

Further reform initiatives are centred in three areas:

- education and certification
- adoption of benefits-driven procurement
- removal of immediate operational barriers to a more modern procurement environment.

Devising and implementing a dispute resolution mechanism will also be an important aspect of procurement reform.

Part 4 – The Chief Information Officer Branch

4.1 Chief Information Officer Branch (CIOB) Action Plan

The CIOB action plan prioritizes the steps to be taken – in IM/IT infrastructure, human resources, and management frameworks – to prepare the way for more integrated service delivery.

These priorities are supported by detailed workplans with clearly defined milestones. The plan is a co-ordinated strategy that ensures action is taken across all priority areas simultaneously to maximize outcomes and monitor progress.

4.2 Organized for Action

With growing collaboration comes an increased need for a co-ordinating presence to bring partners and interests together. This is at the heart of the mandate of the CIOB.

The number and complexity of interdependencies between functional centres requires the CIOB to work with counterparts across the federal government and beyond. Within this dynamic IM/IT environment, the CIOB is committed to being a high performance team focussed on adding value to government renewal.

The CIOB's guiding principles are the following:

A focus on the strategic use of IM/IT to respond to business drivers, support departmental efforts to identify business challenges and opportunities, and bring IM/IT solutions together to address them.

A commitment to horizontal action on a prioritized agenda.

A commitment to operating as a learning organisation. CIOB advice and strategic thinking must be based on knowledge; it must be current with developments in industry, in government, and with citizens.

Collaboration and consensus-building. The CIOB will draw on the strong IM/IT workforce that exists in government, a genuine community with common aims and a strong desire to work together.

The CIOB is organized around its action plan priorities (www.cio-dpi.gc.ca/cio/cioborg_e.html).

Conclusion

The digital age is an exciting time for the Government of Canada. The IM/IT revolution has allowed it to imagine new ways of connecting citizens, of eliminating the barriers of distance, and of giving a fuller, richer meaning to democracy and citizenship. The government's ambitious commitment to become the most connected nation in the world by the year 2000 – and to providing universal access to Canadians – sends a clear signal that IM/IT is pivotal to Canada's future.

Together, the priorities outlined in these ***Strategic Directions*** are an integral part of that commitment. They are central to the government's push to modernize services and base them on citizen needs and interests. They will help Canadians to realize the benefits of an information society where knowledge – not labour or capital – is the prime resource.

The government must maintain the substantial momentum it has generated on these ***Strategic Directions***. Continued collaboration – both within the federal government and across jurisdictions, borders and sectors – will be key to their success. To this end, the CIOB will continue to work closely with partners and will report on the progress of its various initiatives.