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# ELECTRONIC COMMERCE IN CANADA

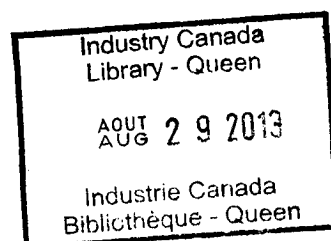


PRIORITIES  
FOR  
ACTION

Canada

**ELECTRONIC COMMERCE IN CANADA**  
**PRIORITIES FOR ACTION**

**Prepared by the Electronic Commerce Task Force, Industry Canada**



**July 1998**

## PREFACE

Electronic commerce is revolutionizing the way we do business, interact as citizens and consumers, and deliver services. Global electronic commerce promises to act as an engine of economic growth and increase productivity worldwide, with transactions estimated to rise to over US \$300 billion by the year 2000. Like most industrialized countries, Canada is putting in place domestic policies aimed at realizing the full economic and social potential of this emerging technology.

Canada has the potential to become a world leader in the development and use of electronic commerce. Our information infrastructure is world class, we have innovative and competitive entrepreneurs, and Canadians are "early adopters" of new applications. For example, we have the highest per capita world use of debit cards. But we also need the right policy framework and applications to make electronic commerce grow in Canada, and we need to move fast!

Domestic policies can support electronic commerce in Canada and can also help to position Canada internationally. In this respect, Canada has a unique opportunity to help shape the global framework for electronic commerce through its role as host of the OECD Ministerial Conference on Electronic Commerce, taking place in Ottawa, October 7-9, 1998.

*Electronic Commerce in Canada: Priorities for Action* identifies electronic commerce priorities for action from a Canadian perspective and constructs a framework and timeframe for addressing these issues. Consensus is building around this agenda, with support from the private sector and consumers as well as all levels of government.

This publication will be followed by the release of *A Canadian Strategy* and a *Report on Progress* in the Fall of 1998. Further information on electronic commerce in Canada, along with this document, is available on our Website: <http://e-com.ic.gc.ca>.

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# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b>	i
<b>PART A: OVERVIEW</b>	
Why is Electronic Commerce Important?	1
Towards a Canadian Electronic Commerce Strategy	4
International Context: OECD Ministerial Conference on Electronic Commerce	5
Conclusion	8
<b>PART B: POLICY ISSUES</b>	
Building Trust in the Digital Marketplace	11
Clarifying Marketplace Rules	23
Strengthening Information Infrastructure	31
Trade Policy Issues	39
<b>CONCLUSION: NEXT STEPS</b>	40

**ELECTRONIC COMMERCE IN CANADA: PRIORITIES FOR ACTION**

*Consumer and business issues key to the development of electronic commerce include:*

- ***Building trust in the digital marketplace***, through security, privacy, and consumer protection
- ***Clarifying marketplace rules*** to ensure that they are applicable to a digital world and do not create barriers - including legal frameworks, taxation and intellectual property protection
- ***Strengthening the information infrastructure***, through network access and availability, open networking, and skills and awareness

*Policy development and consultation are underway in each of these issue areas. The Summit on Electronic Commerce, April 30th 1998 and the Federal-Provincial-Territorial Information Highway Ministers meeting, June 12th 1998, produced a high level of consensus on priority activities for governments and the private sector . . .*

- The Summit on Electronic Commerce, co-hosted with the Information Technology Association of Canada (ITAC), provided an opportunity for Canadian industry, consumer and government leaders to take stock of Canada's emerging electronic commerce policy and identify where future efforts should be directed.
- A broad consensus was reached on defining electronic commerce issues and priorities for action and on the need for an urgent response from governments and industry.
- The Federal-Provincial-Territorial Information Highway Ministers agreed on the key importance of electronic commerce in creating new markets and jobs and the need for governments to provide the necessary policy frameworks.

*Electronic commerce is global by nature - in addition to developing innovative domestic policies, Canada has an opportunity to help shape the global framework for electronic commerce through hosting the OECD Ministerial Conference on Electronic Commerce, October 1998 . . .*

- The Ottawa conference will be an important milestone in defining the international policy agenda. Ministers from OECD member countries, the private sector and international organizations will meet to review their respective plans and priorities for establishing a favourable environment for the development and use of global electronic commerce. As host, Canada has a unique opportunity to show leadership in policy and technology areas involving both the private sector and government.

## EXECUTIVE SUMMARY

ii

***This paper summarizes the status of major electronic commerce issues, in Canada and in a global context. Consultations are underway or recently concluded in all major issue areas, with government responses expected over the coming months . . .***

Issue	Consultation	Product
<i>Building Trust in the Digital Marketplace:</i> Security	-Cryptography Policy Framework discussion paper and consultation <a href="http://strategis.ic.gc.ca/crypto">http://strategis.ic.gc.ca/crypto</a>	-Cryptography policy: Fall 1998
Privacy	-Protection of Personal Information discussion paper and consultation <a href="http://strategic.ic.gc.ca/privacy">http://strategic.ic.gc.ca/privacy</a> -Uniform Law Conference of Canada (ULCC) draft legislation	-Federal legislation: Table Fall 1998  - Draft model law: August 1998 (for discussion)
Consumer protection	-Consumer Protection Framework discussion paper and consultation	-Canadian Consumer Guidelines: Fall 1998
<i>Clarifying Marketplace Rules</i> Legal Frameworks	-Justice review of federal statutes -Harmonizing work by ULCC	-Federal legislation: Table Fall 1998 -Various legislative and policy proposals
Taxation	-Report to the Minister of National Revenue from the Minister's Advisory Committee on Electronic Commerce, April 30, 1998	-Response to Revenue Canada Advisory Committee Report: Fall 1998
Intellectual Property Protection	Consultations on: - implementing WIPO treaties - examining database protection	-Discussion paper on WIPO treaties implementation: Summer/Fall 1998 -Legal study on database protection: Summer 1998
<i>Strengthening Information Infrastructure:</i> Open Networking	-Initial Standards Working Group Roundtable June 23, 1998	- Outline of Canadian Strategic Framework for Standards: Fall 1998 - Canadian response to international framework: Fall 1998
Government as a Model User	-Public Key Infrastructure - Working group on policy development	-Operational for federal public sector: December 1998

## **BUILDING TRUST IN THE DIGITAL MARKETPLACE**

### ***Security***

- As the government moves to defining an updated policy on cryptography, the policy must:
  - Help realize the economic and social benefits that can be derived through the use of cryptography in secure global electronic commerce
  - Ensure business and public confidence in the use of certification authorities, other cryptographic service providers and product suppliers in Canada
  - Respond to the challenges when lawful access to encrypted real-time communications or encrypted stored data is mandated
  - Respond to the challenges posed to national security information-gathering capabilities by the international spread of strong cryptographic products

### ***Privacy***

- The federal government is moving to draft privacy legislation for federally regulated industries, which strikes a balance between consumer demands for effective protection and business concerns over the administrative burden. Harmonization of federal, provincial and territorial actions across Canada is a key issue.

### ***Consumer Protection***

- Consumers using electronic commerce should be provided with the same protection as that provided by the laws and practices applying to existing forms of commerce. In pursuing this objective, the right balance needs to be defined between adjustments to the existing regulatory structure, use of available and emerging technologies and development of voluntary codes of business conduct.

## **CLARIFYING MARKETPLACE RULES**

### ***Legal Framework***

- In addition to policies, voluntary codes and guidelines, some statutory reform to implement electronic commerce in Canada may be required. Attention is immediately focused on ensuring the recognition of electronic signatures in law, with a view to making statutes media-neutral, ensuring the recognition of "secure" electronic signatures, and creating evidence rules for electronic records.

**CLARIFYING MARKETPLACES RULES (con'd)*****Taxation***

- Challenges are presented due to the anonymity and borderless nature of cyberspace. Key issues are those of tax enforcement, determining jurisdiction to tax and impact of disintermediation on tax collection.

***Intellectual Property Protection***

- The digital environment makes it easier to copy or modify content, potentially jeopardizing intellectual property rights of creators. Issues being considered are how to implement WIPO treaty provisions, whether additional intellectual property protection, if any, is desirable for databases in Canada, and liability of Internet service providers.

**STRENGTHENING INFORMATION INFRASTRUCTURE*****Network Access and Availability***

- Electronic commerce will not grow rapidly unless Canadians have universal and affordable access to the Information Highway through telecom policy and regulation, network infrastructure and bandwidth, and support for targeted applications. Canada also needs to consider the impact of changes in Internet governance from control by the U.S. government to the private sector.

***Open Networking***

- Common standards for both interoperability and language independent communications are required for electronic commerce to be globally adopted. Canada is working through international organizations to establish norms for the interoperability of networks and universal communications.

***Skills and Awareness***

- Increased use of electronic commerce will require development of digital skills by business, especially SMEs, and consumers. CAP and SchoolNet Programs provide a platform, along with initiatives such as Community Storefronts.

***Government as a Model User***

- The Government of Canada has stated that electronic commerce will become the preferred means to conduct business. Early government leadership builds trust in the marketplace. For example, the Government of Canada Public Key Infrastructure (GOC PKI) is an early example of secure electronic commerce.



## PART A: OVERVIEW

### I. WHY IS ELECTRONIC COMMERCE IMPORTANT?

*Electronic commerce offers the potential to transform how business is conducted . . .*

Electronic commerce is not new: as well as Internet commerce, it includes transactions that take place by telephone, fax, automated banking machine, and credit and debit cards, as well as electronic data interchange (EDI) through private networks.

Private electronic data exchange networks are well established for transactions between suppliers. Most major manufacturers and retailers rely on EDI to control movement of stock and track sales, while the international banking community relies on private networks to transfer funds worldwide.

What is new is the explosive growth of the Internet. Unlike other networks, the Internet is global and open. As such, it transforms the potential for commercial transactions from a known set of businesses in a closed private network, to an unlimited pool of consumers and businesses in an open network. Businesses are able to interact not only with suppliers, but

#### **Defining electronic commerce**

Electronic commerce is the conduct of business activities - buying, selling and transactions of all kinds - by means of communications and computer technologies. It includes transactions that take place by telephone, fax, ABM, credit card, debit card, EDI, and Internet.

#### **Electronic commerce exemplifies trends transforming the 21st century economy**

**Globalization:** Allows firms and consumers to transact globally almost as easily as locally or domestically.

**Shift to a Knowledge-Based-Economy:** Natural means for exchanging the knowledge and information products driving economic growth in the KBE.

**Information and computer technologies:** Transforms the conduct of business - transactions, business processes, the supply chain - much as automation and robotics transforms manufacturing.

also with consumers world-wide; consumers have access to a potentially unlimited global array of products and services; and citizens can access governments directly.

It is this potential which has attracted the attention of the private sector, governments and consumers. The more consumers decide to conduct their business using this electronic platform, the greater its impact on the economy. Potential impacts include the creation of new products and markets, as well as displacement of traditional distribution chains. Transaction and distribution costs will be lowered, and market access and consumer choice improved, resulting in increased productivity and economic growth.

***The potential consumer use of the Internet has not yet been realized . . .***

Widespread consumer use of the Internet for electronic commerce has not yet occurred. Just over 13% of Canadian households have Internet access. If access from work, school and other institutions is included, 30% of Canadians are Internet users. Of these 30%, only about 1 in 10 have made purchases over the Internet - a number which has remained essentially static in the last year (*ACNielsen, 1997*).

The types of goods and services being purchased are predominantly information related. A survey by International Data Corporation in 1997 showed that Canadian Internet users went on-line primarily to bank, and to purchase software, publications, information, entertainment products, and education and training courses.

***. . . yet enormous potential exists for growth . . .***

While this level of activity may seem low, growth potential is huge, with extraordinary projections for global growth currently estimated at 200% annually (*OECD - Measuring Electronic Commerce*). These projections reflect the range of potential applications, both by users and providers of electronic commerce:

**Users of electronic commerce:** For existing firms, electronic commerce can facilitate both transactions with suppliers (business-to-business) and consumers. The range of possible applications includes product development, inventory, promotion and sales, and aftersale client support. Dimensions of transactions could include information exchange only; online ordering, with the transaction completed offline; and payment on-line, through credit card, previously established account, or e-cash.

Firms offering both physical goods and intangibles can benefit from electronic commerce. Electronic commerce also allows the creation of virtual firms, without any traditional physical presence.

**New infrastructure:** The provision of electronic commerce requires building a new infrastructure of network service providers (e.g. Internet access providers); hardware (e.g. routers, servers); software; and enabling services (e.g. e-payment, authentication/ certification services, advertising). All of these constitute significant existing and new growth opportunities.

***Frameworks must be adapted to realize this growth potential . . .***

Existing legal and commercial frameworks which govern how businesses transact with each other and with consumers were designed in a non-digital age. It is only in the last few years that global electronic commerce has been possible. As consumers and business venture into this new territory, they are looking to ensure that protection provided in the digital world is equivalent to that in the physical, and that barriers to electronic commerce are removed.

Consumers want to make sure that transactions are secure and private and that recourse mechanisms exist. Business want similar ground rules, as well as global rules for intellectual property, legal frameworks, and taxation. In response to these issues, governments and the private sector worldwide are examining both domestic and international policies and practices which affect electronic commerce.

### **Electronic Commerce Growth Potential**

#### ***Users of electronic commerce***

- Firms providing:
  - Physical goods (e.g. books, groceries)
  - Intangibles (software, travel, entertainment)
  - Intangibles embedded in physical goods (embedded software)
- These firms can exist physically, or "virtually"- only on the Internet

#### ***Providers of electronic commerce infrastructure***

- Network service providers (e.g. Internet access)
- Hardware (e.g. routers, servers)
- Software to run hardware
- Enabling services (e.g. certification authorities)

## II. TOWARDS A CANADIAN ELECTRONIC COMMERCE STRATEGY

*The objective of the Canadian electronic commerce strategy is for Canada to be a world leader in electronic commerce by the year 2000 . . .*

To be a world leader in the electronic commerce, Canada must:

- Ensure consumers and business have the trust they need to transact business, through addressing security, privacy and consumer protection concerns.
- Update our commercial governance and legal frameworks to ensure they are applicable to and do not hinder electronic commerce.
- Ensure that Canadians are among the most connected people in the world to the Information Highway through strengthening our information infrastructure.

### Elements of a Canadian Electronic Commerce Strategy

#### ***Building Trust in the Digital Marketplace***

1. Security: Cryptography
2. Privacy: The Protection of Personal Information
3. Consumer Protection

#### ***Clarifying Marketplace Rules***

4. Legal Framework
5. Taxation
6. Intellectual Property Protection

#### ***Strengthening Information Infrastructure***

7. Network Access and Availability
8. Open Networking
9. Skills and Awareness
10. Government as a Model User

As a result of these actions, Canada should be a location of choice for:

- Development of electronic products and services
- Use of electronic commerce by consumers, business and governments
- Investment by both domestic and international business

To achieve this goal, Canada needs to move quickly to set its own house in order, and to lead with other countries in developing the global arrangements for electronic commerce to operate worldwide.

### III. INTERNATIONAL CONTEXT: OECD MINISTERIAL CONFERENCE ON ELECTRONIC COMMERCE

*Electronic commerce is global in scope, so domestic policies will have limited effect unless they are part of a larger global international framework . . .*

Electronic commerce is intrinsically global in nature. This has two implications for Canada: the rate of overall global growth will depend on the ability and will of national governments to collaborate; secondly, the impact of Canada's domestic policies is largely determined by international forces. A key objective, both for Canada, and for the global economic community, is to secure an international action plan, agreed to by all key marketplace players - the private sector, governments, and international organizations.

*National governments and regional trading blocks are working to develop electronic commerce strategies . . .*

Several of Canada's major trading partners, notably the United States, the European Union and Japan, have announced electronic commerce strategies. Countries are now further developing positions and approaches, both domestically and through international organizations.

*Electronic commerce challenges the international community to think beyond national boundaries, and to do so with speed . . .*

Electronic commerce spans a broad range of issues addressed by issue specific international organizations (see box). For example, UNCITRAL is developing model legal frameworks for electronic commerce

#### Electronic Commerce Strategies

##### **European Union**

A European Initiative in Electronic Commerce, April 15, 1997  
[www.ispo.cec.be.Ecommerce/initial.html](http://www.ispo.cec.be.Ecommerce/initial.html)

Bonn Ministerial Declaration, Industrial Declaration, July 8, 1997  
[www2.echo.lu/bonn/final.html](http://www2.echo.lu/bonn/final.html)

##### **WTO**

Electronic Commerce and the Role of the WTO  
[www.wto.org/wto/publicat/newpubl.htm](http://www.wto.org/wto/publicat/newpubl.htm) (\$)

##### **Japan**

Towards the Age of the Digital Economy, May 1997  
[www.wcoomd.org/ecjapan.html](http://www.wcoomd.org/ecjapan.html)

##### **United States**

A Framework for Global Electronic Commerce, July 1, 1997  
[www.iitf.nist.gov/eleccomm/ecom.html](http://www.iitf.nist.gov/eleccomm/ecom.html)

and digital signatures. WIPO is addressing issues pertaining to intellectual property, trade-marks and database protection. The ISO is working on standards for facilitating culturally (language) neutral Internet transactions. The WTO is looking at the trade implications of electronic commerce.

A few “regional” international organizations are looking across issue areas. *APEC* is integrating electronic commerce issues in discussions across member economies, including network access and availability. The *EU* is examining issues common to member countries.

The *OECD* began a process in 1997 to comprehensively examine all aspects of electronic commerce. This process began with a conference focussing on consumer views in March 1997, followed by an examination of business views in November 1997, and will culminate with the establishment of a global action plan for electronic commerce in Ottawa, October 7-9 1998.

### International organizations working on Electronic Commerce

#### *Issue specific*

International Commercial Law (UNCITRAL)  
International Organization for Standardization (ISO)  
International Telecommunications Union (ITU)  
Internet Law & Policy Forum  
United Nations Conference on Trade and Development (UNCTAD)  
World Customs Organization (WCO)  
World Intellectual Property Organization (WIPO)  
World Trade Organization (WTO)

#### *Horizontal*

APEC  
EU  
FTAA (Free Trade Agreement of the Americas)  
OECD

***The purpose of the OECD Ministerial on Electronic Commerce is to form an international action plan by governments, the private sector and international organizations addressing key electronic commerce issues . . .***

**OECD/Government Agenda:** The OECD’s role is to bring governments together to draft policy guidelines in key areas. There is general agreement among countries and industry that governments need to establish policy guidelines for electronic commerce in:

- The protection of personal information and privacy
- The administration and enforcement of taxation rules
- Consumer protection

- Mechanisms to facilitate the use of electronic signatures for the authentication of documents

Each of these issues has been the subject of preparatory work within the OECD and its constituent bodies and by national governments, with the goal of developing specific proposals for consideration by Ministers in Ottawa in October 1998.

**The Private Sector Agenda:** A series of business and consumer issues will be addressed by the private sector leading up to, and as part of, the Ottawa Conference. One

example of current work by the private sector is the development of self-regulatory measures, such as filtering technologies and voluntary codes of conduct, to deal with offensive and harmful content on the Internet. Proposed measures and mechanisms to deal with world-wide governance of the Internet are also receiving significant attention within the private sector.

**International Organizations:** The OECD conference will take into account the ongoing work of other international organizations. Organizations such as the WTO, WIPO, UNCITRAL and ITU are addressing key issues relating to electronic commerce in areas such as international trade, commercial law and intellectual property. Their efforts and future work plans will contribute to the broader action plan to be considered and endorsed by Ministers in Ottawa.

*Canadian companies have an opportunity to showcase their technologies . . .*

Practical applications of electronic commerce will be showcased as part of the Ottawa conference. Preference will be given to demonstrations which are collaborative, have international partners, and focus on the main themes of the Ministerial meeting.

**The OECD Ministerial Conference on Electronic Commerce, Ottawa, October 7-9, 1998**

*"The Ottawa Conference should serve as a major milestone in the efforts of Member countries to draw maximum economic and social benefit from the opportunities provided by electronic commerce."*

*Source: Secretary General's Note to the OECD Council, January 1998*

#### IV. CONCLUSION

Electronic commerce promises to be a powerful tool for economic growth and a key platform for the knowledge-based economy.

Canada's goal is to be a world leader in the development of electronic commerce, becoming a global centre of excellence. As such, we need to move quickly to develop our domestic policies, and to shape the global agenda. The OECD Ministerial Conference on Electronic Commerce presents a key opportunity for Canada to make this happen.

Canadian business and government have a tradition of working together to achieve goals in Canada's interest. Electronic commerce represents an emerging area where this tradition can be continued - the private sector taking lead, supported by appropriate and responsive government frameworks.

**Private sector and governments working together to realize the promise of electronic commerce . . .**

*"If electronic commerce can benefit from the global free trade and investment agenda, the benefits will accrue not only to the producers of goods and services, the distributors and consumers, but there will be substantially more economic growth and job creation. . . .*

*Governments must play a supporting role but the private sector must take the lead just as it has to date in pursuing global free trade and investment. International cooperation is nevertheless essential for the electronic world is a global issue, without borders. Business will develop new markets, new products and new trading relationships, but for electronic commerce to thrive, industry must seek with governments to establish a stable framework for transactions that will inspire confidence."*

*Source: Address by the Honourable Donald Johnston, Secretary-General of the OECD, Dismantling the Barriers to Global Electronic Commerce, Turku, November 1997*



## **PART B: POLICY ISSUES**

### **Section One: *Building Trust in the Digital Marketplace***

Security: Cryptography	11
Privacy: The Protection of Personal Information	15
Consumer Protection	20

### **Section Two: *Clarifying Marketplace Rules***

Legal Framework	23
Taxation	25
Intellectual Property Protection	29

### **Section Three: *Strengthening Information Infrastructure***

Network Access and Availability	31
Open Networking	34
Skills and Awareness	36
Government as a Model User	37

### **Section Four: *Trade Policy Issues*** 39

## SECTION ONE: BUILDING TRUST IN THE DIGITAL MARKETPLACE

### SECURITY: CRYPTOGRAPHY

*Business and consumers need to be assured that information and transactions are safe and secure - cryptography makes this possible . . .*

Security of transactions is the paramount consumer concern with the use of electronic commerce. Focus group testing showed that many consumers have contemplated Internet purchases, but stopped short of keying in a credit card number. Consumers need to be assured that their payment will not be intercepted, and that any financial information goes to a legitimate merchant. Business is concerned with protecting commercial information, and ensuring that parties to a transaction are legitimate.

These concerns can be met by encryption and digital signatures (*see box*). By using digital “keys” (unique combinations of ones and zeros) any type of information (text, data, voice or images) can be encrypted so that only individuals who hold the right key are able to decrypt the message. Digital key pairs can also be used to “sign” documents. A supporting infrastructure of Certification Authorities (CAs) would verify an individual’s or firm’s identity and bind this to signature keys by generating certificates which can be used to prove their attributes or identity to others.

#### What is cryptography?

Cryptography provides two ways of making secure transactions possible: encryption and digital signatures.

Encryption ensures that transactions are *confidential* - that is, that no one but the intended recipient accesses or reads a message or data, by “scrambling” the message or text.

Digital transactions pose additional challenges of identifying parties involved (*authentication*), verifying that the transaction took place (*non-repudiation*), and that the message was not modified (*integrity*). Digital signatures solve these problems through the use of a unique electronic identifier created by a computer and attached to an electronic document.

***Traditionally, cryptography has been the almost exclusive preserve of governments . . .***

Cryptography was used to protect military and diplomatic secrets and was predominantly embedded in hardware. Regulations are designed to prevent the movement of certain goods that may not be in the strategic interest of Canada or its allies. Most countries, including Canada, control the export of strong encryption products. These export controls are governed by the Wassenaar Arrangement, a 33 nation agreement providing a framework for addressing the new security threats of the post-Cold War World.

**What is Canada's existing cryptography policy?**

Canada restricts the export of "strong" encryption, in the form of customized software or hardware, to countries other than the United States. There are no controls on mass market or public domain software, or to any exports to the United States. Under an interim policy, export of 56-bit customized encryption products is permitted to most countries.

***Given cryptography's greatly expanded role as an enabler of electronic commerce, Canada is reviewing its cryptography policy . .***

Cryptography is seen as an enabling technology which provides the assurance that consumers and business need in order to have confidence in conducting electronic transactions. Yet, the very elements that make cryptography attractive for reasons ranging from privacy to business security, can also conceal activities which pose a threat to public safety.

Developing a cryptography policy for Canada means weighing multiple objectives such as:

- Help realize the economic and social benefits that can be derived through the use of cryptography in secure global electronic commerce
- Ensure business and public confidence in the use of certification authorities, other cryptographic service providers and product suppliers in Canada
- Respond to the challenges when lawful access to encrypted real-time communications or encrypted stored data is mandated
- Respond to the challenges posed to national security information-gathering capabilities by the international spread of strong cryptographic products

***A discussion paper outlined options for public comment . . .***

Released on February 20, 1998, the discussion paper does not make policy recommendations, but clearly sets out the parameters of debate. Three areas are examined.

**A Cryptography Policy Framework for Electronic Commerce**

Discussion paper available at  
<http://strategis.ic.gc.ca/crypto>

**Encryption of stored data:** At issue is the extent of law enforcement access to confidentiality keys. Options include: letting the marketplace determine who holds keys with no new laws or licensing conditions; defining and promoting a minimum standard or set of practices which include data or key recovery by businesses or individuals; or mandating law enforcement access through legislation, which would prohibit the use of non-key recovery products and set conditions for certification authorities.

**Encryption of real-time communications:** At present, carriers served with a court order are obliged to assist in the decryption of encrypted communications to the extent they are capable of doing. The options are to maintain the status quo; to legally impose requirements on all federally-regulated communications carriers that provide encryption services; or to combine the legislated requirements on carriers with restrictions on certification authorities.

**Export controls:** The options are to relax controls, perhaps on the basis of what is available in foreign markets; to maintain the status quo; or to extend export controls to cover mass market and public domain software, perhaps coupled with relaxations for key recovery.

***Comments on the Cryptography discussion paper closed April 21st, 1998 - a summary of comments will be available on the Strategis web site.***

*Legal aspects of establishing digital signatures, such as review of statutes and liability, are examined in the Legal Frameworks.*

### **Cryptography: International Considerations**

The *Wassenaar Arrangement* controls on encryption products sunsets at the end of October 1998 unless it is replaced or extended. The Wassenaar Experts Group will be conducting a series of meetings to try to consider the issue.

An *OECD Workshop on Cryptography Policy* was held in December 1997 to promote the OECD cryptography guidelines among emerging nations. Throughout the discussion, the crucial question was how to achieve balance among various interests at stake: national security/law enforcement; economic and social development; and protection of the rights of the individual. The workshop concluded that the policies and approaches of Member countries still differ in the way in which they balance the OECD guidelines, and that there is "great caution among governments to discuss international co-operation or alignment or cryptography policies"

The *OECD's Group of Experts on Information Security and Privacy* is preparing a report on national legislation relating to cryptography, including domestic controls on encryption, export-import controls, and mandated law enforcement access.

## PRIVACY: THE PROTECTION OF PERSONAL INFORMATION

*Along with security, protection of privacy is a prime concern of consumers and businesses using electronic commerce . . .*

Cryptography provides a tool for protecting the confidentiality of data. However, privacy involves broader policy questions than just confidentiality. Information privacy is defined as the right of individuals to determine when, how and to what extent they will share personal information about themselves with others. It is related to a series of other rights and values such as liberty, freedom of expression, and freedom of association.

*Current privacy protection is no longer enough . . .*

The existing privacy framework (*see box*) was designed in a time when governments were the main holders of personal information, when technology limited the creation and size of data bases, and when clear market distinctions existed between industry sectors (e.g. cable, telephone). These conditions no longer hold. The private sector is now a major collector and user of personal information, as information itself has become a commodity. Advances in information technology - network browsers and sophisticated software- make it possible to distribute information over all the networks of an organization, and potentially, via the Internet, worldwide.

### **What is Canada's existing privacy policy?**

#### ***Public sector***

The federal government and most provinces have legislation governing the public sector's collection, use and disclosure of personal information. The federal *Privacy Act* applies to all federal government departments, most federal agencies, and some federal Crown corporations. The Privacy Commissioner of Canada oversees the Act.

#### ***The private sector***

Protection in the private sector is sporadic and uneven. Only Quebec's *Act Respecting the Protection of Personal Information in the Private Sector* provides a detailed framework for the collection, use and disclosure of personal information.

In the rest of Canada, the Privacy Commissioner of Canada has described coverage as a "patchwork" of laws, regulations and codes from various federal and provincial laws.

Distinctions between information carriers has blurred. For example, both cable and telephone companies now offer Internet access, as do many unregulated small businesses. Pressures to change existing laws also come from other governments, notably the European Union, which is taking action to protect privacy in both the public and private sectors, and restricting trade with countries who do not meet these standards (*see international box below*).

***The Canadian Standards Association has provided the foundation for a common standard to protect personal information in the private sector . . .***

Canada has led the world in the development of a uniform voluntary code for the protection of privacy. The Canadian Standards Association (CSA) developed the *Model Code for the Protection of Personal Information*, adopted as a National Standard in 1996. The CSA Standard is a set of principles addressing two broad concerns: the way organizations collect, use, disclose and protect personal information, and the right of individuals to have access to personal information about themselves. Many firms in Canada have implemented the Standard, or are in the process of doing so.

The International Organization for Standardization (ISO) is considering the need for an international standard for privacy protection, and, if so, the CSA Standard could serve as a model.

***The policy objective is to couple voluntary codes with a regulated approach to privacy protection, based on light and flexible legislation . . .***

While the Standard provides solid protection, it is only a voluntary instrument, so there is no guarantee it will be widely implemented. Moreover, voluntary approaches often fail to provide for independent oversight or any way of ensuring effective consumer redress when there is a dispute. Legislation will ensure privacy principles are implemented, providing even protection for consumers. When there are problems, consumers will have mechanisms for recourse. Legislation can provide these assurances - it can be economically and socially efficient if there is no remedy and litigation is the only recourse.

Legislation will need to address the four key elements common to all data-protection laws:

- Obligations based on fair information practices
- Administrative arrangements for an overseeing body to ensure accountability
- Powers for overseeing authorities and judicial bodies
- Powers and responsibilities that will promote public awareness and ensure effective implementation of obligations

*... harmonized across Canada ...*

Some parts of the private sector are federally regulated, such as the telecommunications and banking industries, and interprovincial transportation. Other parts of the private sector, such as health care and education, fall under provincial jurisdiction. Harmonized protection of personal information that covers the entire private sector would be the best way to address the increasing mobility of information and guard against the creation of data havens.

If truly comprehensive privacy protection for all Canadians is to be achieved, federal, provincial and territorial governments will have to work cooperatively. The work of the Uniform Law Conference of Canada (ULCC), an independent group of provincial, territorial and federal legal advisors who promote the uniformity of legislation across the country, could provide the basis for a harmonized approach. A draft *Uniform Data Protection Act* is on the ULCC's 1998 agenda.

*As the federal government moves to draft privacy legislation for federally regulated industries, views on the form this legislation should take are being sought...*

Legislation needs to strike the right balance between the business need to gather, store and use personal information, and the consumer need to be informed about how that information will be used and

protected. A federal discussion paper has been released, posing issues of what companies will be required to do, and how these obligations will be enforced.

#### **The Protection of Personal Information**

Discussion paper available at  
<http://strategis.ic.gc.ca/privacy>



Questions include:

### **Establishing obligations**

- Is the CSA Standard the base from which to start drafting legislation?
- Should sectoral codes be recognized in the new law? If so, should they be binding?

### **Establishing compliance**

- Is registration necessary to ensure compliance with the law?
- What powers are needed to investigate possible cases of non-compliance and resolve disputes? . . . and to address violations of the law and compensate individuals who have been harmed?
- Should a central oversight authority be established to oversee the implementation of the new legislation, and if so, what powers should it have?
- Should a tribunal be established, or higher court be given the task of issuing binding decisions?

### **Establishing cooperation**

- How should responsibilities for protecting personal information in the private sector be shared among the provincial, territorial and federal governments?

*These questions are being examined with a view to table draft legislation for the federal jurisdiction by Fall 1998.*

## **The Protection of Privacy: International Considerations**

In 1995, the **European Union** enacted a privacy directive designed to harmonize data protection practices within the European Union. Not only does this directive require member states to adopt laws to protect personal information in both the public and private sectors, but these laws must also block transfers of information to non-member states that do not provide "adequate" level of protection. This directive has the potential to make the protection of personal information a major non-tariff trade barrier with Canada, and all other non-European trading partners.

The **International Organization for Standardization** is considering the need for an international privacy standard.

The **OECD** ratified *Privacy Guidelines* in 1980. However, not all member countries have implemented these guidelines; further, the guidelines may not meet the needs of networked environments.

The Committee for Information, Computer and Communications Policy (ICCP) of the OECD will conduct a survey of available instruments to assess their practical application in a networked environment and ability to meet objectives of the 1980 *Privacy Guidelines*. It would serve to identify gaps and barriers to interoperability and search for solutions to provide seamless privacy protection. On the basis of results of the study, a supplementary memorandum to the OECD Privacy Guidelines could be considered to provide guidance or standards for the implementation of the Guidelines on global networks across a range of instruments.

## CONSUMER PROTECTION

*Security and privacy are issues for consumers - they are also key issues for business and governments, and are dealt with in previous sections. Other consumer issues are the location/identification of merchants, accuracy of information provision, and redress mechanisms . . .*

Electronic commerce differs from traditional forms of sale, where the location and status of the trader is obvious, the goods can be personally examined, and a physical copy of the transaction details exist. These elements are missing from electronic transactions. Some issues include:

**Location/identification:** The vast majority of consumer transactions are face-to-face. Even in the case of distance selling, consumers can usually determine the location of the merchant by the telephone number, the payment instructions, or other means. Over open digital networks, this is no longer the case. The merchant need not maintain a physical presence, and the consumer is limited to identifying the merchant only by what is visible on the merchant's web page. Not knowing the location or identity of the merchant raises the risk of the transaction - fraud, failure to deliver, or inability to resolve disputes.

**Accuracy of information:** The Web is much like a catalogue. Consumers can look at a picture of an item or read a description of a product or service, but the possible purchase cannot be touched or handled. Information received from the Internet does not provide any guarantees of accuracy. Consumers need to be fully informed about product quality and the terms of the transaction. Existing laws on misrepresentation and deceptive marketing practices should apply.

### What is the existing consumer protection for Electronic Commerce?

Consumers are protected by consumer law which prevails within their jurisdiction - for example, laws protecting against fraud and misrepresentation. Most of the consumer protection framework lies within provincial jurisdiction, with a few exceptions (e.g. textile labelling, precious metals, weights and measures)

Many or most Internet purchases will be transacted with foreign vendors. Redress might have to be sought in foreign courts, which could prove to be extremely difficult.

**Redress:** When suppliers fail to deliver as promised, or goods arrive broken or defective, assigning liability and providing avenues for redress in on-line transactions can be complicated by the global nature of electronic commerce. For transactions within one jurisdiction, ultimate redress is available through the court system. However, cross-border transactions can reduce the feasibility of this option.

*The objective of a consumer protection framework is to meet consumer needs for location/identification, information provision, and redress (security and privacy are addressed earlier) . . .*

Such a framework would be balanced between adjustments to the existing regulatory structure, use of available and emerging technologies, and implementation of voluntary standards of business conduct. Dialogue among governments, business and consumer groups will determine the most appropriate balance among these three approaches. An overriding principle is that consumers using electronic commerce should be provided with the same protection as that provided by the laws and practices applying to existing forms of commerce.

**Adjusting the existing regulatory structure:** Governments will continue to have a responsibility to search out and prosecute those who commit fraud - on-line or otherwise. However, other laws will likely require changes, for example, to ensure the recognition of electronic signatures.

Many of the commercial laws in question fall under provincial jurisdiction - these questions are being examined through the ULCC.

#### **Provincial Consumer Protection Legislation**

- Trade Practices Legislation
- Direct Sales Legislation
- Credit Disclosure Legislation
- Sale of Goods Legislation (including implied conditions and warranties)
- Prepaid Services Legislation
- Statute of Frauds Legislation

**Use of technology:** Electronic signatures will provide assurance to consumers that their credit card numbers will not be stolen, and could help provide assurances as to merchant identity. However, ensuring the accuracy and legitimacy of information promises and need for redress mechanisms are unlikely to be solved by technology alone.

**Industry-led solutions:** High standards set by industry codes of practice and benchmarks of behaviour can signal to consumers that a company's products, services or activities are secure and reliable. To be effective such codes should include mechanisms for monitoring compliance. Consumer confidence could be further enhanced were a trusted third party authorized to place a digitized "logo" on the Internet sites of compliant businesses and to remove such a log in the event of non-compliance with code principles.

*The federal government is consulting on development of a consumer protection framework . . .*

As a starting point, the guiding principle of any framework is that consumers using electronic commerce should be provided with the same protection as that provided by the laws and practices applying to existing forms of commerce. A key consideration in pursuing this objective is finding the right balance between adjustments to the existing regulatory structure, use of available and emerging technologies and development of voluntary codes of business conduct.

*The Office of Consumer Affairs is holding consultations to examine these issues and will be releasing Canadian Consumer Protection Guidelines in Fall 1998.*

### **Consumer protection: International considerations**

The OECD Committee on Consumer Policy is developing guidelines for consumer protection in electronic commerce, to ensure a global approach to a global phenomenon and to assist member countries as they adjust their domestic consumer protection programs to make them applicable in the new environment.

The Committee is also examining such topics as mechanisms for refunds in distance selling (charge backs), principles of conduct for distance sellers, the coordination of enforcement activities across borders to control fraud, product liability and redress, and the costs of international parcel delivery.

## SECTION TWO: CLARIFYING MARKETPLACE RULES

### LEGAL FRAMEWORKS

*Legal frameworks are needed to support the introduction of measures to improve security, privacy and consumer protection . . .*

In some cases, in addition to policies, voluntary codes and guidelines, some of the initiatives may require statutory reform. Attention is immediately focused on ensuring the recognition of electronic signatures in law, in view of their fundamental role in addressing security and privacy concerns of both business and consumers. Overall objectives are threefold: to make statutes media-neutral, to ensure the recognition of “secure” electronic signatures, and to create evidence rules for electronic records. (*Issues surrounding establishment of public keys and certification authorities are discussed in the Security section above*)

**Make statutes media-neutral:** The Department of Justice is developing legislation to provide for the acceptance of the electronic version of paper-based documents required by statutes. Examples of such statutory provisions require information or notices to be “in writing”; “certified”; “in prescribed form”; “notarized” or “signed”.

**Ensure the recognition of “secure” electronic signatures:** The Department of Justice is examining the value of a presumption in specific circumstances that a “secure” electronic signature can be linked to the appropriate person signing the electronic document. This is a crucial element of the government’s Public Key Infrastructure project (*See Government as a Model User*).

**Create evidence rules for electronic records:** The Department of Justice proposes to amend the *Canada Evidence Act* to deal with the introduction of electronic records into evidence.

*A key element of the legal framework is harmonization with the provinces and territories, by developing common approaches and modernizing legislation . .*

The ULCC has initiated an electronic commerce project, and plans to table an electronic commerce report as well as policy and draft legislative proposals in August 1998. A next step would be for respective provincial and territorial

governments to decide to adopt the legislative proposals and to develop further the policy proposals into legislative form, where appropriate.

### **Legal Frameworks: International Considerations**

The **EU Commission** issued a Communication October 8 1997 which discusses a European framework for digital signatures and encryption, including a policy framework for digital signatures. The Commission aims to establish common European certification requirements for certification authorities(CAs), allowing certificates issues by a CA in one member state to be recognized by all.

**UNCITRAL** already has approved a Model Law on Electronic Commerce which establishes principles for acceptance of electronic signatures - specifically that *where the law required a signature, that requirement can be met electronically if a reliable method is used to identify the signer and to associate the signer with information in the document being signed.*

UNCITRAL is now working on possible draft uniform rules on digital signatures and CAs that would support recognition of signatures and certificates across borders. A working group has been mandated to explore development of a legal regime applicable to digital signatures and certification authorities, specifically whether general law is adequate to support electronic commerce, or whether model uniform laws are needed.

There is a divergence of views whether detailed rules are required. Some states have expressed concern that detailed rules may impede the development of market-driven technologies. Other states consider, however, that rules may be drafted to permit sufficient flexibility to accommodate market-driven development.

Issues being examined include:

- Legal basis supporting certification process, including digital authentication and certification
- Applicability of certification process
- Allocation of risk and liabilities of users, providers and third parties in use of certification process
- Certification through use of registrars
- Incorporation by reference

## TAXATION

*Electronic commerce poses particular challenges to national taxation systems. Canada needs to ensure the integrity of its tax system, while ensuring equity in the tax treatment of paper-based and digital transactions . . .*

Due to the anonymity and borderless nature of cyberspace, electronic commerce presents challenges to tax regimes in Canada and around the world, specifically relating to:

- Tax enforcement
- Determining jurisdiction to tax
- Impact of disintermediation on tax collection

Equity between taxation of digital and non-digital transactions must be ensured in order to prevent distortions in market behaviour.

*Electronic commerce may make it easier to evade taxes . . .*

Electronic commerce raises the potential of increased tax evasion. Those seeking to evade taxes may find it easier to do so than in a paper-based world because of the increased potential for anonymity and the lack of a paper trail. Encryption technology raises the possibility that records may be inaccessible to tax authorities.

**What is existing tax policy for electronic commerce?**

While current tax laws prevail, one of the key challenges for taxation of Internet commerce is establishing jurisdiction.

### **Canadian corporations**

Corporations resident in Canada are subject to tax in Canada on worldwide income from all sources.

### **Non-residents**

Existing law provides that non-residents of Canada pay income tax in Canada only if they *carry on business* in Canada. This is essentially considered to be any value-added activity.

International tax treaties consider that non-residents are taxable only on profits attributable to a *permanent establishment (PE)* located in Canada. PE does not include facilities for storage, stocks, or premises solely for purchasing or advertising.

### **Consumers**

The GST/HST is generally intended to apply to final consumption of products and services in Canada. Electronic commerce should not have a significant impact on goods ordered from non-residents, as the tax will apply when the goods are imported. The concern is primarily with intangible property (e.g. software) and services provided electronically.



***Electronic commerce raises an array of jurisdictional issues, including determining residency of corporations, and obligations of non-resident vendors . .***

International taxation in Canada and most OECD countries is governed by principles such as ***residency, carrying on business in Canada*** and ***permanent establishment***. While in many cases, it is possible to apply existing principles to electronic commerce transactions, there are some issues that the government needs to address in order to provide greater certainty to business and consumers, and avoid multiple taxation.

**Residency:** Canadian residents are taxed on their worldwide income. It is generally easy to establish residency since in most cases it is based on a form of legal presence (e.g. incorporation). However, in some cases, residency of a corporation is based on the location of *central mind and management*, that is, where the important strategic and managerial decisions take place. Due to telecommunications technologies such as videoconferencing, it could be difficult, in some cases, to apply the test of *central mind and management*.

A person's residency also has implications for GST/HST tax purposes. For example, a non-resident may be eligible for relief from tax on goods or services acquired in Canada whereas a resident of Canada would not. In an electronic environment it could be difficult for the supplier to verify the residency of its customers.

**Carrying on business in Canada:** Unlike Canadian residents, who are liable for tax on their worldwide income, non-residents are liable for tax on income earned from Canadian sources, including income from carrying on business in Canada. The concept of *carrying on business* in Canada is found in the *Income Tax Act*, and generally refers to some value-added economic activity, including selling through an agent. The concept of carrying on business in Canada is also important for GST/HST purposes. A non-resident business that is not carrying on business in Canada is not required to charge and collect tax on goods delivered or services performed in Canada.

**Permanent establishment:** Canadian bilateral tax treaties provide that non-residents are taxed on income from carrying on business in Canada only to the extent that such income can be attributed to a permanent establishment (PE). Generally, the concept of *PE* is defined in Canadian bilateral treaties as a fixed and permanent place of business through which non-residents conduct business. An agent must habitually exercise authority to conclude contracts in the name of the

non-resident. The concept of PE also has relevance for GST/HST purposes. In this context it applies for purposes of determining a person's residency status.

Non-residents can undertake electronic commerce with Canadian residents without having a fixed and permanent presence in Canada; this raises the issue of how the concepts of PE and carrying on business in Canada would apply in an electronic commerce environment. The following are examples of the kind of questions that the government needs to address in the near future:

- In what jurisdiction is an electronic transaction completed?
- Is a non-resident's electronic-commerce web server physically located in Canada a PE? What if the web server is located outside of Canada?
- A non-resident merchant rents disk space from a Canadian ISP. Would the ISP be considered a dependent agent of the non-resident?

***Disintermediation may jeopardize ability to collect taxes . . .***

One of the foreseen impacts of electronic commerce is the elimination or substantial reduction in the need for intermediaries in the sale and delivery of goods and services, commonly referred to as *disintermediation*. This has two consequences.

Firstly, there will be changes in the composition of the tax base as electronic commerce displaces, or renders obsolete, some types of economic activities and creates opportunities for new ones. Although the overall impact on the composition of the tax base is difficult to estimate at this early stage of development of electronic commerce, Canada is well positioned to reap the benefits of worldwide electronic commerce.

Secondly, the loss of business intermediaries means loss of some control points for taxing authorities. This may increase the cost of tax administration and require tax administrators to adapt their tax collection systems. However, at the same time, the technology infrastructure underlying electronic commerce opens possibilities for efficiency gains in the administration of the tax system.

*These issues, among others, were examined by the Minister of National Revenue's Advisory Committee on Electronic Commerce. The Advisory Committee's report was tabled April 30th, 1998, to be followed by a process of public consultation.*

### **Taxation: International Considerations**

The OECD has been examining taxation issues, including how information needs of tax administrators can be met, how exchange of information can be used to counter tax evasion and avoidance, how OECD transfer-pricing guidelines can be applied to electronic commerce, and the elimination of customs barriers.

There is general consensus that tax compliance issues are more pressing than tax policy - existing taxation concepts and principles should be applied. Principles of tax neutrality and equity should be followed, so not to impede the development of electronic commerce. Other issues include the needs to determine and verify the identity and location of parties, territorial concepts such as income source and taxpayer residence and how to access and verify encrypted records.

## INTELLECTUAL PROPERTY PROTECTION

*Increasingly, as knowledge drives the new global economy, intellectual property rights will provide a core foundation for economic growth . . .*

Electronic commerce is the vehicle for delivering this new economy - an economy of both tangible and intangible goods and services.

Copyright and intellectual property laws provide the rules governing the sale of rights to content, including books, music, videos, software and information, as well as protecting many of the ideas and innovations that drive the current technological revolution. While the new digital

environment offers enormous opportunity for economic growth, the new technology also makes copying or modifying a work, cheap, easy, and difficult to detect. Canada needs an intellectual property rights (IPRs) system which responds to all these demands while balancing the needs of creators and users.

*On many fronts, technology is posing new challenges for IPRs . . .*

The simple acts of browsing or posting a Web page raises many challenges. What is the status of "copies" made in computer memory, or cached in hard drives for faster downloading? Can dynamic links to graphics on someone else's site violate copyright? Can copyright collectives collect royalties for music available on Internet sites? Are new measures needed to support the technological tools, such as copy protection, being used by creators to further protect their works?

The answers to such questions are being sought in various venues, including academia, the courts, special tribunals, national legislatures, and international bodies such as the World Intellectual Property Organization (WIPO).

### **Recent developments in the protection of digital intellectual property**

**Database protection:** Limited protection is currently available for databases. The Federal Court of Appeal held in the 1997 Tele-Direct case that simple effort or "sweat of the brow" is not sufficient to give copyright protection to databases.

**WIPO Treaties** create new rights relating to making works available on an on demand basis, provisions to protect copy protection systems, and protection of rights management information.

***Internationally, Canada signed the WIPO Copyright Treaty (WCT) and WIPO Performances and Phonograms Treaty (WPPT) in December 1997 . . .***

The treaties address a mix of traditional issues such as protection of photographs and performers and issues related to electronic information networks (*See box*). Canada must now decide on implementation of these provisions. A study has been commissioned on what amendments to the *Copyright Act* would be necessary to ratify each of the treaties. Consultations will begin in the Summer of 1998.

***Canada is considering the adequacy of database protection and liability of Internet service providers . . .***

A recent court ruling indicates that copyright protection is not available to nonoriginal compilations - i.e. certain databases. The government is now studying whether additional intellectual property protection, if any, is desirable in Canada. WIPO is continuing to study the protection of databases.

Canada is also studying the issue of liability of Internet service providers and other intermediaries for uses of protected works on the Internet and other electronic networks. Among issues to be considered is whether knowledge or reasonable grounds to know should be a requirement for certain types of liability.

***We have just begun to assess the impact of electronic transmissions on intellectual property and copyright. What other issues need to be addressed? What issues should be Canadian priorities?***

**Intellectual Property: International Considerations**

WIPO is actively examining intellectual property protection for digital content. The WIPO Copyright Treaty (WCT) and WIPO Performances and Phonograms Treaty (WPPT) deal with the exclusive right of making works available on an on demand basis, protection of copy protection systems and protection of rights management information. Some of these elements may be considered for inclusion in the WTO-TRIPs agreement in future rounds of negotiation. WIPO is also continuing study of protection of databases and protection of performers in audiovisual works.

Over the next two years, WIPO will be studying a number of related cyberspace issues such as jurisdiction and choice of law. In the context of Internet domain names, WIPO will be studying international dispute settlement alternatives, as well as rights of trade-mark owners in relation to use of those names.

## SECTION THREE: STRENGTHENING INFORMATION INFRASTRUCTURE

### NETWORK ACCESS AND AVAILABILITY

*Electronic commerce will not grow rapidly unless Canadians have universal and affordable access to the Information Highway . . .*

Access to the Information Highway may soon become a necessary condition for effective participation in a knowledge-based economy. While Canada has very high household penetration rates for phone and cable television (*99% and 74% respectively*), penetration rates for household computers and Internet linkage must grow to reach these levels - currently standing at 36% and 13%, respectively.

The private sector and governments need to continue to ensure universal and affordable access to telecommunications networks and fill gaps in Internet access through:

- Telecom policy and regulation
- Network infrastructure and bandwidth
- Support for targeted applications, particularly at the institutional level

**Canada is already among the most connected countries in the world**

We lead the G-7 group in household telephone, cable and Internet penetration:

Overall, Canada's telecommunication infrastructure compares favourably with other G-7 countries. Canada has more fixed network digitization than the United Kingdom, Japan or the U.S.

Residential telephone rates are significantly lower than in other countries.

The cost of Internet access in Canada is the lowest among all members of the OECD. Telcos and Internet service providers are systematically extending local calling access to the Internet to rural and remote areas- which has a significant impact on the cost of Internet access.

**Telecom policy and regulation:** Canada has liberalized its telecom policy, allowing competition between carriers, and convergence between technologies. Competition provides the foundation for market growth and investment.

**Network infrastructure and bandwidth:** The telecommunications sector is spending some \$4 billion annually to modernize and upgrade its telecommunications networks. The small number of remaining party lines are being phased out; individual line touch-tone service has become the norm for residential access; and higher bandwidth access through technologies such as ADSL and LMCS is becoming possible. Also, the cable TV industry has entered the high bandwidth Internet access market through cable modems, and in a number of cities, ADSL and cable modems compete head-to-head.

In the February 1998 Federal Budget the government committed to providing new investment to CANARIE Inc. to equip Canada by the year 2000 with an all optical, next generation, coast-to-coast, high speed research network.

**Support for targeted applications:** Since most Canadians do not have a computer at home, widespread access to the Internet can be most readily achieved by focusing on the communities and institutions, via schools, public libraries and community access sites. Both the Community Access Program (CAP) and SchoolNet stress a collaborative approach between the federal and provincial/territorial governments. The February 1998 Federal Budget expanded the scope and funding for these highly successful programs as follows:

- Additional funds for CAP which allow expansion beyond an initial target of 5,000 public access sites in rural communities, to bring up to 5,000 additional urban sites on-line by the year 2000
- Funding to extend Internet connectivity from the school to the classroom. An expanded SchoolNet will also challenge Canadian businesses and governments to provide 250,000 computers for use in classrooms
- Voluntary Sector Network Program (VolNet). The government will provide funding to the VolNet to link 10,000 voluntary organizations to the Internet. VolNet is aided by a private sector consortium's contribution of equipment, software and services

***Internet governance structures are fundamental to the future of the information infrastructure and electronic commerce . . .***

Electronic commerce presupposes that the Internet functions effectively. Key questions include: who will control the Internet? How will domain names and Internet protocols be assigned, operated and governed? What are the roles and responsibilities of the private sector and governments, and of various countries?

***The Internet is in transition from control by the U.S. government . . .***

Until now, the assignment of generic top level domain names is in the hands of a private company under contract to the U.S. government.

This will soon change. The United States proposes that all decision-making authority be transferred over to the private sector by October 1, 1998. Included in this proposal is the creation of a non-profit corporation to administer the domain name and Internet addressing protocol systems, as well as resolving outstanding policy issues. Some of the issues raised include:

- **Jurisdiction:** How will disputes (mostly related to trade-marks) be resolved? What are the implications for Canadian companies?
- **Competition:** How to encourage genuine competition in the supply of domain name registration services?
- **National Top Level Domain (TLDs).** How will national TLDs be integrated into process put forward by the U.S. government?

***Canada has formed a private sector ad hoc committee to examine these and other issues from a Canadian perspective, with a final report available in Fall 1998.***

**Domain names: what are they?**

Domain names are the mnemonic address of Internet hosts and web sites.

***Country Code Top Level Domains*** (ccTLD) such as *.ca*, *.us*, are generally under domestic jurisdiction, either private sector or government.

***Generic Top Level Domains*** (gTLD) such as *.com*, *.net*, *.org* are operated by a private company under contract from the U.S. government. This arrangement is expiring in October 1998.



## OPEN NETWORKING

*For electronic commerce to be globally adopted, common standards for both interoperability and language independent communications are required . . .*

Global standards are set with the co-operation of the private sector and governments in various international and non-governmental organizations. Canada is working through international organizations to establish norms for the interoperability of networks and universal communications.

*To this end, Canada is developing a framework for standards development . . .*

The Telecommunications Standards Advisory Council of Canada and the Standards Council of Canada have been invited to lead a select group on electronic commerce standards. The select group will represent key private and public sector organizations contributing to the development of the Canadian standards framework for electronic commerce. This framework will identify the needs of standardization, the relevant organizations to develop standards, and priorities for development of the standards. The initial work of this committee will be presented to the OECD Ministerial Conference in October 1998.

*Much of the initial work towards this framework is being done through international standards organizations . . .*

The Joint Technical Committee (JTC) of the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) has been working on identifying key impediments to the deployment of electronic commerce globally. Canadian representatives are active on this committee, and are making links to domestic standards development. Four major horizontal barriers have been identified:

- **Cultural adaptability:** including questions of linguistics and the effect on global trade, cultural differences in understanding business practice and interpretation of consumer rights.
- **Legal and jurisdictional localization:** local situations which may affect the introduction of global electronic commerce. Jurisdictional issues are not only governmental, but can arise from international associations.

- **Sector-to-sector impediments:** sectors unable to transfer information to other sectors, and differing definitions for what are otherwise common terms (time, date, country codes).
- **Automation of common business practices:** many business practices are not currently automated, and some financial transactions are not universally accepted.

*The select group led by the Telecommunications Standards Advisory Council of Canada and the Standards Council of Canada will be looking at issues such as . .*

- What are the common elements requiring standardization?
- Who should be developing the standards? Formal standards organizations? The private sector? The public sector? Some combination of the above?
- Should Canada embrace all international standards or are there unique Canadian requirements?
- What are the business needs for standardization, and are they being addressed by current standards?

*The select group, representing key private and public sector organizations, will be seeking views and developing the Canadian standards framework for electronic commerce, for input to the OECD Ministerial Conference on Electronic Commerce, to be held in Ottawa, October 1998.*

## **SKILLS AND AWARENESS**

### ***Widespread use of electronic commerce will require development of digital skills by both business and consumers***

At present, use of electronic commerce is concentrated in certain segments of the population and business. Electronic commerce users tend to be more educated, affluent, and located in urban centers, while Internet penetration is higher in larger companies. The challenge is to expand this group to include a wider spectrum of education and income levels, and all sizes of business.

### ***The CAP and SchoolNet platforms can be used to increase digital literacy . . .***

As well as providing access by communities and schools, the Community Access Program (CAP) and SchoolNet provide platforms for education and awareness. For example, the SchoolNet Digital Collections Program supports groups to digitize content, and the Student Connection Program helps small businesses connect to the Internet.

### ***Specific initiatives are being launched to increase awareness of electronic commerce among small business . . .***

A new Industry Canada small business initiative, Community Storefronts, provides an opportunity for 250 small and medium businesses and 60 non-profit organizations in four communities across Canada to participate in an eight month trial of electronic commerce, in exchange for sharing their experiences with electronic commerce with other small businesses. A private sector consortium is providing the equipment, software and network services. Industry Canada has also launched an Electronic Commerce Newsletter for small business to raise awareness of legislative changes and share knowledge about on-line business.

### ***Industry Canada is examining adoption of electronic commerce in specific sectors and needs of small business. . .***

Industry Canada is tracking electronic commerce developments in selected industries and their implications for competitiveness and identifying best practices in the utilization of electronic commerce.

Industry Canada is also working with Statistics Canada to develop better measures and statistics on the utilization of electronic commerce and related technologies in Canadian businesses.

*Industry Canada is also examining broader issues of skills required to compete in a knowledge-based economy . . .*

Electronic commerce fits into broader efforts by Industry Canada to look at what is required to compete in the knowledge-based economy. A skills workshop took place on May 21, 1998 with industry and government leaders to find solutions to Canada's IT skills gap.

## **GOVERNMENT AS A MODEL USER**

The Government of Canada can play a key role in bringing electronic commerce and the Information Highway to an increasing number of Canadians. Canadians are demanding client-driven, interactive integrated information and services from all levels of government.

The Treasury Board Secretariat has indicated that electronic commerce will become the preferred means for the government to conduct its business. This will both increase efficiency, and stimulate the widespread acceptance of electronic commerce within Canada.

The Federal/Provincial/Territorial Ministers responsible for the Information Highway, meeting at Fredericton on June 12, 1998, endorsed the goal of making on-line delivery both a priority and the preferred mode for government service delivery.

*Examples of Federal government electronic commerce projects and activities . . .*

### **Procurement**

Canada has been at the forefront of developments in the use of electronic databases in the procurement of goods and services by the public sector since 1992. Canada's present system, MERX, is an Internet-based, national electronic tendering service available on a subscriber basis around the world. MERX allows businesses to gain access to government markets - federal, provincial and territorial as well as municipalities, academic institutions, school boards and hospitals - using leading-edge technology.

### **Government of Canada Public Key Infrastructure (GOCPKI)**

Concerns about authentication, confidentiality, security and legal validity surround electronic commerce within government, as in the private sector. The GOCPKI will provide a uniform key management and key certification process for confidentiality and digital signatures across the government. The Policy Management Authority (PMA) is an interdepartmental committee chaired by the Treasury Board Secretariat. It sets and approves the policies and practices which Certification Authorities (CAs) employ in issuing certificates.

The products which form the GOCPKI technology baseline - the Entrust suite - are now available. The GOCPKI will be fully implemented by the end of 1998.

### **Revenue Canada**

- More than half of all payments by the Receiver General are made electronically
- Electronic customs clearances for importers and brokers (CADEX)
- Electronic tax filing: income tax (EFILE) and GST
- Use of a single Business Number (BN) for dealing with Revenue Canada and other federal departments

### **Human Resource Development Canada**

- Instant electronic access to federal job banks from kiosks

### **Industry Canada**

Industry Canada has committed to having all services delivered electronically by December 1999. Key pilot projects include:

- Lobbyist Registration
- Trade-marks Application
- Filing under *Investment Canada Act*
- Spectrum Licences and Databases
- National Insolvency Search Services
- Filing under Canada Business Corporations Act

## SECTION FOUR: TRADE POLICY ISSUES

*Questions exist as to what extent existing trade obligations should apply to electronic commerce . . .*

These issues arise in the context of deliverables which are transmitted electronically.

There are several trade agreements which likely do apply to electronic commerce. Among the WTO agreements, those related to goods (GATT 1994), services (GATS 1994) and trade-related aspects of intellectual property (TRIPS) may be relevant. As well, the Information Technology Agreement and the GATS Fourth Protocol on Basic Telecommunications that came into effect on February 5, 1998, are also relevant.

The original GATS (1994) contains an *Annex on Telecommunications* that ensures service providers wishing to provide retailing, distribution, banking or any other service for which a Member has made commitments, also have access to the telecommunications infrastructure to deliver those services. The GATS (1994) coverage of *enhanced* telecommunications services includes, for most WTO Members, commitments on various services related to electronic commerce such as electronic mail, electronic data interchange, and on-line data processing.

Canada's principal trade agreements incorporate the general principles of non-discrimination (most-favoured-nation principle and national treatment), market access, transparency, and regulation that is the least restrictive as possible. In determining how these agreements apply to electronic commerce, governments will have to address fundamental questions such as:

- Are we talking about goods, services, or some new category of deliverables?
- Which regulatory jurisdictions apply?
- How do we deal with horizontal issues such as intellectual property?

The WTO Secretariat released a major paper on March 20, 1998, which should help crystallize debate on these issues.

***The concept of a customs tariff-free environment has been raised both domestically and internationally . . .***

Most of the likely candidates for electronic delivery, will, in their physical form, be able to enter Canada duty-free by January 1, 2004, with the exception of video and audio recordings from developed countries, other than the U.S. The U.S. has made a formal proposal in the WTO to allow the duty-free entry of deliverables that are transmitted electronically. This proposal raises several important policy issues, including the distinction between goods and services and to what extent is electronic commerce covered by existing WTO trade obligations. Some developing countries, in particular, are uncomfortable with the U.S. proposal. In these circumstances, it has been suggested that a temporary standstill on tariffs be introduced until the analytical work on the related trade policy issues is completed.

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## **CONCLUSION: NEXT STEPS**

*Electronic Commerce in Canada: Priorities for Action* identifies electronic commerce priorities from a Canadian perspective, and starts to build a framework and timeframe for addressing these issues.

This publication will be followed by the release of *A Canadian Strategy* and a *Report on Progress* in the Fall of 1998. Further information on electronic commerce in Canada, along with this document, is available on our Website:

<http://e-com.ic.gc.ca>

Electronic Commerce Task Force  
Industry Canada  
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