CHAPTER TWO

CANADA: CONNECTING CANADIANS IN THE WIRED WORLD

A North American Overview

On the North American Continent, Canada and the US both rank as major global leaders in the area of electronic government. Mexico, the third country on the continent and a struggling economy despite the North American Free Trade Agreement, has so far failed to develop a communications infrastructure capable of serving the public. As of 1997, Mexico had a teledensity of just 11 telephone lines per person and just over 140,000 Internet users among its 93 million people.[14]

Canada and the US both outstrip all other G7 countries in Internet use among the population, and the governments of both countries have moved forward on extensive action plans to make government information more accessible on-line and to deliver services electronically. Both countries have also realised the significance of electronic commerce to future economic growth, although the conditions favouring such growth are markedly different in the US from those in Canada. A recently released report of the *Canadian E-Business Opportunities Roundtable,*[15] chronicles the structural reasons for a widening gap between Canada's eCommerce growth and the powerhouse U.S. e-business environment where easier access to venture capital, management and strategic expertise, the existence of anchor companies and eCommerce clusters, and a stronger entrepreneurial spirit have led to e-commerce revenue growth 38 times greater than in Canada.

Nevertheless, from a federal government perspective, both countries seem remarkably similar in the extent to which they have begun using new information and communications technologies to deliver information and services. Both countries have also made major strides in reorganizing government in an effort to reduce duplication of services, improve efficiency and be more customer responsive.

Electronic government (eGovernment) has, however, been largely a one-way street – with its major focus on *better disseminating the vast information resources of government to the public, and using new electronic*

means to transact business. Public-private sector partnerships are also beginning to flourish, especially in the US with its expressed government mandate to not engage in activity that the private sector could undertake (for example, the much vaunted US Post Office WINGS project has disappeared, to be replaced by a private sector partnership, delivering the same value-added services at a net-cost savings to USPS and the public).

There has certainly been, as a result of all of this, a tremendous speeding up of information dissemination. Hansard, the record of Canada's Parliament, is now on-line the next day with debates available from the web-site for those who could not watch it on television. Similarly with THOMAS, the US congressional record on-line. Political speeches, press releases, policy papers, studies, operational and statistical data, and other information are all now a click away for those with access to the Internet.

Despite this growth in electronic government, the next stage – electronic governance in the form of electronic democracy (eDemocracy or the democratisation of government by providing better opportunities for the citizenry to interact and influence government) – hasn't happened. Why not? Generally the focus of government departments and agencies remains largely to deliver the services prescribed by the government political apparatus, not to effect change through interaction. Departments and agencies are there to help the individual in accessing and using existing services. Where feed-back and interaction is sought, it is usually to identify and establish which services and which means of delivery offer the greatest value to the electorate. This, in itself, is a valuable exercise, since delivery of government services cost significant public funds and any measure of improvement can represent a significant cost saving.

This is not to say that electronic governance cannot and does not happen. However, where it does happen, it still occurs mostly through traditional means – political polls, reactions to political decisions expressed by the electorate. A recent Canadian government reversal, due to public outcry, of a policy designed to benefit professional hockey franchises is an excellent case in point. The public spoke through traditional means – floods of phone calls and letters to members of Parliament, and the government responded accordingly. However, the response was after the event. Governments still make little use of Internet technology to poll citizens or to obtain their views in a systematic fashion. One reason for not doing so may still be a perception that the Internet is accessible only to those with the resources to afford the technology. Certainly on-line use is still skewed to an affluent, non-demographically representative, population base.

This will change over time, however, and if governments do make the effort to move to the next level of electronic governance, it will provide one more reason for more citizens to want to interact with their governments electronically. In the meantime, *the delivery of government information to the public has reached an unprecedented state of achievement.*

Canada's Effort to be the World's 'Most Connected Nation'

We will make the information and knowledge infrastructure accessible to all Canadians by the year 2000, thereby making Canada the most connected nation in the world.

– Speech from the Throne, 1997

Background

Canada's approach to electronic government was first defined in a Speech from the Throne to open a new Canadian Parliament in January 1994, where the Liberal government laid out a strategy to address the challenges of the Information Highway.

In 1994, the Canadian government released a document entitled *Blueprint for Renewing Government Services Using Information Technology.* Canada's Treasury Board, the agency responsible for financial management and information technology for the federal government, had already identified some guidelines for the application of the new communications and information technologies across the full spectrum of government operations, including the electronic delivery of government services.

The government saw a need, however, to link and integrate government initiatives with private sector goals and opportunities. In 1994, the government created a 29-member *Information Highway Advisory Council (IHAC).* The Council consisting of business leaders and public interest representatives with a stake in information highway infrastructure and applications, was mandated to examine how the country could best use the advancing technology of the Internet and other digital technologies to meet the following objectives:

- ❑ Create jobs through innovation and investment in Canada;
- ❑ Reinforce Canadian sovereignty and cultural identity *(an important point for a country located next door to an economic and cultural powerhouse)*; and
- ❑ Ensure universal access at reasonable cost.

Accomplishing these objectives depended upon a blend of public and private sector initiatives, including new policy directions that would contribute to the right economic environment for information highway infrastructure and new multimedia content to flourish.

IHAC was asked to provide policy advice on the following specific issues and questions:

Competitiveness and Job Creation

- ❑ How fast should the advanced network infrastructure be built?
- ❑ How will network improvements be financed?
- ❑ What is the proper balance between competition and regulation?
- ❑ How can the federal government co-ordinate its activities with other governments?
- ❑ How can the Information Highway best be used to improve the growth and competitiveness of all Canadian businesses, especially small and medium-sized enterprises, throughout Canada?
- ❑ What opportunities does the Information Highway present to improve government operations?

Canadian Content and Culture

- ❑ What is the proper balance between competition and regulation?
- ❑ Should requirements for Canadian ownership and control of communications networks be reviewed?
- ❑ How should copyright and intellectual property issues be addressed?
- ❑ What measures are needed to support Canadian cultural and other content-based products and services?
- ❑ What controls, if any, should be placed on the information that is put on the network?
- ❑ How can the Information Highway best be used to improve the growth and competitiveness of all Canadian businesses, especially small and medium-sized enterprises, throughout Canada?
- ❑ How can Canadians be assured of universal access to essential services at reasonable cost?

Access and Social Impacts

- ❑ What controls, if any, should be placed on the information that is put on the network?
- ❑ How can the Information Highway be used to improve government services to the public?
- ❑ How can personal privacy and security of information be protected?
- ❑ How can Canadians be assured of universal access to essential services at reasonable cost?
- ❑ What consumer awareness and learning opportunities should be provided to enable Canadians to be effective users of the Information Highway?

Consumer Awareness and Learning

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Research and Development, Applications and Market Development

- ❑ How quickly can Canadian industries move toward universal standards and how should these standards be determined?
- ❑ How can we ensure that Canadian information industries take full advantage of the R&D and technological development opportunities presented by the Information Highway?
- ❑ How can the Information Highway best be used to improve the growth and competitiveness of all Canadian businesses, especially small and medium-sized enterprises, throughout Canada?

The Council's report, released in September 1995, suggested a large role for government in setting standards and promoting Information Highway growth by establishing the right regulatory framework and environment. In its more than 300 recommendations, the Council also described a large role for government in directly using the Information Highway to improve the delivery of government programs and services to the public.

The Council foresaw significant cost significant savings and improved quality of service through the use of information and communications

technologies, as well other benefits from the development and deployment of new applications or services in areas of government responsibility, such as health care, education and training.

Specific IHAC Recommendations

Specific IHAC recommendations included the following:

- ❑ The government should be a role model in the cost-effective use and promotion of information technology.
- ❑ The government should accelerate the "single window concept" with potential users to ensure this approach will provide acceptable levels of access to electronic government services for a majority of Canadians.
- ❑ The government should ensure that all Canadians are able to communicate and interact electronically with its departments and agencies.
- ❑ The government should establish benchmarks for the delivery of services, including performance/productivity indicators that will demonstrate the long-term benefits and cost-effectiveness of information technology.

Training and Learning

The government should adopt a comprehensive strategy for lifelong learning delivered on the Information Highway for its operations and services and should create a mechanism by 1997 to ensure co-ordination of all federal government departments' and agencies' initiatives regarding use of the Information Highway for learning and training. Policies should be implemented to develop the use of technology-based learning and training solutions by:

- ❑ Transforming present training programs into a new media format;
- ❑ Sharing expertise and experience in adopting and using technology-based learning and training solutions; and
- ❑ Facilitating technical standards, including interface with databases and navigation tools for learning networks.

Policies should be adopted to assist in developing a technology-based learning and training industry in Canada, particularly for the benefit of small and medium-sized enterprises, by:

- ❑ Providing market information;
- ❑ Setting aside a growing percentage of expenditures for technology-based training and for procurement from private sector firms;
- ❑ Developing a national learning network based on existing infrastructure and learning centres; and
- ❑ Providing incentives such as loans.

Central Agency Leadership

A full-time, dedicated, deputy-minister-level official should assume the leadership in identifying technology-related issues requiring government attention, such as privacy, security, training, and develop processes for their effective resolution in consultation with departments and other stakeholders.

By 1996, the federal government had articulated a policy document in response to the IHAC recommendations. In a May 1996 report entitled *Building the Information Society, Moving Canada into the 21st Century,* the federal government, under the leadership of both Treasury Board and the Ministry of Industry, enunciated its vision, policy strategies and some early accomplishments related to an information highway strategy.

Initiatives and actions planned or taken by 1996 are listed in the chart shown on the following page.

Initiatives	Action	
	Taken	Upcoming
I Quick and Easy Access		
Seamless electronic government access		4
Availability of government information at public access		4
Canada Site on Internet	4	
Open Bidding Service	4	
II Electronic Commerce by Government		
Electronic commerce strategy for government		4
Electronic commerce in private sector		4
Public key infrastructure	4	
Business Number	4	
Intelligent transportation border crossing system		4
Customs Automated Data Exchange	4	
Optical card for Canada-U.S. traveller	4	
Direct deposit and standard payment systems		4
IV Improved Efficiency in Government		
V E-mail across government	4	
VI Locally Shared Support Service	4	
VII Common Electronic Information Infrastructure		
VIII Integrated approach to privacy, security, information access	4	
IX Technology Standards Program	4	

In December 1995, the government established its main access site on the Internet (http://canada.gc.ca), providing a single window for Internet users seeking access to government information and services including frequently requested forms, as well as direct links to other federal and provincial government sites. All federal agencies now have extensive web sites, providing access to detailed information and services. More than 200,000 public services have an Internet address.

Three government departments, Transport Canada, Revenue Canada and Citizenship and Immigration are now co-operating with their U.S. counterparts in intelligent transportation border crossing systems to speed customs, immigration processing and toll collection at land border crossings. With this system, information on a truck and its cargo will be forwarded electronically for processing before its arrival. When a truck equipped with the appropriate communications device reaches the border, its driver will be able electronically to pay the bridge toll, advise Customs and Immigration

of its presence, and if safe and legal, receive a green light to proceed.

Canadian Initiatives in the Connected World

The federal government has launched several major infrastructure and access initiatives in their efforts to be the most connected country in the world.

Community Access Program

The federal government's *Community Access Program* (CAP) has a goal to establish over 10,000 public access sites in rural and urban communities across Canada. Launched in 1994, CAP has already established over 4,200 sites in approximately 3,000 rural and remote communities and is a key component of the government's "Connecting Canadians" strategy - aimed at making Canada the world's most connected nation." The program is now being expanded to include urban centres with populations over 50,000.

CAP matching funds of up to $17,000 per site are available to eligible applicants such as educational institutions, public libraries, community organizations, and municipal and territorial governments. The community funds can include cash or "in kind" contributions such as facilities, equipment and staffing of public access sites.

SchoolNet

The *SchoolNet* program is designed to connect all public and secondary schools and libraries in Canada that wish to have Internet access. As of March 1999, program had achieved its primary goal of extending Internet access to almost 15,000 schools and over 3,300 libraries. The program is scheduled to helping to extend Internet access to individual classrooms by March 31, 2001. Schools and libraries have also received over 250,000 computers through a companion *Computers for Schools program.* This program is a collaborative effort led by Industry Canada in partnership with provincial and territorial governments, the private sector, and the educational community.

The program had to overcome significant technical hurdles, since some of the schools involved in the program are in rural or isolated regions of Canada where conventional Internet access is not readily available (satel-

lite technology was used in some locations).

The SchoolNet Website also provided access to more than 1,000 learning services and resources, including training and research tools aimed at educators and students. SchoolNet development is guided by a national advisory board of provincial and territorial governments, universities and colleges, and educational associations.

The site contains educational resources for educators and learners all across Canada, with interactive quizzes, projects and games that make learning fun. For example, students can tour a virtual museum or zoo, discover Canada's First Nations heritage, link to a wide variety of other sites, or share these learning experiences with other students around the world. The SchoolNet program also provides teachers with financial support to develop on-line projects, help educators find the best buys in new computer hardware or software and showcases best practices for integrating information technology in learning.

A *SchoolNet GrassRoots Program* will support the development of 20,000 on-line projects by March 31, 2001, providing opportunities for up to 5 million Canadian students to develop valuable ICT and employment-related skills (i.e. in web-site design and information management). For example, during 1999 a grade two class in Prince Edward Island requested funds to produce a web-site depicting original stories and illustrations. In October 1998, Microsoft Canada became a founding partner of the SchoolNet GrassRoots National Campaign when it announced $1,000,000 worth of funding to help the Program reach its goal.

Smart Communities Program

The *Smart Communities* program focuses on demonstration projects in 12 Canadian communities that was sheduled for selection in the spring of 2000 through a nation-wide competition. These communities - one in each province, one in the North and one in an Aboriginal community - would be chosen for their world-class visions and strategies on how to achieve economic, social and cultural improvements through the use of information and communication technologies. As such, they would become centres of expertise in the integration of information and communication technologies into communities, organisations and families. Smart Communities would also act as "learning laboratories" in which the innovative use of these technologies in community life and enterprise would be tested.

VolNet

Administered by Industry Canada, the *Voluntary Sector Network Support Program* (VolNet) is a joint undertaking of the Federal Government and the public, private and voluntary sectors. This new Federal Government program has a goal of helping 10,000 voluntary organisations to get on-line by March 31, 2001. This includes providing Internet connectivity, computer equipment, Internet support and skills development to organisations which do not yet have these tools. To support this initiative, the government allocated $15 million over three years for the program.

The primary focus of the program is the distribution of the *VolNet Service Package.* Under this package, eligible voluntary organisations will receive Internet access, computer equipment needed to get on-line, and basic support and training. These services will be delivered by a network of up to 30 community-based Internet 'champions' known as VolNet delivery agencies, that will be the primary contact for all individual voluntary organisations with the VolNet program. The program is still new and delivery agencies are still to be established in all provinces and territories.

Services Canada

Services Canada is the next wave of federal government Internet development in which all government and agencies will be linked to one secure, high-speed network that will deliver federal services over the Internet. The channel supporting this network is expected to cost $400 million to build and will be developed by a consortium of private sector companies. This massive on-line system is expected to be completed by 2004 and will allow users to *file income taxes, apply for employment insurance, and transact other types of business with the government through one portal. The latest security technologies, including strong encryption, digital signatures, time-stamping and signature validation will be built into the system.*

Lifelong Learning

In 1996 the federal government established the *Office of Learning Technologies (OLT)* within Human Resources Development Canada (HRDC), as a partner in building a culture of lifelong learning. OLT's mission is to "work with partners to expand innovative learning opportunities through technologies".

OLT's role is to raises awareness about the opportunities, challenges and benefits of technology-based learning and to act as a catalyst for innovation in the area of technology-enabled learning and skills development. OLT promotes use of learning technologies, supports assessment, research and testing, and acts to increase the availability and sharing of knowledge and quality information about learning technologies.

The organisation supports, in particular, opportunities to demonstrate Canadian learning products and services in partnership with developers, educators, employers, employees, trainers and learners, and also promotes development of *Community Learning Networks* (CLNs) which enable lifelong learning and community capacity-building through the use of network technologies.

Projects are usually developed in partnership with other organisations such as universities, colleges and other learning institutions; sector councils; labour; private sector and business associations; all levels of government; non-governmental organisations and community groups. Projects are generally cost-shared. Projects funded by OLT usually have broad impact or transferability and are designed to test the application and effectiveness of learning technologies in various settings, such as the workplace, community learning centres or homes, especially with regard to the needs of adult (or life-long) learners.

To support its efforts, OLT has created one of the most comprehensive web sites on learning technologies in Canada and sponsors on-line demonstrations of learning technologies at sites across Canada in conjunction with partners and developers. OLT also sponsors face-to-face and on-line forums and workshops on issues related to learning technologies.

The Community Learning Network initiative includes the funding of pilot projects, providing an information- and expertise-sharing resource, and a "CLN Toolkit" to help communities establish learning networks.

OLT aims to sponsor lots of individual projects in partnership with other organisations. Examples of projects sponsored to date include the following:

❑ ***A Strategic Technology Applications for Rural Telework (START)*** project involved a partnership between the College of the North Atlantic, the Open Learning and Information Network (OLIN), and OLT, which evaluated an interactive, web-based model to deliver existing college-level, home-based study program (Teleworking) to adult learners in

rural communities in Newfoundland and Labrador.

❑ A TeleLearning Institute Pilot Study at the University of Waterloo in Ontario, focused on emerging technology professions for two reasons: (i) knowledge workers who have a technology infrastructure; and (ii) *personal expertise* to support telelearning tools in the workplace and whose need for new learning structures is more pronounced than in established professions due to the rapid rate of knowledge development, the scarcity of more formal educational opportunities and associations, and the frequent lack of professional peers in the workplace.

❑ **A Project to test the Effectiveness of Interactive CD-ROM Based Learnware** to train production workers in the injection moulding industry. Although the results of using interactive CD ROM based learning product to teach employees of plastics companies the safe start up, moulding and shut down procedures for an injection moulding machine proved disappointing (Only 35.7% of those trained on the learnware achieved passing grades when they came to their practical hands on test) a great deal of valuable insight was gained. Summaries of all projects funded can be found on the HRDC/OLT web site at http://olt-bta.hrdc-drhc.gc.ca/publicat/reports.html.

One of the most interesting and interactive aspects of OLT's web-site is its on-line forums, where interested participants can discuss issues related to various aspects of learning and training, particularly *Community Learning Networks* and pose questions to OLT program managers. The forums section allows users to provide links to non-government sites and, hence, to broaden the range of discussion and knowledge shared.

Since life-long learning requires significant public involvement in both objectives and methods, this OLT initiative has recognised the critical importance of strong public interaction and represents an important stage on the road to electronic governance.

The Canadian government is also cognisant of the fact that in such a rapidly changing world new measures are needed to assess and deal with the multitude of impacts information technology is having. Areas of impact include the public administration of government, the electronic delivery of services and the new ways in which governments now have to deal with citizens who are now becoming used to interactive transactions. One of the tools being used to accomplish the transformation is knowledge management.[16]

Some Canadian Federal Government Initiatives in Knowledge Management

We need to develop resilient people who operate in nimble organisations where learning is considered a crucial asset. Most organisations, and the TBS and the federal government are no exception to this, are seeking to encourage knowledge-sharing at a faster rate than ever before, across organisational boundaries and disciplines.[17]

The emergence of the **Corporate Renewal and Knowledge Management Office in the Treasury Board Secretariat** is a significant development. There has been an informal, Interdepartmental Knowledge Management Task Force in existence for over two years. While the 40 members on this Task Force represent most federal agencies, the members have come largely from middle management and have not been seen as senior strategic decision-makers in the application of KM. With the emergence of the Office in the senior echelons of the Treasury Board, knowledge management is now working its way into the strategic thinking of the Federal Government. Support from this level means that the knowledge management agenda should move significantly forward in the subsequent months.

At **Human Resources and Development Canada (HRDC)** a group of Assistant Deputy Ministers, together with the Deputy Minister, Claire Morris, have established **a Knowledge Management Task Force** that cuts across all business lines and regions to develop related strategies to meet future challenges. Four teams are looking at:

- The design and production of knowledge;
- Human capacity;
- Delivery of information to clients and employees; and
- Governance and accountability issues.

The **Service and Innovation Initiative in Treasury Board** is being delivered, in conjunction with Human and Resources Development Canada, Industry Canada, and others, to ensure the integrated delivery of services to citizens, whether these services originate with the Federal Government, or with other governments and partners. Maximum use is being made of technologies that offer a user-friendly, timely and cost-effective interface.

Health Canada has launched a major **knowledge management initiative** in pursuit of a larger goal – the creation of a *Canada Health Infoway,* or Pan Canadian Health Information Highway. As described in the report, *Canada Health Infoway: Paths to Better Health, "the Canada Health Infoway can help significantly to improve the quality, accessibility, portability and efficiency of health services across the entire spectrum of care. [This report] is also about how the Infoway can enable the creation, analysis and dissemination of the best possible evidence from across Canada and around the world as a basis for informed decisions by patients, citizens, informal caregivers, health professionals and providers, and health managers and policymakers."* [18]

Health Canada is deploying several strategic initiatives to achieve its vision of effective knowledge management to expand the evidence base for health planning, improve policy planning and enhance services delivery. These include the following steps:

- **Develop a knowledge culture** including the establishment of a Chief Knowledge Officer, the creation of a capacity to improve and *implement knowledge strategy* (frameworks, priorities, plans), and to *lead knowledge culture initiatives* (communities of practice, knowledge-maps, knowledge sharing). Knowledge business specialists would ensure that knowledge, information and data are developed, found or acquired and that technology tools (discussion databases, intranet) are identified and built, to meet business needs.

- **Conduct analysis and research** by creating an internal capacity (staff, analytical frameworks, methodologies, publications, reports, briefing notes, seminars, conferences), influencing the national health research agenda, and developing skills (all staff), and "absorptive" capacity.

- **Create a health infostructure** by identifying, nurturing, investing and partnering in projects, consulting stakeholders, and developing and influencing policy and standards (privacy, security, connectivity).

- **Provide enterprise IM and IT services** by developing and maintaining architectures, infrastructure and tools.

While the above examples are of embryonic KM initiatives within the federal government, it is clear that government recognises the value of KM principles to adapt to the demands of this knowledge-based environment. Public sector organisations are beginning to capitalize on the four

identifiable elements of knowledge management:

- ❑ Collective information resources;
- ❑ The intellectual capital of individuals;
- ❑ The multitude of external resources available to government; and
- ❑ The input of citizens who now have the capacity to play an interactive role in the process of government.

It is also clear that *success of these initiatives will depend upon both leadership and commitment at senior levels of government organisations to break down barriers and "silo thinking". It will also require more refined use of one of the most important resources – the intellectual capital of people who work in the public service.*

Building on in-house knowledge presents a strong challenge. It is not sufficient simply to tell employees in an organisation that they need to share their knowledge. There has to be understanding as to what particular pieces of knowledge held by the individual are important to the organisation. Following are some basic principles that can be applied to this process:

- ❑ Recognising and building on in-house individual expertise;
- ❑ Formalising to varying degrees the harnessing of knowledge through the use of appropriate systems;
- ❑ Passing on knowledge;
- ❑ Developing knowledge from an individual asset into a corporate/organisational one;
- ❑ Encouraging the growth of an open corporate culture in which knowledge is viewed as being central to organisational development and to the efficiency of methods of business operation.

To be successful, KM must be embraced by the leadership of the organisation. More importantly, it must be a key component in the strategic vision of the organisation. An additional, vital component is that there need to be designated officials and supporting staff to reorganise the organisation and implement the principles of knowledge management to maximum benefit.

It is inherently clear that virtually every employee is a potential source of data, information and insights that constitute, in one form or another, a source of knowledge that is or could be invaluable to the goals and aims

of the organisation. The degree to which an organisation manages knowledge to its advantage and forwarding of its strategic vision, is the degree to which the leaders of the organisation can draw upon this source of potential wealth.

Electronic Service Delivery On-line Database

The Institute of Governance, located at the University of Ottawa, recently announced the setting up of a Clearing House for Electronic Service Delivery.

In their announcement the Institute announced that the Electronic Service Delivery (ESD) Clearing House is now on-line. This is a one-stop shop which provides a direct link to the best new research, case studies, policies and tools in electronic service delivery today.

Born as a project of the Public Service Chief Information Officers Council (PSCIOC) and developed by the Institute of Governance (IOG), the ESD Clearing House provides a unique opportunity for resource sharing and collaboration across governments and jurisdictions.

The Clearing House is available on-line in the IOG's existing web site for governance issues, Policity.com (http://www.policity.com/esd), where it is sure to become an essential tool for program managers developing ESD in any department.

"Last year's PSCIOC Lac Carling Congress an annual conference bringing together the banks, municipal, provincial and federal governments and the IT vendor community to establish "best practices" for e-government-recognised the importance of ESD in today's public service and sparked the idea for the Clearing House. People no longer want to wait in line for service at government offices. They expect service that fits with their busy schedules, is easy-to-use and available any time of day. If government managers want to produce the best service delivery for their programs, they have to become aware of the resources, policies and research available to guide them." [19]

The PSCIOC saw the importance of resource sharing across jurisdictions and approached the Institute Of Governance to develop a web site showcasing initiatives and information from across the country. After several months of design and planning the ESD Clearing House is now on-line.

Content is updated regularly, and currently includes resources from the federal and provincial governments, the United States, Australia, Singapore, United Kingdom and some Canadian municipalities.

Some Regulatory Measures

The government has also moved extensively into electronic commerce as the preferred means for the government to conduct its business with citizens and the private sector. To facilitate this, the government has moved to resolve the technical and policy issues required to establish a secure means of electronic communications with government, including use of digital signatures. Their public key infrastructure is currently being put in place. Use of single business identification number (BIN) by private sector businesses starting in 1997 has paved the way for one-stop electronic service for businesses.

Canada has had a Privacy Act covering the federal public sector since 1983. All but one of the provinces and all the territories have similar laws. However, up until April 2000, only Quebec had privacy laws that also covered the private sector. The federal government set out to remedy this. There is now federal privacy legislation on the books in Canada that seeks to create secure environments when people go on-line to engage in transactions. The new privacy act sets out clear rules on how personal information is to be treated and gives citizens the right of access to, and correction of, their personal information.

The Protection of Personal Information and Electronic Documents Act, C-6, is an extensive piece of privacy legislation which goes well beyond simply protecting on-line transactions. The Act covers all forms of records, electronic records included. This new law will initially cover the federally regulated private sector. Within three years after coming into force the law will then extend to all organisations that conduct any form of commercial transactions across provincial borders. The federal law will apply if a provincial government does not have such a law in place. It is expected that most of the provinces in Canada will develop their own legislation within the next few years.

The legislation being proposed by the federal government is expected to comply with the European Directive on Data Protection. That Directive contains language that states that personal information on European citizens may not be transferred to a jurisdiction that does not have adequate privacy protection standards. In Canada the government has opted for

legislation. In the United States the Administration has currently rejected the need for legislation but are pushing companies to develop comprehensive privacy policies. The US government is currently in negotiations with the European Commission to reach an agreement on what standards will be necessary to comply with the demands of the European Data Protection Directive.[20]