

# **e-Commerce to e-Economy: Strategies for the 21st Century**

**Industry Canada**

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## **Presenters**

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### **Day One: Opening Remarks**

David Johnston  
President, University of Waterloo  
Conference Chair

### **Morning Keynote: From Electronic Commerce to the e-Economy**

Hon. Donald Johnston  
Secretary-General, Organisation for Economic Co-operation and Development  
(OECD)

### **The Current and Future Shape of the e-Economy**

Hon. John Manley  
Senior Counsel, McCarthy Tétrault LLP  
Panel Moderator

Ed Kilroy  
President, IBM Canada

Frank Clegg  
President, Microsoft Canada

Paul Tsaparis  
President and CEO, Hewlett Packard Canada

Chuck Hounsell  
Senior Vice President, TD Canada Trust

Terry Walsh  
President and CEO, Cisco Systems Canada

**Lunch Keynote: Building the e-Economy**

Michael Sabia  
President, BCE Inc.

**The International Dimension: Growing a Global e-Economy**

John Kelly  
Chairman, NexInnovations  
Panel Moderator  
Thomas Vant  
Secretary General, Business and Industry Advisory Committee to the OECD (BIAC)  
Maureen O'Neil  
President, International Development Research Centre  
Paul Twomey  
President and CEO,  
Internet Corporation for Assigned Names and Numbers (ICANN)  
Paul Misener  
Vice President, Global Public Policy, Amazon.com

**Public Sector Transformation**

Michael Binder  
Assistant Deputy Minister,  
Spectrum, Information and Telecommunications Technology, Industry Canada  
Panel Moderator  
Don Lenihan  
Council CEO and Executive Director, KTA Centre for Collaborative Government  
Ken Cochrane  
CEO, Information Technology Services,  
Public Works and Government Services Canada (PWGSC)  
David Zussman  
Executive Vice President and CEO, EKOS Research Associates  
Frank Hart  
Vice President, Government Solutions, EDS Canada

**Dinner Keynote: Building the 21st Century Economy in Canada**

Hon. David Emerson  
Minister, Industry Canada

**Day Two: Opening Remarks**

Nancy Hughes Anthony  
President and CEO, Canadian Chamber of Commerce

**Morning Keynote: Engines of Growth in the e-Economy**

Geoff Ramsay  
CEO and Co-Founder, eMarketer

**Business Opportunities and Growth**

Nancy Hughes Anthony

President and CEO, Canadian Chamber of Commerce  
Panel Moderator

Derek Fry

President, Visa Canada

Gary Briggs

Vice President and Country Manager, eBay Canada

Myrna Francis

President, Mfran Enterprises Inc.

Jean-Marie Toulouse

Directeur, École des Hautes Études Commerciales (HEC)

### **Infrastructure for the e-Economy**

Andrew Bjerring

President and CEO, CANARIE Inc.

Panel Moderator

John A. MacDonald

President and COO, Allstream

Isabelle Courville

President, Enterprise Market Division, Bell Canada

Louis Audet

President and CEO, Cogeco Inc.

David Mitchell

Professor and Associate Dean (Research and Graduate Programs),  
University of Calgary

### **Lunch Keynote: A Catalyst for Innovation and Economic Growth**

Todd Ramsay

General Manager, Global Government Industry, IBM

### **Promoting the Trust Agenda: Privacy and Security**

John Gustavson

President and CEO, Canadian Marketing Association

Panel Moderator

Jennifer Stoddart

Privacy Commissioner, Government of Canada

Michael Geist

Canada Research Chair, Internet and e-Commerce Law, University of Ottawa

Michael Coady

Vice President, Security Practice, Computer Associates International

### **Setting the New Agenda**

Hon. Perrin Beatty

President and CEO, Canadian Manufacturers and Exporters

Panel Moderator

Arthur Carty

National Science Advisor to the Prime Minister,  
Council of Science and Technology Advisors (CSTA)

Lorna Marsden

President and Vice-Chancellor, York University  
Charles Sirois  
President and CEO, Telesystem Ltd.

**The Way Ahead**

Nancy Hughes Anthony  
President and CEO, Canadian Chamber of Commerce

## **Day One: Opening Remarks**

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### **David Johnston**

**President, University of Waterloo  
Conference Chair**

**David Johnston** welcomed participants and acknowledged the conference organizers and sponsors. Looking back over the last 10 years, he noted that Canada has enjoyed a pioneering information technology program. Ten years ago, the Internet was barely mentioned, but today it is the dominant platform for commerce and communication. Another area of enormous change has been the development of e-commerce, whose economic promise is being fulfilled and even surpassed as e-business goes mainstream.

The rate of change today is tremendous, Johnston remarked, pointing out that as a technology platform, the adoption of the Internet by 50 per cent of the population in five years dramatically outruns all other forms of technology, including steam power, trains and television.

The purpose of this conference is to take stock of Canada's position within the world of global commerce. The goal is to evaluate how well Canada has adapted to the changes, assess the demands of tomorrow, and create a forward-looking agenda to ensure Canada's success in the e-economy.

## **Morning Keynote: From Electronic Commerce to the e-Economy**

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### **Hon. Donald Johnston**

**Secretary-General,  
Organisation for Economic Co-operation and Development (OECD)**

**Hon. Donald Johnston**, quoting John Maynard Keynes, stated that participants were gathered at this conference "to examine the present in light of the past, for the purposes of the future."

It has always proved hazardous to predict the future, Johnston said. At the 1893 Chicago world's fair, people predicted air travel — in balloons tied to lines going from city to city. He noted that the Canada of today is different than what was imagined 20 years ago when he was Minister of Science and Technology, largely due to the impact of information and communications technology (ICT).

The market for ICTs has had ups and downs, but today growth is back. These technologies will continue to play a pivotal and transformational role in the world

economy. Governments should design policies that enable information and communications technology to fulfill its potential, he said.

The new growth period for ICTs started in 2002 in Canada and the United States. Growth has now moved to Japan, China and Korea. Dynamic growth has been spurred by increased use of cell phones, high-speed Internet and the use of secured servers to support e-commerce.

In addition, ICTs are having an impact on economic growth and productivity by contributing to the GDP and acting as a transformational technology (i.e., contributing to improved productivity in non-technological sectors). For example, computers are helping increase productivity in other industries by supporting the growth of e-commerce. Yet there is still relatively little implementation of ICT-enabled integrated business processes and online activities, Johnston said. To take real advantage of e-business, companies must increase the use of e-business software and restructure their interactions with customers and suppliers.

ICT is changing the way companies work across all sectors. In the workplace, ICTs are creating new working models by allowing for outsourcing through the Internet and rapid growth in productivity.

At the firm level, ICT investments can transform business when they are part of comprehensive strategies implemented in a competitive environment. These strategies must be accompanied by organizational change, including investment in skills and innovative management. Companies must also have the right infrastructure and be situated in an appropriate regulatory environment in order to maximize benefits.

Emerging technologies will increase the contribution of ICTs to growth and employment, said Johnston. Areas such as Radio Frequency Identification (RFID) and Wireless Fidelity (WiFi) are maturing technologies with increased commercial applications that are potentially very important for growth, productivity and employment. Nanotechnology also has major ICT applications — almost two-thirds are expected to be in electronics and new materials related to ICT.

There is also potential for new disruptive technologies that can challenge established firms and industries. For example, the rise of peer-to-peer file exchange of music and video is challenging the entertainment industry, but may have other implications as well.

The OECD has been a pioneer in solving ICT-related problems. In the 1980s, the OECD created guidelines on the exchange of information and the protection of private information. In 1985, the organization made a declaration on the free exchange of information. In the 1990s, the OECD started to focus on network infrastructures, consumers, taxation and trade regulations and the social impact of ICTs.

The OECD has six priorities for international cooperation:

1. **Broadband:** In February 2004, the OECD adopted recommendations on broadband development that highlight the need for competition in communication markets and between rapidly evolving technologies. Government policy must be “pro-competitive” and should be neutral with regard to competing technologies.
2. **Digital content:** High-quality, always on, broadband Internet services are transforming the high-growth digital content industry. The OECD is helping governments understand this phenomenon, examining new business models for digital content, the changing value chain of these content industries, drivers and barriers to growth, sector transformation and changing market structures, and their impacts on growth and employment.
3. **Information security:** OECD Guidelines for the Security of Information Systems and Networks offer advice on policies and measures to address both internal vulnerabilities and external threats. The OECD continues to help members and non-members implement the guidelines.
4. **Privacy:** To promote privacy protection in the online environment, in 2003 the OECD updated its publication, *Privacy Online: OECD Guidance on Policy and Practice*, aimed at governments, businesses and individuals. The guidelines include mechanisms for adopting and posting a privacy policy as well as mechanisms for enforcement and redress.
5. **Cross-border fraud:** In June 2003, the OECD released better guidelines for more effective cooperation in the enforcement of laws on cross-border fraud, particularly on the Internet. The guidelines also encourage public/private cooperation to protect the marketplace.
6. **Spam:** The control of spam is crucial for continued development of Internet capabilities and benefits. OECD countries have set up a Taskforce on Spam to devise a comprehensive response by government, business and civil society to the problem posed by spam. The initiative will produce practical tools to make spamming more difficult and to make the identification and prosecution of spammers easier.

ICTs are a crucial part of the economy and their impacts are expanding, Johnston concluded. New technologies will continue to drive applications across sectors and activities. The challenge is to integrate developments more closely into economic policy and provide a security and regulatory environment that will help ICTs flourish.

## **The Current and Future Shape of the e-Economy**

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### **Hon. John Manley**

**Senior Counsel, McCarthy Tétrault LLP  
Panel Moderator**

In his introduction to the panel discussion, **Hon. John Manley** noted that “things have changed” since 1993, when the “information highway” was still a new idea. The government had made a promise to create an information highway committee, but many people were asking, “What is this?”

The government launched an Information Highway Advisory Council in 1994. Manley remarked that “many members of that Council are here today.” The Council wrote two volumes of seminal reports, which were adopted for use around the world. The work was invaluable in setting the agenda, and Manley noted that it dominated his seven years as Minister of Industry.

In 1998, Canada hosted an OECD conference on e-commerce, and launched the e-commerce strategy, as well as the National Broadband Task Force. The government has been working with the private sector in this area, and this conference is part of a continuous flow of events stretching back over 10 years.

Manley personally acknowledged David Johnston’s involvement in this work, describing Johnston as “the godfather of the Canadian connectedness agenda.”

He added that Canada has benefited from the leadership of hundreds of people to become one of the most connected nations in the world. It was one of the first countries to connect all its schools to the Internet. Manley recalled the last school connected to the Internet in Canada: a school with three students, located on Pictou Island, Nova Scotia. Today, all of Canada’s schools, as well as many businesses and people, are connected and Canada shares its strategies in international fora.

Canada has seen rapid evolution over the last 10 years, with ICTs affecting all aspects of society and the economy.

Manley explained that this first session would explore the challenges and opportunities. Today, the scene is different than it was in 1994. Canadians need to ask some key questions: “Where do we go now? What are the challenges facing business and government? What are the public policy issues that need to be tackled?”

### **Ed Kilroy**

**President, IBM Canada**

Many current strategies in the e-economy focus on leadership and collaboration, observed **Ed Kilroy**. IBM Canada surveyed over 400 CEOs, asking about their major objectives and the major barriers to these goals. The results showed that “growth is back on the

agenda of CEOs.” Cost cutting and productivity, while still important, are no longer central. CEOs believe that growth will come from investment in new markets and new products and services developed within the next two to five years, Kilroy reported. Innovation, agility and speed are therefore seen as critical to competitiveness, with 80 per cent of CEOs expecting to undertake significant transformation over the next two to three years.

In the context of the current economy, Kilroy noted that there has been moderate growth in GDP and extreme competition from all parts of the world. The situation calls for innovation and increased productivity.

What are the inhibitors to achieving these objectives? Most CEOs felt that their companies were not agile enough to identify and pursue new markets. There have been major transformations within organizations, but these have occurred mostly within individual pillars (such as manufacturing, distribution, human resources and customer management). The challenge now is to integrate horizontally, both internally and externally. This is not a technical issue but a leadership issue. The key is the intersection between leadership-identified business transformation and technological capability.

The days of tweaking “business as usual” processes are gone. Businesses must innovate, and the model for innovation is changing dramatically. This discussion brings together public policy makers, academia and private sector organizations, but even more collaboration is needed amongst these groups.

It is critical to ensure that no one is left behind in this transformation, Kilroy added. Therefore, IBM Canada has announced a strategy for reaching out to Aboriginal business.

## **Frank Clegg**

**President, Microsoft Canada**

**Frank Clegg** observed that Canada has transformed from a resource-based economy into a leading knowledge-based economy, with the help of visionary leadership by former Industry Minister John Manley.

There is a proven link between IT and ICT investment and growth in productivity, he stated. Canada has had success as the most wired nation in the world, and has a knowledgeable workforce — but more can be done. Although Canada has made gains in productivity, it is significantly behind the U.S. While Canada’s population and GDP is about 10 per cent of that the U.S., its ICT spending is only 6.3 per cent of what is spent by the U.S. The numbers are even worse when it comes to small businesses, where ICT investment falls well behind that of the U.S. and the large enterprise environment.

Clegg listed several reasons for this situation. He noted that keeping up with the technology curve is not a “top of mind” concern among Canadian small businesses, which are more concerned with staffing and generating cash flow. Small businesses generally focus on IT only when something goes wrong with their technology. Another

potential inhibitor is the cost of the technology and the training time required for employees.

Microsoft has acquired two companies that deal specifically with solutions for small and medium-sized enterprises (SMEs) and is investing \$2 billion a year in research and development focused specifically on their needs.

Governments also have an important role to play in helping SMEs integrate IT. One of the immediate steps that can be taken is to build a better case for using the technology, making the connection between IT and productivity growth. The government should also offer direct support for small businesses through tax breaks or credits for firms seeking to be more innovative, and by providing support for research and development.

### **Paul Tsaparis**

#### **President and CEO, Hewlett Packard Canada**

Canada has accomplished a lot, but more can be done to move forward, said **Paul Tsaparis**. He discussed the roles of consumers, business and society.

Noting that it is easy to find a survey showing the results one wants to see, he observed that Canada is not always ranked at the top when it comes to e-readiness. He cited a 2004 report that ranked Denmark in the top spot in terms of e-readiness, with Canada ranked 11th.

Tsaparis acknowledged the view that regulatory environments can influence changes. Canada has had a great telecommunications system, he said, while warning that some systems that were once enablers can potentially become inhibitors.

Another factor for consideration in Canada is that the number one priority for Canadian citizens, health, is a sector that is sorely under-invested when it comes to ICTs. Canada is missing a tremendous transformational opportunity here, he said.

Tsaparis reminded participants that studies show Canada as less productive than the U.S., and these studies attribute the difference in productivity to the lack of ICT investment.

Technology will influence industry in Canada and have an impact on the issue of human capital. He observed that Canada has made good progress in developing a skilled IT workforce through industry and government collaboration. In the U.K., there have been significant problems in filling IT and engineering jobs. This issue is seen as a significant inhibitor to moving the economy forward, and Canada is better positioned in this regard.

From the consumer perspective, Canada is one of the largest IT consumer communities in the world. Hewlett Packard is trying to bridge the gap between the “digital haves and have nots” through its world e-inclusion initiative, which is about connecting disadvantaged communities, both in developing countries and here in Canada.

The challenge, Tsaparis concluded, is to collaborate across all segments — business, consumers and government.

### **Chuck Hounsell**

**Senior Vice President, TD Canada Trust**

On the theme of collaboration, **Chuck Hounsell**, described how his teenage daughter collaborated with fellow students to complete a project, using MSN Messenger. Six friends were chatting online, modifying a PowerPoint document and researching the Internet, all at once. This is inspiring, he said, because today's youth are doing naturally what businesses are still struggling to do: use ICT to work collaboratively.

Hounsell explained that he has spent a lot of time building consumer services around the Internet and around telephone banking. He stressed the value of simplicity. The process of simplification involves asking users for feedback on the systems, and involving them in design. One key theme that has arisen among TD customers is the issue of privacy and security. Canada has become an attractive place for identity theft, and the government should take further steps to step up enforcement.

Outsourcing has been an important solution to TD's efforts to increase productivity, Hounsell said. Yet, this is a complex proposition: it takes a long time to determine what to outsource and how to do it. There should be a set of regulations and tax implications that make it easy for companies to be as productive as possible, he said.

Another challenge is the need to accommodate employees when moving them from one company to another and when outsourcing services. By creating a larger sense of community, TD has been able to send employees from one company to another, while helping them continue to feel at home.

There is a human dimension to all these changes, Hounsell concluded. "We need to think about how what we are doing affects peoples' lives."

### **Terry Walsh**

**President and CEO, Cisco Systems Canada**

Calling Canada the most connected society in the world, **Terry Walsh** asked, "What happened in Canada's history that caused the country to position itself so well in integrating these technologies?"

Small and medium-sized enterprises make up 99 per cent of Canadian businesses, 80 per cent of employment and 60 per cent of economic output. But research shows that 50 per cent of SMEs are not taking advantage of Internet solutions to drive productivity growth, Walsh noted. As a result, Canada's level of e-readiness has slipped.

For the 50 per cent of SMEs that have adopted Internet readiness solutions, there has been a 40 per cent increase in revenues and a 150 per cent increase in profits. Therefore,

the 50 per cent that are not participating are at serious risk of falling behind both local and global competitors.

One of the reasons that they are staying away from ICTs is their focus on day-to-day survival. In addition, they lack the money to invest, and are not aware of the benefits.

The first step in creating change is to make this issue a national priority. Canadian businesses cannot compete in a 21st century economy unless they grapple with this issue, Walsh stated.

With the highest level of connectedness in the world, Canada should have a competitive advantage. “We don’t need more studies,” he concluded. “We need leadership. It is time for us to stand up and be counted as leaders, public and private.”

## **Discussion**

What if Industry Canada staff were to say, “the agenda is overworked and tired; let’s come up with something new?” asked Hon. John Manley. He challenged panellists for what they would say to the Minister to convince him of the relevance of this issue.

Ed Kilroy highlighted the need for leadership and collaboration within industry. In the private sector, if the leadership team is not addressing the issue, then the leadership should be changed. There must also be collaboration with academia, which is producing good benchmarks and case studies. But leadership is key — in both the public and the private sector. “Our company got to the point of standing on death’s door in early 90s,” until it addressed this issue, he said.

Frank Clegg noted that “other countries are stepping up and investing in a significant way.” They are looking at the North American economy driving the GDP, and they want to take their share. Canadian companies understand this. The era of information is only beginning: there will be tremendous opportunities in the next decade for information technology to change Canadians’ lives, he said. “Let’s invest in it.” The job of the government is to identify ICT as a high priority.

Paul Tsaparis acknowledged that there are different issues of concern across the country but said that he would warn the Minister against being tempted to dismiss all the good ideas that have preceded this government. He added that new, trendy terms are emerging, such as nanotechnology and biotechnology, but these technologies are not distinct from ICT — they were developed through ICT investment. He concluded that healthcare is a key issue in Canada and the industry is badly in need of transformation. The Canadian economy, with its publicly funded healthcare system, is a “wonderful living lab for biotechnology innovation.” Why not invest in the healthcare industry by transforming it through technological innovation?

There are huge opportunities for collaboration with the medical community to make the healthcare system as connected as possible, said Chuck Hounsell. On the consumer side,

he recommended a focus on identity theft, which has a big impact on consumer confidence.

Terry Walsh remarked that the lack of participation among SMEs should be on the agenda, even if it sounds like old news. Setting the agenda, verbalizing goals and setting targets can achieve some “easy wins.” The bulk of the work will be done by the private sector. Government can provide some incentives, but most of all, it needs to set the agenda. People will rally around that.

Manley observed that the IHAC process led by David Johnston 10 years ago was successful because it was a specific set of clear, broad-based recommendations, and many ministries were engaged in the process.

A participant involved in e-health innovation commented that Canada could be a living lab to create the health system of the future. “We are ready to act,” he said, but there is a need for “a council of boldness and ideas” where different actors within the health sector can come together to discuss new ideas. This would make the process less fragmented.

Manley remarked that there have been initiatives to draw IT into the healthcare sector, but the sector is currently organized in such a way that the only people who have to worry about costs are the provincial and federal finance ministers and hospital administrators. These, therefore, are the only actors motivated to introduce technology that can reduce costs and increase efficiency.

Tsaparis said that industry has an advocacy role to play by providing compelling examples of success to governments. The Canadian Health Infoway was an excellent gesture on the part of the Canadian government to create an environment where some of these initiatives could be sponsored. What seems lacking now is a number of initiatives like this that can take hold. One of the challenges is the number of jurisdictions responsible for health across Canada: there is confusion about who owns the issue.

Private sector companies “are aware of ROI, so we will go where decisions are made rather than swimming upstream,” said Kilroy. He noted that IBM Canada has a multi-year arrangement with the Alberta government to do work on specific issues. The company has an innovation centre in Alberta that is focused on healthcare innovation.

Asked how the Canadian government can remove obstacles to innovation, Hounsell said that the first step is to identify existing barriers. For example, would a change in one’s way of doing business, such as increased outsourcing, trigger a tax event that would have a negative impact?

Government needs to look at what it is like to do business in Canada, said Clegg. For example, it should identify and eliminate the top three obstacles to starting a business in one province and moving it to another. Currently, there is a lack of knowledge about these issues.

A participant commented that the model of innovation is changing and requires a shift in organizational culture and structure. He asked panellists for their views on how the process of innovation is changing.

Kilroy said that the gap between discovering something and getting it to market has shrunk. People from all over the world are contributing to technological changes, with multiple partners collaborating to bring about innovation. It is essential to forge a closer relationship between the business perspective and technological expertise, Kilroy said. The key question: How do you drive business value? Academia and government can play a role in creating these links.

A participant commented that a big threat today is regulation of the Internet, especially ISPs. More and more, government is looking to ISPs to solve the problem of spam, child pornography and other issues.

Walsh agreed that this is a vexing issue and emphasized that the role of government is to intervene only when market forces do not work. Some issues, such as spam and child pornography, will probably not be resolved by those motivated by return on investment. Such issues will require technological solutions and these innovations must be seen as part of the cost of doing business. However, it is reasonable to give government a voice, because the issues will not all be solved through market forces.

Manley agreed, adding that as long as there is a problem, the question will be, “What is government doing about it?”

Clegg suggested that government should let industry solve the problem, but should step in if it is not resolved in a couple of years. Industry must act much more aggressively and show its piece of the plan.

A participant commented on the value of pilot projects with SMEs that involve e-collaboration, e-commerce, e-learning or other innovative approaches. Panellists expressed interest in such forms of government and industry collaboration. If the results can be targeted, measured and tracked then such projects would be worthwhile, said Clegg. “Clearly there is a business need to provide better technology to that marketplace,” he stated.

Kilroy noted that there is a need to understand who is influencing SMEs in their decisions regarding new technology. These people (for example, accountants and business advisors) should be approached and convinced of the value of ICTs. “There are leaders and laggards,” he noted, and said that the focus should be on the leaders — others will follow.

Asked why online debit services are not yet available, Hounsell said that Interac is building an online debit capacity that should be in place next year. One unresolved issue is the fact that this would only be available for Canadians buying from Canadian companies.

In response to a question about Internet services that allow applications to talk to each other, Clegg commented that considerable work has been done on integration and web services. He acknowledged that Microsoft may need to market these services better in order to make Canadian companies more aware of their existence.

Another participant suggested a partnership between banks, suppliers of hardware/software, and telecommunications companies, to offer a productivity/connectivity opportunity for the 50 per cent of SMEs not yet using ICTs.

Kilroy commented that IBM Canada already serves SMEs through its 1,500 “business partners.” Other panellists added that the needs of SMEs are very diverse and would be hard to address in one swoop.

Walsh said that a key strategy for reaching SME customers is to form partnerships where there is trust. Tsaparis added that the solutions offered must be “radically simple” and easy to use. This notion “must underline everything we do: it has to be very easy to use.”

Asked about their strategies with regard to Aboriginal or “remote” companies, Tsaparis said that he is a board member of the National Aboriginal Achievement Foundation, and Hewlett Packard Canada has sponsored a study related to Aboriginal business, called “Taking Pulse.”

TD Canada Trust is providing infrastructure for the First Nations Bank and is working to provide remote access because branches could not be located in every community, said Hounsell.

Microsoft Canada has a program in place to identify areas of underdevelopment, and a key area of underdevelopment involves Aboriginal communities in Canada, Clegg said. The company is donating several million dollars to train teachers in Northern Manitoba on the use of technology to provide content. Another initiative is to create a system that would qualify students to be employed at any help desk facility in world.

Kilroy said that IBM Canada supports programs for Aboriginal communities that focus on primary education and develop the capacity of Aboriginal firms.

A participant remarked on the need to promote opportunities in industries not perceived as technology leaders, for instance, construction.

Walsh said that his organization has two programs that focus on taking knowledge of the technology into universities and high schools. In many cases, this knowledge has become part of formal accreditation. “We see it as a chance for people to enter the workforce with skills they might not otherwise have had.”

“Are we doing enough?” he asked. The technological knowledge is going from an “add-on” to an integral skill among youth. The work is not done unless every student has working skills.

It was noted that many SMEs do not have a Chief Information Officer, but perhaps this function could be integrated into the CEO’s role or could become a virtual capacity. The key is not to have a “one-size-fits-all” model said Tsaparis. Thus, the wisdom of these strategies lies in the concept of a “virtual CIO.” The starting point is to have “baseline connectivity” in the form of a printer and a land device connecting to a network. The industry challenge is to “make that part easy” for SMEs. The fundamental requirement is a reliable infrastructure.

The session concluded with a comment from Nancy Hughes Anthony that “we have a wealth of talent here and an opportunity to attract more talent to Canada.”

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## **Lunch Keynote: Building the e-Economy**

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### **Michael Sabia**

**President, BCE Inc.**

The challenge of change is ever powerful, pervasive and fast moving, and at the same time the increasing use of the word “change” has become problematic, detracting from its impact, stated **Michael Sabia**. The major challenge is that it is difficult to communicate the speed and scope of change in the ICT sector, amidst the leaps in the development of new forms of communication over recent decades, such as cell phones, satellite television and the Internet. These developments clearly indicate that ICT is tightly integral to Canada’s success as a country. How we respond will determine the future productivity, competitiveness and quality of life of Canadians.

ICTs have not been given high enough priority in the public agenda, Sabia said. The reasons are twofold. First, the ICT industry’s precarious history of success has made it an area easy to overlook. Second, the “dot-com syndrome” has made businesses, governments and equity markets hesitant. However, Sabia asserted that this must change because ICT is a key sector and an enabling technology for improving competitiveness. As a trade-dependent country, it is essential that Canada improve in this area in order to be the best among world economies, he said. After over a century as a leader in telecommunications, the opportunity is here now to extend this leadership.

Over the last decade, 60 per cent of the growth in economic productivity in Canada has been due to investment in ICT. More new types of innovations are needed, such as web-based clinical healthcare applications, expanded connectivity among educational institutions and secure channel initiatives that allow citizens to interact with government online via intelligent networks. ICT is destined to bring greater computing capacity, new transmission platforms, intelligent networking and high-value applications to the next

generation. As such, this creatively disruptive technology represents a great opportunity for Canada and Canadian companies and entrepreneurs to get ahead, capture and drive business productivity, create innovative products and services and thus enrich people's lives.

Within this context, government has an essential role to play. It must create a new policy framework that is in concert with the fast-paced change in the ICT sector globally. Sabia recommended a three-pillared policy framework centred on people, broadband and regulations.

People innovate, not technology, Sabia noted. He emphasized the need to develop and retain the best skills, capabilities and knowledge in terms of human resources in order to compete and excel in the information age. Currently, many Canadian businesses are unable to find skilled employees for their e-business needs, since the demand far exceeds the supply of new graduates in fields such as natural sciences and engineering. Canada ranks 11th behind other countries, including Taiwan, South Korea, Sweden, the U.K. and Japan, in terms of having a national policy to produce the next generation of ICT expertise. Canada has no sectoral council to address the critical issue of human resources for the ICT sector. This is a challenge for government, industries, as well as educational institutions.

Sabia also emphasized the importance of delivering the value of broadband. Connectivity is where it starts and it is essential to extend our networks to connect with one another and with the world (including linking with northern and remote communities), furthering Canada's leadership in satellite technology and providing high-speed Internet access across the country. Beyond connectivity, however, there needs to be more focus on innovative applications, products and services that bring value to broadband and drive its use, thereby developing Canada's export opportunities and setting in motion the cycle of investment, innovation and job creation.

The government must actively drive this agenda. It must act as a modeller, user and catalyst. It must call on its own purchasing power as well as that of domestic service providers to drive innovation, and it needs to create clusters of innovation in order to succeed in the international market.

Regulations need to be reinvented to help develop an ICT-based economy, Sabia stated. In today's world of fewer barriers, customers have real and abundant sources of suppliers and service providers, and competition will only increase in the marketplace. To respond to this reality, new thinking, approaches and laws are needed on how government should regulate, improve and enable competitiveness and productivity.

This does not mean deregulation, but rather smart regulation, in both the social and economic dimensions, he said. The focus must shift from regulating monopolies to encouraging innovation and not "disrupting the disruption" that ICT desirably brings. Regulations must accommodate the speed of change in technology and the marketplace, and foster a dynamic competitive environment that maximizes innovation. It is essential

to level the playing field and fairly apply the same rules to all service providers. Policies must be simplified, clarified and focused on customers.

The ICT industry is one of too few sectors in Canada that can claim to be the best in the world. The opportunity is here now to defend this position. Based on solid pillars focused on human resources, broadband access and regulation, Canada can define the 21st century as one which offers Canadians choices, creates jobs and increases productivity and competitiveness. We must seize and move forward with this opportunity, he concluded.

## **The International Dimension: Growing a Global e-Economy**

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### **John Kelly**

**Chairman, NexInnovations  
Panel Moderator**

**John Kelly** said he has been involved in high technology for 35 years and continues in the field, in his role as co-chair of the Canadian Advanced Technology Alliance and board member at a number of private companies involved in e-commerce. He said he found the issues and questions raised so far at the conference to be relevant and powerful — however, they were all in the Canadian context.

As Canadians expand beyond their borders with regard to the e-economy, complexity is added, in terms of leadership and governance. This brings opportunities that are both exciting and challenging.

Kelly said he had thought at first that the panel members' points of view would overlap, but realized that it is point of view that is the key issue in how to evaluate and determine how to move strategies forward.

### **Thomas Vant**

**Secretary General,  
Business and Industry Advisory Committee to the OECD (BIAC)**

**Thomas Vant** began with a brief overview of the committee's work. BIAC represents the interests of business communities in the 30 most developed countries in the world. It facilitates dialogue between business and governments and facilitates decision-making. BIAC is directly involved in 19 major policy issues, including taxation, trade, sustainable development and education. Many of these issues have horizontal linkages with each other.

At the OECD, business plays a leadership role. Part of the focus is to maximize the benefits of e-commerce and the e-economy as well as maximize ICT opportunities. This is key to the long-term viability and competitiveness of businesses, Vant stated. The

challenge for participants at this conference would be to work together to ensure that a policy framework is developed that allows the e-economy to flourish. There needs to be a proactive, focused policy with a global perspective, he added.

The policy framework must include a regulatory framework for the e-economy that supports entrepreneurship and competition as well as measures to ensure the protection of intellectual property. Security, trust and the continual enhancement of consumer confidence are critical issues, he said.

Vant focused on three key policy areas: trade, broadband and security. In terms of trade, there is the need for any policy developed to promote the development of both domestic and global infrastructures that facilitate e-commerce. Any policy must avoid barriers that would hinder the development of e-commerce. The policy must also promote the full implementation of key commitments, along with the development of the trade of goods and services via the e-economy and lead to open markets for digital products. In addition, the policy must ensure the protection of intellectual property rights.

Broadband offers a window of opportunity for greater economic efficiency. To this end, BIAC and the OECD are in the process of developing frameworks that would allow broadband and flourish to its full potential.

Security is possibly the most important component of any policy, and a positive culture of security must be developed if countries want to capitalize on the full potential of ICTs. Consumers, government and business need to feel confident that going online is not only efficient and cost effective, but also safe.

Multi-stakeholder dialogue is an essential element in any policy development process, Vant added. "Competition, cooperation, security and trust are the keys to realizing the potential of the e-economy," he concluded.

## **Maureen O'Neil**

### **President, International Development Research Centre (IDRC)**

Canada works to build e-economy capacity in developing countries, with one avenue being the close collaboration between IDRC and Industry Canada, said **Maureen O'Neil**. The IDRC is a Crown agency that funds applied research towards building capacity in developing countries. O'Neil described the IDRC's role as a "social investor," with a focus on information sciences, while at the same time noting that the definition of information sciences has evolved dramatically over the years.

Public policy matters and evidence have to form the basis of any policy development exercise, she stated. The Internet is a good example of how something can grow organically; just imagine if someone had asked the early pioneers of the Internet for a business plan back in 1969, O'Neil said.

The not-for-profit sector can play an important role in ICT innovation. In turn, the Internet has played a vital role in the not-for-profit world. O'Neil described an IDRC-sponsored project in Uganda. Working with international partners, HealthNet Uganda has been developed to link healthcare professionals with essential medical information, using Palm Pilots as the medium. Using the HealthNet infrastructure, researchers have also been able to link a Ugandan hospital with rural hospitals and clinics, telecentres, and medical research institutions in Canada and other countries. In this project, the human resources, organizational and policy elements proved far more intricate to manage than the technology.

IDRC is also working in Asia to develop local language-computing capacity, working in collaboration with six universities to develop digital fonts in local languages. This will enable individuals to access computer-based information in the language of their choice.

Another IDRC project is E-Link Americas, a recently launched project that will build local capacity and dramatically reduce the cost of computer access for people living in rural areas of Latin America.

The IDRC has also been asked by the community affairs division of Microsoft to collaborate on developing community learning and telecentres throughout the world.

The development of multi-stakeholder partnerships is essential if the not-for-profit sector is to help develop the digital sector in developing countries, O'Neil said. This approach is an integral part of IDRC's workings. IDRC's ultimate goal to help create markets that will lead to fewer people living in poverty and more people putting their talents to good use.

Good public policy, O'Neil concluded, will encourage the private sector to "pick up the ball and create the wealth and jobs that will reduce poverty."

### **Paul Twomey**

**President and CEO,**

**Internet Corporation for Assigned Names and Numbers (ICANN)**

In his discussion on the challenges around the international aspects of e-economy and the Internet, **Paul Twomey** challenged Canadian leadership to revisit what was accomplished 10 years ago. It is important not to forget the great strides that have been made—and not to overlook the fact that that progress is under threat.

Fundamentally, values drive the Internet. This conference represented an interesting junction, with participants in a position to define the values that will probably drive the Internet for the next 35 years, he said.

There are several stages in international regime formation, Twomey stated. The first stage is the creation of an epistemic community (i.e., a body of people who set the ideas). This evolves to the next stage, where a series of values and objectives are developed. These

values and objectives eventually lead to the formation of a set of processes that ultimately turn into an institutional expression.

The development of the Internet has unfolded according to this process. In September 1969, two computers were connected. By December that year, a four-node network was established. The subsequent evolution of the Internet of today was envisioned by a “club” of private and academic researchers that grew as the years passed. In 1996, the G8 met to discuss information and communication technologies; interestingly, the word “Internet” did not appear in that meeting’s agenda. Today, approximately 18 billion times each day people around the world access an Internet site or send an e-mail. The Internet itself has grown from 100 hosts in 1978 to 100 million hosts in 2000, and this figure is well on its way to becoming one billion. It is also interesting to note that the Internet grew “under the government radar screen” until the mid-1990s, Twomey added.

Twomey outlined some of the values and perspectives of the Internet community:

- Policy and decision-making should come from the bottom up.
- Participation should be open to everyone.
- Consensus-based decision-making is important.
- Cooperation and coordination are key.
- Swift decision-making is preferred if possible.
- A private agreement or contract approach is preferable.
- Innovation should be encouraged.
- The system should be allowed to evolve over time.
- Meritocracy and standards should form the basis of that evolution (i.e., if you build it and it is good, people will use it).

The original mechanisms that were developed to administer the Internet were under the control of a group of people who had been involved since the beginning; however, as the Internet grew, the demand for more formalized management also grew. Twomey called this “a consequence of success.”

ICANN was developed in response to this demand for formalized management. Twomey described ICANN’s role using a postal system analogy, likening the Internet to a postal system, with ICANN being the body that ensures that the addresses on the envelopes are correct. It is not concerned with what is in the envelope.

As the Internet becomes truly global, the clash of regimes is growing, Twomey said, describing the two regimes as the old international telecommunications world versus governments and diplomats. These two regimes have different views of the world, for instance, “end-to-end” versus top down.

Some 70 to 80 countries are currently coming onto the Internet and many are asking the same questions that were asked by OECD countries during the 1990s — however, they are not necessarily coming up with the same answers. The challenge is to decide whether the Canadian leadership wants the rules to be changed now, in light of this new questioning, Twomey concluded.

## **Paul Misener**

**Vice President, Global Public Policy, Amazon.com**

In 1995, Amazon.com, still a tiny organization at that time, received its first international order, recounted **Paul Misener**. It came in the form of a package from Bulgaria that contained \$100 cash along with a note requesting a computer manual. The manual was shipped.

Today, Amazon.com serves 165 nations. Misener said that Amazon realized that it was not enough to serve the globe, it is important to serve local economies and tailor services to those economies. This led to the development of sites such as Amazon.ca, which contains Canadian cultural products, a bilingual format and listings in Canadian dollars. Consumers benefit from this type of service because products are shipped more quickly since they are sourced locally, Misener explained. There is also better cross-cultural integration. A person in Europe can access Amazon.ca and find out about Canadian-authored books more easily. The key is being mindful and respectful of cultural norms, he said.

In terms of public policy, governments are often tempted to do something when something big, such as the Internet, is involved, Misener said. He emphasized that any public policy should be based on three guiding principles — temperance, humility and parity.

In terms of temperance, governments have to ask themselves whether government intervention is truly necessary in the market. Today, competition on the Internet is working. He cautioned that the consequences of government over-regulation would be severe; pace of innovation could be hampered or even prevented by over-regulation.

In terms of humility, regulators have to ask themselves if any given regulation will actually work. The regulations could end up doing more harm than good, he said.

Finally, there has to be parity between the online and offline worlds. Where the online world is truly the same as the offline world, they must be treated the same, Misener said. It is only where the two worlds are truly different that regulators should consider formulating different regulations to govern the online world. At the same time, when there is a difference between the online and offline services offered (as for postal services), it may not necessarily require different treatment.

Misener said that he is fascinated to see what is happening in Canada in terms of the Internet. At the beginning of 2004, there were 65 million Internet users; by the end of 2004, that number will have increased to 100 million.

## **Discussion**

The chair asked the panellists about the power of the Internet to change way of life in terms of democracy, ownership and power.

Thomas Vant spoke about the way that different generations view the Internet. The older generation views it as a problem-laden tool; this view is not shared by the younger generation. He added that it would be unfortunate if there were a move away from ICANN to a government or United Nations-run system.

Maureen O'Neil added that very few people are aware of the debate that is currently underway about ICANN or about the implications of a change to the status quo.

People should not overlook the great possibilities that the Internet can bring to developing countries, she said. The possibilities of greater governmental transparency regarding the Internet can be revolutionary in some countries. The Internet can also create a positive dynamic for critique and evidence in terms of public policy. For instance, what will the Internet mean in China, a country that is historically slow to change politically? The Internet brings optimism in terms of the opportunity it offers citizens to know what is going on around them.

Paul Twomey said he is hopeful, though slightly fearful, that the Internet will have the same rolling implications that were seen with the advent of the printing press. The development of the printing press led to far-reaching questions:

- Who has the right to speak?
- About what?
- In what language?
- What is the unit of dialogue?

The Internet has the potential to provide a voice to people who have historically been without a voice and without power. However, this also raises questions about who is allowed to have a voice and in what context. Another question that is raised is whose voice is relevant and important.

Paul Misener stated that Canada is in a unique position to generate something new in terms of policy. Canada can learn from the mistakes made by other countries and focus on practical matters in a light-handed way.

A participant talked about Canada's leadership role in terms of development aid. He said that the issue is threefold: policy, skills development and financing. The private sector is suited to two of these three elements. He asked the panellists whether Canada should place social investment as a high priority, and how Canada can better engage the private sector in social investment.

O'Neil said that the private sector is vital in terms of social investment and development. However, private sector entrepreneurs often face extraordinary difficulties when trying to establish a legal business in developing countries. That aside, the private sector should be excited about the possibility of creating new markets and being part of the transformation of developing countries.

Vant said that outreach to non-OECD countries is very hard work. BIAC realizes that while the e-economy can potentially be one of the greatest contributors to the world in general, the process will be long and will require a great effort.

On the issue of Internet governance, a participant commented that developing countries have legitimate concerns about ICANN because of the influence the United States has over its funding. Paul Twomey responded by saying that governance is a layered issue that involves technical coordination, and legal, social and cultural issues. In addition, the question of governance involves both machine-to-machine interactions on one level, and human-to-human interactions on another. It is important to determine where gaps in governance exist and where the “e-” is very significant.

A participant cautioned that there is a danger in changing Internet governance as most people have only an intuitive view of the Internet — they are able to use the it but do not have any sense of how it works.

David Johnston thanked the panellists for their thoughtful presentations. It was interesting to note that the digital divide and cost did not enter into the discussion, he added.

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## **Public Sector Transformation**

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### **Michael Binder**

**Assistant Deputy Minister,  
Spectrum, Information and Telecommunications Technology, Industry Canada  
Panel Moderator**

One of the recommendations made by the IAC was that government must play its part in using technology to improve its service to the public, said **Michael Binder**. This is now known as “e-government.” The goal is better service to public.

Binder explained that it was decided that Industry Canada could not play the lead role in the transition to e-government. The responsibility was given to Treasury Board, which can mandate government to provide online services.

Canada is now deemed to have the best government online services in the world. What is the next challenge? Binder said that this question would be explored by the afternoon’s panel.

### **Don Lenihan**

**Council CEO and Executive Director, KTA Centre for Collaborative Government**

**Don Lenihan** discussed the challenges of integrated service delivery, governance and accountability.

Lenihan described a pilot project to create an online “blue pages” system listing all the services available through federal, provincial and municipal governments. A key issue is how to make such projects sustainable over the long term. Projects undertaken by an intergovernmental team tend not to be sustainable once those individuals move on.

One solution may be a sort of “integrated service delivery platform,” an organization outside of government that can make integrated service delivery (ISD) sustainable over the long term. This could take the form of a Crown corporation or a non-profit organization.

Although there is concern regarding shared accountability, it is possible to develop mutual accountability between governments and the organization that serves as the ISD platform. One requirement should be that every participating government has a role to play on a regular basis (e.g., updating its information). The challenge is to enforce this form of government accountability, Lenihan stated.

One consideration is how many integrated service delivery platforms are needed. The answer could be determined by identifying the different “faces” of government, such as delivering social services, creating a level playing field, enforcing regulations, and so on, he concluded.

### **Ken Cochrane**

**CEO, Information Technology Services,  
Public Works and Government Services Canada (PWGSC)**

PWGSC provides services, such as pension systems, through a common system, stated **Ken Cochrane**. The smaller government departments are the prime users of these services. Information Technology Services (ITS) at PWGSC also delivers a Secure Channel, which is a fundamental piece of technological infrastructure that supports the Government Online initiative. Over 122 departments and agencies are connected to that secure infrastructure.

Historically, the federal government has made a good effort to manage human resources in a consistent way; but although its policies are uniform, different departments implement them differently. The same is true with regard to financial solutions. One of the goals of the Government Online initiative is to provide services in a consistent manner.

Government Online has had great success, with Canada rated in various studies anywhere from first to third in the world for its approach. One of the ITS goals is to get to the point where 50 per cent of e-government systems are delivered in a common fashion. Today, there is consistency among only 5 to 10 per cent of systems.

Greater efficiency can be achieved by taking action in a consistent way across departments. However, challenges arise when smaller departments cannot deliver at the same level as larger ones. It is very difficult to offer standardized services if all partners

delivering a service are not operating under the same conditions of quality, availability and reliability, Cochrane noted.

Other challenges include security and cost.

The best approach is one that brings together accountability, efficiency and collaborative work. “We are working closely with partners to achieve this outcome,” said Cochrane. A major challenge is to integrate the different approaches used by the approximately 122 departments and agencies. The goal is to simplify the system by moving toward just two or three approaches.

ITS takes a measured approach that requires strong leadership at the enterprise level and a service/strategic perspective at the departmental level. Other requirements include strong governance and close collaboration with stakeholders, i.e., departments and suppliers.

### **David Zussman**

#### **Executive Vice President and CEO, EKOS Research Associates**

**David Zussman** situated e-government activities within the current federal context. In 1999, the federal government made a commitment to being the most connected government in the world to its citizens, and set up a government advisory committee. There were two objectives: to improve access to government information, and to give Canadians access to services on a 24-hour basis.

Canada has done a good job in providing government information to Canadians, however, it has done a poor job in providing access to services online, Zussman maintained. He expressed concern that the e-government initiative is beginning to lose momentum, and called on the participants at this conference to reinvigorate the initiative.

Zussman listed the key elements of the Government Online initiative. These include a call to engage citizens more fully in the governance of the country, to recruit among the public service employees who are interested in e-government, and to engage leadership at senior levels. Technological objectives include the development of common platforms, single windows, and innovative solutions. “We have to get back into an experimental mode of thinking, where failure won’t be seen as disastrous to one’s career,” he stated. These ideas need to be better communicated to MPs, he added; e-government needs to be placed back on the public agenda.

On the issue of shared accountability, Zussman noted that it is possible to have multiple responsibilities and shared accountabilities. Accountabilities do not always have to be ascribed specifically to one person, but that does not mean that each person is not responsible. In other words, organizations can operate on a shared platform and still maintain a reasonable accountability regime. “We have to break down those silos that isolate innovation, and allow for more free-flowing discussion,” said Zussman.

He concluded by emphasizing the need to challenge government to invest more in e-government. Such an investment can yield huge benefits in terms of efficiencies, services and collaboration between different levels of government.

### **Frank Hart**

#### **Vice President, Government Solutions, EDS Canada**

Government has not done as well as other sectors of the economy in the ICT area—but it has more to gain, said **Frank Hart**.

Canada ranked highly in a global study on agile government, yet more can be done, he said. For example, the U.K. government just finished an efficiency review process that called for the U.K. civil service to be downsized by about 20 per cent. Many of those people will then be put back on the front lines. The aim is to increase productivity. Hart concluded that an expenditure review should not just be about cuts, but about the transformation of government through ICT. He cautioned that there would soon be a whole new generation of voters who will demand more in terms of their interaction with government.

The private sector is ready to play a role in helping government make efficiency gains through infrastructure changes. An eight- to tenfold increase in productivity is possible—but this will require a radical shift in how government does business, Hart emphasized. Is the government ready for these kinds of changes?

Many government bodies are rightfully concerned that the private sector does not share the same risk if a system fails, since private sector service providers are not on the front lines of government, Hart noted. Within the public service, there is also an aversion to risk because some services are critical and cannot be placed at risk. In addition, there is no “upside” to risk-taking in the public sector, only a downside, he remarked. Nonetheless, those governments that work out these issues with the private sector will leap ahead.

The final barrier is in the way that government is organized, said Hart. For 20 years, government has been setting up new organizations to do new things. This has led to new “silos” and has contributed to a lack of connectedness. Changes must be made to organize government around the needs of citizens. For example, the Department for Work and Pensions in the U.K. put two departments together to manage people’s case files throughout their working life, from their entry into the workforce to their retirement.

To summarize his point, he referred to another study in Europe, which asked citizens what they wanted from government. The response was that they wanted the services to be available, but they did not want to interact with government.

## Discussion

“If e-government is useful and citizens want it, then why is the initiative losing momentum?” asked Michael Binder.

David Zussman commented that problems arise where departments want to protect their turf. The goal should be to dissolve these barriers and focus on providing services to citizens. Don Lenihan added that services cannot be integrated without integrated information.

Referring to the commitment made in 1999/2000 that Canada would be the most connected country from a “government online” perspective, Ken Cochrane stated that the government is on track to meet that objective. New developments can be expected over the next 12 to 18 months that will tie departments and services together. This is a challenging task, since each department has to carry out a major transformation to convert from its old legacy capability to providing real-time fully interactive services, he noted.

Binder asked for comments on how to come to grips with the silos of government departments. For example, a department may have a “look and feel” standard that is not shared by everyone.

Frank Hart commented on the need to develop systems that are “citizen-centric.” Agencies should provide cradle-to-grave services that are organized around the “touch points” or life events of citizens. These agencies will be different from traditional government departments, because they can be valued based on the efficiency of their metrics. There does not have to be a “line of sight” from policy, Hart explained. In other words, policy-making and service delivery can be carried out separately.

A participant asked about the possibility of private sector involvement in providing platforms of access for government. Hart agreed that this could be a possibility but said that the issue of privacy would have to be addressed.

It was noted that the private sector could help in the transformation of government by providing the skills and capacity to redesign and reorganize government systems. A panellist warned, however, that many Canadians would be concerned to see private sector actors “disappear behind the screen of government,” investing in government in order to get a dividend at a later date. There needs to be a way of securing private sector investment in the transformation of government without raising the spectre of the private sector taking over government.

Cochrane commented that one solution to the issue of privacy and security is to use Secure Channel, allowing citizens to choose whether to have one identity per department or to reuse the same identity across departments.

Panellists discussed what it would mean to provide services that are “citizen-centred.” Cochrane stated that services should also be centred on the needs of businesses and government workers; both of these groups use e-government services.

Hart commented on the need for practical approaches such as pilot testing. The panellists noted that work needs to be done to understand the full costs and benefits of systems such as the patient identifier, which has poor return on investment for Health Canada but is critical to the system of disease management.

The session concluded with an observation by a participant that government should invest strategically to build local capacity and empower communities. Lenihan agreed that this is a key challenge, noting that integration will never be achieved without mastering community delivery. “We need to learn more about community partnerships,” he said, adding that communities have knowledge about their own needs—knowledge that would allow the government to do a better job of matching resources with needs.

## **Dinner Keynote: Building the 21st Century Economy in Canada**

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**Hon. David Emerson**  
**Minister, Industry Canada**

**Hon. David Emerson** began by noting the importance of the participants at this conference to the future of Canada and its economy, as they include pioneers as well as today’s “heavy hitters” in e-economy. ICT is a bold new transformative technology, much like roads and electricity, and the progress to date owes great credit to the amount of work done over a few short years.

Emerson’s address focused on assessing the broader economic prospects that Canadians are facing, as well as some trends, threats and opportunities that will shape the future. He noted the government of Canada’s good job with its finance portfolio over the last decade, including balancing the budget, producing strong macroeconomic performance and building up consumer confidence.

Referring to the recently announced injection of new funds into provincial healthcare systems, Emerson stated that healthcare is only one sector that will benefit from the Canadian government’s financial accomplishments. He anticipated that Canada’s economy would also be strong enough to advance reforms and provide new funding around other sectors, including cities and children, withstanding the associated fiscal demands.

Canada’s economy is relatively small, but highly trade dependent, Emerson said. Canada is by far the most trade-dependent country in the G7, and overwhelmingly tied to the U.S.

economy. While the strongest ties are within North America, in an environment of global change, it is essential to also give due attention to the business Canada does around the world. This includes fundamentally altering the Canadian economy and the way Canadians live, based on factors such as global consolidation, the global supply chain, international trade arrangements, and pressure on global markets, he said.

Emerson described some current trends. The European Union has become a major bloc today. In Asia, traditional manufacturing is being transformed, and the region has now become a dominant trade force in its own right. ICT is transforming India, much like it had done Singapore. The role of international borders has changed due to ICT and transportation, with borders becoming less relevant in today's open world of digital transactions and knowledge products. In such a borderless world, investments go where the return is highest. Humans have become much more mobile, and now behave like capital.

People are the major assets of knowledge-based companies, said Emerson, adding that the government cannot change that reality. However, government can create an environment that allows Canada to retain the human capital advantage through a climate that encourages highly qualified graduates to remain and build their families, businesses and futures here.

Canadian ICT policies and actions today will have a major impact on how Canada bears in the global economy 10 years from now. For example, the transfer of ideas and knowledge products in an e-economy is borderless, yet government must still clear away barriers to the free flow of goods in other areas, such as trade disputes, industrial mergers, acquisitions, consolidations, etc.

Canada will be well placed if its policies allow Canadians to see the country as the preferred place to do global business, Emerson stated. Canadian policies must strengthen corporate commitments toward engagements such as advancing innovation, developing clusters of talent and resources, building on partnership potentials and enriching communities. In addition, innovative research must continue to take place in government, private sector and university labs in Canada. The aim is to make Canada a fully ICT-enabled economy and foster growth and wealth creation across the country.

Profound changes are occurring not only in the technology sector but also in traditional industries, Emerson said, noting that much of these changes are technology driven. For example, 10 years ago forestry was written off as a sunset industry, yet today it uses almost every technology imaginable. It is economically strong, profitable beyond prediction, and despite protectionist duties, is environmentally responsible. As a technology-driven industry, it hires many educated people in parts of Canada where it has previously been difficult to find employment. Forestry is also among the few Canadian sectors ahead of the U.S., providing an example of the very important convergence that is taking place between technology and traditional sectors. Another example is the auto industry, which is currently experiencing hard and fast transformation. Technology is being infused in traditional industries like never before, Emerson said.

Canada has come a long way in a short time and Canadians should take pride in being at the forefront among nations. However, Canada must work hard to stay ahead, through collaborations among government, academic and business partners that create synergy and innovation. Government in particular needs to assist the research push within universities and encourage systematic and far-reaching work to advance the e-economy. In addition, whether research advances come from publicly or privately funded institutions, it is important to ensure that they find their way to the private sector, where the benefits of innovation can be translated to improved productivity and competitiveness throughout the economy.

There are different ways to fund research, and there are certainly better ways to harvest and commercialize the results of research, said Emerson. Budget 2004 has committed \$270 million towards new investments in venture capital financing in order to provide support to new innovative companies. For the next five years, this investment will help knowledge-based companies fund the research and commercialization of key enabling technologies, such as nanotechnology, microelectronics, genetics and biotechnology.

Turning to the small business sector, Emerson noted that small businesses blanket Canada, and are a key mechanism for technology dispersion within the country. Yet, most have been slow to adopt new technology. To stimulate and accelerate technology uptake, tax incentives and lower taxes may have a role to play. In the bigger picture, businesses large or small, as well as institutions such as schools and libraries and so on, must all be agents of technology dispersion, connect to global opportunities and infuse technology in all aspects of social and economic life.

Referring to the current

Canadian Radio-television and Telecommunications Commission (CRTC) hearings on the issue of voice-over-Internet protocol (VoIP), Emerson said that the government's role as a regulator affects the ability to attract consumer confidence to take advantage of e-products. Government policies must protect intellectual capital and knowledge assets, reinforce the development of an economy built upon technology and ensure environmental responsibility, protecting the health and safety of Canadians as well as the environment while ensuring the least drag and disruption to the economy. Government and industry must work together in the overall planning and development of regulations, and clear and timely government decisions must be made on issues such as foreign ownership restrictions. Other key elements include eliminating regulatory duplications, addressing dispute resolution and establishing new acts or codes of practice to protect privacy within an e-economy.

Emerson also addressed the issue of spam, referring to it as a "cancer of the e-economy." It is a public nuisance, an invasion of privacy and a threat to network infrastructure. There is no solution so far, although the government's spam taskforce is drawing on expertise from all sectors to strive to get it under control. If this fails, the risk is a backlash against the very tool needed to drive our success, he said.

Further, regulatory efforts must reach beyond Canada to connect with other countries through regional, bilateral and multilateral agreements. Emerson pointed to the World Trade Organization (WTO) as a powerful force for establishing trade principles among WTO states.

Being by far the most trade dependent of the G7 nations, Canada is the most vulnerable and therefore must be the best. Toward this end, Canada must sharpen its competitive edge, fully and strategically engage ICT and focus on the large and fundamental themes of research and innovation nurtured by good public policy. Above all Canada must renew and upgrade its human capital, invest in networks to coordinate efforts, push new scientific development along the institutional track, reward Canadians for great science and turn advances into commercialization success stories that permeate the economy and drive prosperity and better living standards for all.

## **Day Two: Opening Remarks**

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### **Nancy Hughes Anthony**

**President and CEO, Canadian Chamber of Commerce**

**Nancy Hughes Anthony** welcomed the participants and began with a brief summary of the previous day's discussions. She first noted that in order to improve the economic wellbeing of Canada, to make the economy productive, and for Canada to prosper within the high technology landscape, the average firm thinks that adopting e-business is a no-brainer. Time and time again it is shown that technology makes significant contributions to firms, increasing revenue by as much as 30 per cent, and when properly implemented decreasing costs as well. This is the message CeBI has sent to leaders in the past two years. The value of this business channel must be taken to Canadian SMEs.

Hughes Anthony then briefly summarized the key messages from the presentations delivered the previous day by The Honourable David Emerson and Michael Sabia. Emerson spoke about developing strategies to enable our trade-dependent nation of Canada to become competitive internationally. In addition, he highlighted the importance of the health sector, especially the chronic ICT underinvestment in this sector, which is a real opportunity for business. Sabia emphasized the need for a progressive policy framework based on people, delivering the value of broadband for Canadians, and developing a regulatory framework that allows and encourages technological change.

Another challenge comes from the SME sector, Hughes Anthony said. Part of the job remains to get small firms on board. Still, 50 per cent of Canadian SMEs are not using e-business. As well, as e-business matures and more advanced solutions evolve, part of Canada's challenge is a need to consider new issues. Hughes Anthony said that some of these issues would be explored the day's session. Topics would include responding to customers' need for privacy, building the popularity and use of e-business as a channel to maintain customer relationships, giving support to new business, creating telecommunications infrastructure, enabling Canadians to use new products and services, and increasing efficiency for new sectors of society.

Hughes Anthony asked the panel and the audience to consider next steps in strategies and give recommendations and courses of action to advance e-economy. She noted that comments, papers, and proceedings would be submitted to the live conference website, whose URL was listed on the back of the conference folder. She invited the participants to keep checking to see the progress of the conference. She closed by thanking the sponsors and partners of the conference for their participation and generosity.

Hughes Anthony then introduced the keynote speaker, Geoff Ramsey, CEO and Co-Founder of eMarketer.

## **Morning Keynote: Engines of Growth in the e-Economy**

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### **Geoff Ramsay**

**CEO and Co-Founder, eMarketer**

**Geoff Ramsey** gave a presentation on a series of statistics gathered and analyzed by his New York-based research firm eMarketer, on e-business, online marketing and the global Internet.

Worldwide trends in broadband networking indicate that more time and money are being spent online overall. Canada is high among the top 10 leaders. However, both the U.S. and Canada trail far behind in household wireless adoption, and this is an immense opportunity to be tapped, he said.

E-commerce is driven by efficiency. In 2003, Canadian consumer e-commerce was in the order of \$3 billion to \$5.5 billion, with the growth rate between 2002 and 2003 as high as 48 per cent. Yet, consumer e-spending in Canada lags significantly behind the U.S., Ramsey noted. This is due to the majority of North American online stores being U.S.-based, inadequacy of merchant websites in Canada and greater consumer fears in Canada about security and privacy. However, the impact of Internet efficiency remains significant on all phases of the sales cycle, from awareness creation to interest generation, from pre-purchase research to buying and selling, and from post-sales support to customer relationship management.

Labour productivity and e-business trends in Canada and the U.S. indicate that increasing productivity is the second highest priority of business, after ensuring the company's long-term financial health. Canada also lags behind the U.S. in this area.

Moreover, Canada lags behind the U.S. in terms of IT spending and growth, Ramsey noted. In particular, the adoption of Internet business solutions by SMEs has stalled or is stalling, with 50 per cent of Canadian SMEs not having adopted e-business far enough, stopping at the e-mail communications stage.

Ramsay presented some recommendations for business and government in Canada. Large firms, especially industry leaders, should lead by example and aggressively adopt e-business solutions, pushing suppliers and key trading partners to do the same. SMEs should adopt a three- to five-year e-business strategy as part of their overall business plan, and must also be willing to take some risks.

In terms of government, Canada should continue to foster broadband adoption by creating competition designed to reduce costs and increase speeds. The government should offer more tax incentives to stimulate e-business adoption. It should also launch a national campaign to encourage Internet use by both business and consumers, he concluded.

## **Business Opportunities and Growth**

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### **Nancy Hughes Anthony**

**President and CEO, Canadian Chamber of Commerce  
Panel Moderator**

**Nancy Hughes Anthony** first elaborated on the important contributions that ICT makes to competitiveness, innovation and wealth creation. Canada is facing tremendous challenges in the global e-economy, and some key ways to contribute to the economy at the sector, regional and national levels are to reduce costs and squeeze out efficiency in the marketplace.

The Organization for Economic Co-operation and Development (OECD) considers investment in ICT as an important means to increase rates of productivity and competitiveness. On the flip side, the failure to invest in ICT will lower competitiveness and result in less wealth, less growth and fewer jobs. Canada's consistent lag behind the U.S. is a clear indication that its economic plan must include ICT. Canadian e-business initiative shows where drags appear in Canada's economy. Canada's e-business adoption is lower than that of the U.S. As well, Canada's use of basic IT needs to evolve to implementing technology strategy and changing the business accordingly.

Hughes Anthony then introduced the topics and the panel. Its focus was to describe the potential of e-economy in providing more and greater opportunities for companies and businesses of all kinds. The topics included opportunities in the healthcare and educational/training sectors and in e-marketplaces and e-payments.

### **Derek Fry**

**President, Visa Canada**

The future health of the Canadian economy is closely tied not only to e-economy but also electronic payment (e-payment), stated **Derek Fry**. Visa processes approximately \$3 trillion in electronic transactions annually, and in 2003, electronic transactions accounted for \$122 billion in annual sales. Over the last 20 years, e-payments contributed \$107 billion to the Canadian economy, representing 25 per cent of the country's economic growth.

E-payments drive growth in two ways. First, they are more efficient than traditional forms of payment. Second, the "anytime, anywhere" convenience opens up new markets and boosts consumer spending. The result is enhanced productivity and cost savings, which drives growth. In the last 20 years, \$60 billion of the rise in Canadian consumer spending was directly due to e-payments.

As Canadians become more comfortable with Internet transactions, they are also increasing their online shopping and taking advantage of the expanded markets offered by e-payment, where online shoppers as well as international travelers can buy from

Canadian businesses. Canada ranks first among a 50-country sample in the use of e-payments, higher than both the U.S. and the U.K., Fry said.

However, challenges remain. A major issue is security. To withstand fraud, over the next five years Visa will invest in new technological capabilities such as password authentication and chip technology in cards and terminals. Consumers are never responsible for fraud, since Visa offers zero liability on all purchases. However, boosting consumer confidence requires greater education about Visa's zero liability policy and verification process.

Visa's global capability has allowed Internet users to transcend national boundaries in their buying and selling, with global management in place to ensure fair play. However, global legislation regarding the use of the Internet and associated technologies must constantly keep pace with the market. In order to remain competitive, Canada must encourage consumers and businesses to embrace the e-economy while investing to ensure the long-term integrity and security of e-payments, Fry concluded.

### **Gary Briggs**

#### **Vice President and Country Manager, eBay Canada**

The immense power and efficiency brought by the Internet and e-commerce come together in eBay, said **Gary Briggs**. eBay is essentially cross-border trade, with many businesses starting and developing solely on the eBay backbone, he added.

eBay started in 1998, with the eBay Canada website launched in April 2000. By that time, Canadian sellers had found and were already exploiting the U.S. markets in place. Today, eBay Canada has become a regional marketplace within North America that is well recognized by sellers from the U.S. and elsewhere. This same trend can be seen in Europe and other parts of the world, Briggs noted, adding that eBay has recently added a China site to its global network.

eBay's 115 million registered users worldwide create what eBay is — an electronic marketplace platform for the meeting of remote buyers and sellers, carrying no inventory and providing no customer service. eBay has benefited from tremendous awareness, as almost everyone knows of it.

Core to eBay is the recognition that the nature of the marketplace is one of constant learning and evolution, Briggs said. For example, eBay Motors resulted not from an original business decision but from a community of users who recognized a need — they had a passion in cars but nowhere to list them. Today, eBay Motors is an \$8 billion global marketplace for cars and parts, products that had never before been traded online.

eBay will continue to evolve and grow as people increasingly recognize the power to start small businesses on eBay, as well as the value and efficiency it offers for consumers. It will continue to learn from its users and evolve to what the users want it to be, he concluded.

## **Myrna Francis**

**President, Mfran Enterprises Inc.**

Healthcare in Canada is commonly thought of as a critical, valued and high-cost service, but at the same time, noted **Myrna Francis**, it is a fast-growing \$100 billion industry that contributes to 10 per cent of the country's GDP and 40 per cent of provincial spending. It is essential to think of healthcare in these terms if we are to take advantage of its immense opportunity for economic development and job creation.

There is a global movement toward electronic health records, Francis noted. A great deal of patient clinical information is now stored electronically, and online accessibility will soon be available to any caregiver, regardless of where the patient received treatment. Electronic banking took 30 years to arrive in Canada, and healthcare is just at the beginning of automation now. Through Health Canada's \$2.2 billion Canada Health Infoway initiative, Canadian provincial health systems will be automated in the next 10 years. Combined with the wide availability of broadband, Canada has the potential to have the most automated healthcare system globally, giving it a real global competitive edge.

Once Canada's health system is automated, Canadian technology companies and medical services will have the opportunity to become service suppliers to the global health industry, similar to companies in the U.K. and the U.S. Canadian investments in ICT, software and a highly skilled labour force are key ingredients for competition and growth, both nationally and globally. In particular, exceptional opportunity lies in biotechnology. Canada has the research base and population size to be in a good position for clinical trials for pharmaceutical companies, and automation will lower the costs even further to make the country an enticing location. Once clinical information on Canada's large population is available electronically, the ability to link to genomic information will be unsurpassed globally, leading to greater competitiveness and innovation, such as in the development of designer drugs.

Canada is well positioned to capitalize on healthcare as both an industry and a right for Canadians. The key is to invest in expansion and modernization, identify the opportunities and sub-industries for development and growth, find the entrepreneurial spirit to spawn innovative spin-offs for healthcare and put in place financial and other government policies to enable success, Francis concluded.

## **Jean-Marie Toulouse**

**Directeur, École des Hautes Études Commerciales (HEC)**

**Jean-Marie Toulouse** began his talk on training in business with commendations to the Canadian government and CANARIE for their work over the last 10 years in building an excellent IT infrastructure across Canada. However, he added that infrastructure must be well maintained and used, and organizations like CANARIE must act as connectors for all sectors of society and provide platforms where people can meet, develop ideas and solve societal problems such as poverty, health and social services.

Thus, innovation is not just about product innovation but also process innovation, and Canada's focus should be on business models, not technology. Canada is a large country, and with its low population density, the country must sell to foreign nations to keep its economy growing. In this context, the ability to focus on process is key, Toulouse said, and emphasized that future growth and improved productivity in Canada will come from better business models, in particular in the SME sectors, such as service, retail and arts and culture.

Toulouse noted that large corporations and universities tend to adopt ICT and new technology quickly, while SMEs are much slower in this regard. This could be because SME owners perceive IT as a cost rather than as opportunities for new business. SMEs are often family-operated and tend to focus on savings and salaries, and lack the confidence to adopt ICT. The national e-economy agenda must address these issues in order to bring SMEs on board, Toulouse said.

Toulouse also emphasized the crucial function of universities to produce knowledge, train experts in all fields and freely distribute the results of research. A particular challenge is to ensure a well-organized and connected flow of questions and concerns between academics and the users of knowledge and research.

E-economy is shifting the focus from the organization itself to how we organize and how we learn, Toulouse said. To be successful, e-economy requires excellent growth managers who can run companies, use capital properly and make good choices for the future. Institutions of higher education have a large part of the responsibility to train these future managers.

## **Discussion**

A participant asked about the possibility of individuals gaining access to and managing their own health records. Myrna Francis responded that this is the intention in many countries; however, the technology is not yet in place.

Another participant commented that many small businesses are not adopting e-business solutions because they are not simple and easy enough to install and operate. Jean-Marie Toulouse suggested some options, including open sourcing, developing better business models, or turning to a consortium such as CANARIE. Nancy Hughes Anthony added that peer-to-peer assistance by local associations or competitor groups exist in different sectors.

A participant suggested that government work with industry associations and treasury institutions to move small firms up to best practices. Commenting on the high cost of credit- and debit-card transactions for small businesses, he asked if there is an alternative solution for micro-payments. Derek Fry replied that so far there have been efforts but no solutions. However, the progress with regard to chip cards in France and the U.K. may

lead to possible solutions. Gary Briggs added that micro-payments likely would not take off until a move to handheld devices.

A participant expressed concern that IT may be a great enabler to improve the healthcare system, but brings little value to physicians in terms of improving patient care, saving time and making money. He suggested joint government and industry research to identify good IT practices in clinical settings, and then using them as educational tools to secure physician buy-in. Francis stated that the technology and best solutions have yet to bring value to the day-to-day work of physicians. A further challenge is the need to customize applications for individual offices.

Another participant requested greater support from government and industry to provide SMEs with a level playing field vis-à-vis their big-chain competitors who have adopted e-business. His group has received good support from the Economic Council of Canada in terms of access to ICT. Toulouse replied that this was a good example of what can be done in the SME sector. Another aspect is to improve information on how to use technology. Hughes Anthony commented that website resources on e-business topics may not be enough; the public may need incentives to consult these sites.

A participant said that the term “SME” needs to be better defined in the national agenda. Currently, it refers to a firm with one to 500 employees, even though many firms are much smaller than 500. A national agenda must provide solutions appropriate to the size of firms. Toulouse suggested focusing on a size of between 25 and 50 employees, and not more than 100 to 150. He also stressed the importance of a sectoral focus for SMEs. Briggs said that eBay serves many SMEs with fewer than 10 employees and sees them as a great source of economic innovation and growth.

A participant said government should recognize not only manufacturing businesses in their e-business support for SMEs but also other types of business.

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## **Infrastructure for the e-Economy**

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### **Andrew Bjerring**

**President and CEO, CANARIE Inc.**

**Panel Moderator**

**Andrew Bjerring** explained that he had participated in the workshops leading up to this conference and that a workshop on intelligent infrastructure and e-economy led to this panel session. This panel represents an opportunity to address many of the themes that have been touched upon in the last day and a half.

It is important to revisit the work done by the National Broadband Taskforce as well as expand the reach of broadband, Bjerring said. The challenges for the future involve more than ensuring that the infrastructure is in place — it also involves ensuring that the

communities being served by that infrastructure realize the social and economic benefits of e-economy. This will ultimately enhance overall business capacity, he said.

He reminded people working in this area not to address the technical infrastructure independent of the application infrastructure that will benefit users. Referring to the modernizing capacity of broadband networks, Bjerring reiterated the challenge that has been put forward by South Korea; namely, to process 100 million bytes per second by 2012.

**John A. MacDonald**  
**President and COO, Allstream**

Intelligent infrastructure means more than the technology and networks that are developed, said **John A. MacDonald**, it also refers to people and how they use the technology.

Technology can allow communities of interest to coexist securely on public networks. Intelligent infrastructure is defined by what it facilitates. MacDonald identified six categories:

- Ubiquitous access
- Plentiful resources
- Convergence (i.e. the blurring of networks and computers)
- Security and virtualization
- Loosely coupled software architecture
- Applications awareness and connectivity

In essence, networks should be developed and adapted to users and their desired applications.

Drivers of intelligent infrastructure development are plentiful, MacDonald said. These drivers include user-defined information services, business innovation, virtual departments and teams, and success-driven spending. Ideally, content and processing would be available where users need them and the network would become part of the system, with content control belonging to users.

This type of infrastructure has important applications for the healthcare sector, MacDonald noted. For instance, it would allow for data distribution from multiple data sources on a variety of topics from across various sectors. Intelligent infrastructure allows users to self-subscribe and to control the data they access; at the same time, the infrastructure obeys defined security policies. In the end, this type of system allows users to get the information they need when they need it, MacDonald said.

From a public policy perspective, MacDonald expressed concern that many people think that technology development for intelligent infrastructure has been completed, but this is not the case. He urged participants to continue to focus on the technology development part of the equation without losing sight of the people dimension.

The education system has to work to ensure that students in all disciplines are given the skills and tools they need to become innovative in the workforce, he concluded.

## **Isabelle Courville**

### **President, Enterprise Market Division, Bell Canada**

In many respects, the technology that has been dreamed of for 20 years has arrived, said **Isabelle Courville**. She described a partnership between Bell Canada and some hospitals in Ontario that has resulted in real-time surgery being performed over the Internet, calling it a huge step in the evolution of technology.

While the technology seems to be everywhere, the investment in the infrastructure of the future is just beginning, Courville said. Technological progress is occurring rapidly. Today, 65 per cent of Bell's large customers use some Internet protocol (IP) and 24 per cent use VoIP.

While IP can provide a simple solution for all levels of business, it is but the beginning of a long journey, she said. Challenges to be faced along the way include the need to provide a reliable and secure network, and the need for continued investment.

Within the IP world, dialogue with all levels of government tends to focus on the applications of the technology being developed, for example, community portals, integrated access, e-learning and e-democracy.

Some innovative uses of the new technologies are being made in the healthcare and education sectors. Many hospitals now use wireless technology and many educational institutions use IP-based telephony and video-conferencing.

However, while the technologies are available, it is important to foster a sense of urgency throughout the country about the need to determine how best to move forward and how to close Canada's productivity gap, Courville said. Another need is to bridge the needs of business and the technology itself.

Numerous studies have looked at the potential productivity improvements that can be realized by businesses through the adoption of new technology, with findings in the range of 10 to 40 per cent. Bell predicts a 25 per cent improvement in productivity from the adoption of voice-over applications.

The government can play many roles in advancing infrastructure development. Government at all levels can set the example by adopting new technologies, to encourage and stimulate the broader adoption of new technologies throughout the various sectors in Canada. Government can also facilitate the development of new technologies by pushing the technology agenda and encouraging public and private investment in new technology development.

The technology is ready to be rolled out across the country, Courville concluded, and Canada needs to tackle and leverage the technology quickly—if not, it will be left behind on the global front.

### **Louis Audet**

**President and CEO, Cogeco Inc.**

The development of infrastructure for the e-economy is unfolding in Canada, with investment in terms of both money and brains, said **Louis Audet**.

Cable Internet was conceived and implemented into the network long before consumers dreamed that they could have it, Audet said. In Canada, private enterprises have created one of the best infrastructures in the world, and individuals continue to invest and build on that development. In this context, the role of government is to create a favourable environment that will allow this investment and development to continue.

In 2001, the National Broadband Taskforce advocated a number of measures to ensure broadband access for small, remote markets as well as for individuals with lower socio-economic means. However, for the most part, the taskforce recommendations were ignored. Audet suggested that these recommendations could form the basis for policy discussion at this conference.

Taskforce recommendations included the following:

- Provide fiscal incentives for small software entrepreneur development to help stimulate innovation and productivity.
- Invest in the development of infrastructure—the industry has outgrown the Canadian market's capacity for financing.
- Liberalize Canada's foreign ownership rules—remove the cultural/nation-building arguments from the discussion.
- Reward stakeholders for taking risk.
- Resist the temptation to mandate access to networks, which does not work for a young network.

Audet put forward a number of recommendations on the federal government's role:

- Bring harmony among the provinces to eliminate all forms of capital taxes.
- Enable through legislation access to rights of ways, conduits and poles, which will require a change to the *Telecommunications Act*.
- Enact a law to protect against signal piracy.
- Address third-language services.

In order to meet the demands of this age of governance, accountability and scrutiny, the CRTC's role should be strengthened, and it should be made more accountable, Audet said. The CRTC has a vital role to play in preventing legitimate companies from being crushed in the marketplace, he added.

Any regulatory body must be expert and independent and must have high governance standards. In addition, any decisions made by this body must be based on transparent, tested, evidence and there must be a redress system in place.

Such changes would make it possible for an industry eager to provide infrastructure for the e-economy. “Canadian entrepreneurs and academics are up to the challenge, we need the government to support our efforts,” Audet concluded.

### **David Mitchell**

**Professor and Associate Dean (Research and Graduate Programs),  
University of Calgary**

**David Mitchell** opened his remarks by noting the important work done by the National Broadband Taskforce, calling its report and recommendations the touchstone for any discussions.

The broadband vision originally put forward by the taskforce, which was envisioned as being operational across Canada by 2004, is being realized today in Alberta, Mitchell said. In Alberta, 95 per cent of communities (422 communities) are connected. Things can happen quickly in a province that is not troubled by debt, cash flow problems and political opposition, he remarked. The implementation of this broadband access will improve the quality of social services being provided across the province, particularly to those living in traditionally under-serviced communities.

Broadband is a transformative technology of the sort that is seen only once every few centuries, Mitchell said. When such technologies come into use, they transform processes, politics, religion and all other aspects of life. In fact, the world is only beginning to see the value and potential uses of this technology, Mitchell suggested.

From an academic point of view, Mitchell said he is often asked about the value of researching something before it comes into being. Research of the type being carried out around broadband and its transformative potential is something that researchers rarely get a chance to conduct. In effect, the research being carried out today is able to gauge what people think about a radical technology and its uses before it is fully implemented, he noted.

Mitchell said researchers in Alberta began their work knowing that they did not have specific questions. The research team began by going into communities to get a sense of what community members felt the new technology might mean to them. The researchers found that once they were in the communities they very quickly stopped talking about the technology and began focusing on the communities themselves. They found that community members were attached to their communities but were concerned by their declining populations and sought ways to get people to stay and to attract new people.

Mitchell identified some issues with the Alberta broadband model. First, the model only extends services within the municipal boundaries — a problem since in reality, the

economy can often take place beyond municipal boundaries. Another issue is how to best provide services to towns that only have a subsistence economy—this issue is particularly prevalent among Aboriginal communities. In order for a broadband model to be truly effective, the technological component has to be matched by an infrastructure component that ensures that the educational, social service and business aspects are all in place in a community. There may be a need to find subsidized opportunities to extend services. The whole economy has to be accounted for, not just the wires themselves, Mitchell said.

There is a lot of excitement within the communities about the possibilities inherent in the technology, with video-related and real-time applications generating a lot of excitement.

## **Discussion**

A participant asked the panellists to comment on the possibilities for technology to transform the way that people learn and conduct research, particularly in terms of Internet services and their ability to link people and develop communities of learners.

It is impossible to predict the outcomes of letting communities of interest evolve and grow, said John MacDonald.

Isabelle Courville noted that the young generation is very comfortable with new technology, and that as the technology is made available to the next generation, they will continue to develop new applications.

Louis Audet said the cable industry is always looking for the next step and is working to ensure that they do not constrain the industry's future ability to grow.

One problem is the lack of willingness on the part of some researchers to embrace technologies available to them, said David Mitchell. These researchers do not have a basic understanding of how using the technologies will enhance their work. Leaders within the academic community need to show their colleagues the tools that now exist and encourage them to use them.

A participant noted the tendency for large companies to come in and take over small communities and encouraged industries that are looking to expand into small communities to work with the local chambers of commerce.

MacDonald noted that the most value in terms of intelligent infrastructure would be realized in remote areas. Industries need to look at all the different models, from franchises to fixed wireless networks, which could be applied to best meet the needs of different communities.

Models that work do exist, Courville said, with success found in shared managing and deploying by the community and the private sector. Government also has to play an active role. A model that does not work is when everyone strives to become a telecommunications carrier.

It is important to get a cross-section of community members involved in the dialogue on technology and in setting the agenda, Mitchell said. In Alberta, researchers worked in the communities for six to eight months to derive their research questions. They then brought community members together for a small symposium to generate dialogue around the questions, and widen the dialogue.

Responding to a question about the types of graduates that would best fuel the new economy, MacDonald said it is important not to be prescriptive about the types of programs people should take. Rather, it is important to “recognize the underlying value of smart people.”

## **Lunch Keynote: A Catalyst for Innovation and Economic Growth**

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### **Todd Ramsay**

**General Manager, Global Government Industry, IBM**

**Todd Ramsey** explained that “On Demand Government — A Catalyst for Innovation and Economic Growth” is a framework for understanding where Canada and the rest of the world are now and where Canada needs to go, inspired by lessons learned from IBM’s transformation as well as based on government observations. The essence of the framework is to provide a more compelling vision of the future, focusing on the destination and the means to get there rather than on the problems and how to solve them.

Government is facing an increasingly challenging environment primarily due to problems related to budget constraints, security, the aging population and economic development, Ramsey stated. These challenges can only get worse. People do not want to pay more taxes, yet expenses are rising for security, pensions, support programs, etc. Following September 11, 2001, police worldwide are collaborating much more and sharing information; however, citizen concerns about privacy are mounting. Moreover, the world population is at once growing and aging, making our current models of government and programs unsustainable. In addition, countries that depend on manufacturing are more and more faced with other nations that can provide cheaper labour.

The only way to manage these problems over time is to be competitive in the world market, Ramsey said. Private industry and higher education must be strong advocates at moving government ahead, and government must move from a regulating, controlling and protecting mode to one of fostering, facilitating and being the catalyst for innovation and growth. Society is ready to adapt, and government, as well as corporations, must take advantage of this opportunity.

Ramsay showed a diagram with a sequence of four “waves,” each one depicting government services at progressive levels of maturity. The first wave, named Online

Government, represents an emerging maturity of services. The second wave, Interactive Government, represents an evolving maturity. The third wave, Integrated Government, represents the government provision of integrated services to meet customer needs. The fourth wave, On Demand Government, represents the capacity to extend partnerships to business. On Demand Government makes available to business what business needs, whether it is cash, accounting or legal advice, etc., increasing business productivity and competitiveness in the marketplace. Ramsey described Canada as in Wave 2 moving toward Wave 3, similar to most other countries, and said ultimately, the way to solve issues is to arrive at Wave 4.

As an early innovator, Canada should not be complacent, and should have the confidence to move forward. Ramsey recommended that Canada measure its progress not only based on the number of services online, but also on the types of services online versus other channels. Utilization depends on need and ease of use, regardless of advertising. The key is to get online services used, and get return on investment. Otherwise, costs will only increase, since online services have to be maintained.

Ramsey described three dimensions of transformation and specific areas for change. All infrastructure projects need a blend of process change and infrastructure change, he emphasized. Moreover, to achieve Waves 3 and 4, the people aspect requires important attention. In an On Demand Government, the three dimensions of business processes, technology infrastructure and culture change all coordinate, collaborate and connect together.

The key is to start with customer needs and then work backwards, Ramsey said. Determine the processes, human resources and infrastructure supports needed, then develop the plan to connect these elements internally. Too often the opposite is done, but this strategy will save money early on and leave money for the later steps, he said. It may be slower but can be done with tight budget constraints, while focusing on future stakes and providing a series of steps that make useful sense.

Ramsey then presented several examples of success using this model. First was IBM's transformation over the last decade to centralize IT, finance, human resources and procurement, moving from process and infrastructure transformation to value chain optimization and on to the On Demand enablement of Wave 4. IBM has realized tremendous cost savings and improvements to client responsiveness, and is now expanding on Wave 4.

Other examples included SME start-up support and development in New York State; social service program integration in Manitoba; community building as the catalyst for improving infrastructure and engaging customers and broader markets in Cornwall, Ontario; multi-channel and customer-focused driver and vehicle licensing services in the U.K.; and cross-government integration and associated public reporting of progress within the U.S. government.

There have also been some Canadian initiatives to transform services in Canada. The Government of Canada Marketplace Project will put in place an electronic purchasing service for government, and the Virtual Trade Commissioner program will enable small businesses to have better access to foreign market information.

In moving forward with transformation, Ramsey listed some critical success factors. They include a proactive senior leadership; a customer-centric design that focuses on one sector or issue at a time and has Canadians working together on the challenges; an effective governance model; publicly visible performance metrics linked to the budget; and strong buy-in from business, education and the community to collaborate as one voice and articulate society's desires and priorities to government.

Ramsey then named some key elements for an On-Demand Government: having a vision around a specific customer; considering organization culture, business processes and technology infrastructure; developing a transformation roadmap; and operating and extending over time. The speed of transformation will depend on budget constraints, with the process a feedback loop that continuously demonstrates competency.

In conclusion, Ramsey suggested some helpful resources, such as the IBM Institute for Electronic Government; the Center for the Business of Government; and strategic collaboration with different schools, institutions and councils. Canada has both the willingness to make changes and take risks and the financing, motivation and history of success to move forward, he said. With a compelling vision, Canadians can come tighter as a team to articulate and implement that vision and set a standard for the rest of the world.

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## **Promoting the Trust Agenda: Privacy and Security**

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### **John Gustavson**

**President and CEO, Canadian Marketing Association  
Panel Moderator**

Security and trust are the fundamental building blocks for marketers in Canada. They are issues taken seriously by the Canadian Marketing Association (CMA), said **John Gustavson**. In 1995, the CMA was the first major business association to call on the government to pass privacy legislation. Ethical businesses have to play a leadership role, he said. For example, the Canadian Marketing Association has passed regulations that limit how its members can market to children and teens.

No matter how wonderful the ideas are, eventually the technologies have to be translated by Canadian businesses into a way of doing business on a daily basis. This can prove particularly difficult for small and medium-sized enterprises, Gustavson noted.

## **Jennifer Stoddart**

### **Privacy Commissioner, Government of Canada**

Industry Canada is a major player in trying to solve the privacy challenges that face Canadians, stated **Jennifer Stoddart**. There are a number challenges regarding privacy in Canada today, including the need to criminalize assaults on privacy, such as identity theft and spam, areas that now involved international crime rings. Another challenge is the continuing mistrust by many Canadians about how government and businesses handle their personal information. Finally, perhaps the most important challenge regarding privacy in Canada today, many members of the business community and many government officials see privacy and the protection of personal information as an obstacle to doing business rather than as a necessary ingredient.

The *Personal Information Protection and Electronic Documents Act* (PIPEDA) is interesting from many perspectives, including how it was developed. To form the act, different privacy rules were codified, with the code then attached to a law. This is a different way of drafting legislation, Stoddart said. PIPEDA deserves careful examination because it provides tremendous flexibility and its privacy principles can be applied in many different contexts.

Businesses should adopt privacy principles as part of their business ethos, she said. The Office of the Privacy Commissioner can help with this process and can be a valuable resource for educating clients and employees.

Currently, the legislation is being examined to determine whether it will be an effective tool to combat spam, or whether special legislation is required. The Office of the Privacy Commissioner is working with international partners on this initiative. Stoddart encouraged participants to forward any proposals for legislation or models that would help Canadian businesses integrate privacy into their day-to-day practices.

## **Michael Geist**

### **Canada Research Chair, Internet and e-Commerce Law, University of Ottawa**

**Michael Geist** said he was encouraged that so many speakers had mentioned the need to “get the education piece right.” On the other hand, he said he was discouraged that a Canadian Heritage committee has put forward a proposal that would see educational institutions having to pay licensing fees for services that they are currently able to access for free. It is important that people who provide broadband services join the educational community in speaking out against this proposal, he said.

Many speakers have referred to how the Internet can remove barriers to research. While this is true, Geist urged the Canadian government not to follow the recent example of the U.S., which has made several moves to create barriers on the Internet.

If the Internet is to be truly valuable, the best content has to be available on the networks and it has to be available to the broadest number of people, he asserted. It is essential to think creatively about how to best ensure access to the greatest number of Canadians.

Canada needs smart regulations, Geist said. Spam has created a significant problem on the Internet because people are no longer able to rely on the system as much as they did even one year ago. Canada needs action on the technology, education and legal (both legislation and enforcement) fronts to combat this problem. Geist told participants that in the coming days Amazon and Microsoft would be joining forces to bring action against Canadian-based spammers. This action currently requires the use of U.S. law.

Policies need to focus on people, values and smart regulations. It is essential that Canada ensure that research can be disseminated, that there is trust in the networks and that “the other IP,” intellectual property, is protected, he concluded.

### **Michael Coady**

**Vice President, Security Practice, Computer Associates International**

**Michael Coady** has spent much of his career dealing with the forensic side of technology, particularly hacking. He reported that he is now also seeing physical losses (i.e., office break-ins, theft) that lead to identity theft and fraud. Last year, 33 of his 112 cases went to court.

The biggest issue is the segregation of privacy and security, Coady said. He suggested that the development of a total compliance framework would be one step towards solving the problem. Computer Associates International provides businesses with the tools they need to look at the issue from a compliance perspective. A fundamental question is how businesses report information up the line.

In the U.K., criminals are now targeting home-use Internet service providers. Recently 23 home computers were linked without their owners’ knowledge to form a “super server” from which the criminals could ship spam across the globe. This is a new kind of threat, he said.

Affordable network forensic tools exist to protect businesses and individuals. Coady urged participants not to forget to protect their home computers. “Anti-virus tools are not enough today,” he concluded. “The ‘black hats’ are getting very effective in how they do what they do.”

### **Discussion**

John Gustavson asked the panel about the practicality of repealing the personal information protection part of PIPEDA and replacing it with legislation that is more straightforward.

Jennifer Stoddart encouraged participants to explore all possible solutions. It might be necessary to strengthen the principles behind the act and to make it more flexible. If the best way of achieving that end is to develop new legislation, that should not be ignored, she said. The end goal is to make the legislation easy to understand and appropriate to the times.

Michael Geist added that it might also be effective to “up the ante” in terms of enforcement of the legislation. Responding to a question about defamation on the Internet, Geist said the same Canadian defamation laws apply online as they do offline. One challenge of online defamation, however, is jurisdiction, which raises complex questions. Another issue is finding the person behind the defamatory statements.

Michael Coady described a case in the U.S. where a company CEO was defamed in an Internet chatroom. The courts issued a subpoena to Yahoo to find out who was in the chatroom at the time the statements were made. Under new U.S. law, businesses are required to turn over that type of information within 30 to 60 days.

A participant asked about how business can help privacy practitioners get in tune with business needs related to emerging technologies, and establish a better balance between the rights of the individual and business. Stoddart acknowledged that many new technologies are viewed as being invasive in terms of what has traditionally been conceived as private space. Perhaps it is time to redraw the traditional definition of what privacy is, she said. Court decisions — such as a recent one pertaining to video surveillance — can be used to find solutions that serve both business and the individual.

Coady responded to a question about monitoring employee online behaviour, stating that while the technology exists, it is up to the specific business to determine how technology should best be used within its existing corporate culture. Some businesses have this type of monitoring software on all of the time, while others only turn it on periodically or when they suspect that there has been a security breach. It is up to the company to determine how best to balance the need to maintain the rights of the individual against the potential loss.

Geist said that a report has suggested that Canadians are moving from a reasonable expectation of privacy to a reasonable expectation of surveillance. It is important for companies to exhaust less invasive measures before they turn to those that invade the privacy of all employees, he said. A spectrum of answers is available depending on the issue that the company is trying to solve.

The enforcement aspect of the policy is a big and unanswered question, Stoddart said. Her office is working to develop a reasonable enforcement policy and is going to revise its audit function.

A participant suggested a possible enforcement model by referring to the growing market of short codes used in messaging systems. Short codes are sold to a company only after

they certify that they will never use the incoming traffic as a source for unsolicited mail. If a company is found to have violated the agreement, the short codes are revoked.

While that is an excellent program, there is no one “silver bullet,” no one solution will solve all of the problems that exist, Geist said.

PIPEDA is the right way to go and is recognized by the international community, a participant declared. She questioned why anyone would even contemplate repealing it. Canada is typically not quick to run to new legislation, she said.

Another participant raised the issue of the government conscripting business to help in the effort to stop crime and terror. She questioned where the line should be drawn, and what policies businesses should be adopting to permit them to act as agents of the state. Gustavson responded that businesses can help government without receiving a prior request.

This has been a familiar problem over the last four years, Stoddart said. Government has been repeatedly asked to demonstrate to the Canadian public why reforms are necessary and how they will make Canadians safer without fundamentally damaging the fabric of Canada’s democratic society. These questions are often received with a “deafening silence” or the explanation that “more is necessarily better,” she said, while adding that she does not find this argument convincing. She said she will continue to raise such questions, particularly when the anti-terrorism law comes up for review.

Stoddart advised corporations to think about these issues carefully and to use their discretion in this area, because while the information they provide could be used for the common good, it could also be used to discriminate. “Corporations have great power and should try to use it wisely.”

Geist noted that this question is similar to the one about defamation. There is an appropriate role for intermediaries to play when they are asked to enforce laws. However, he emphasized the need for effective oversight and urged companies not to act without a court order.

Coady also urged the government to ensure that it adequately protects the personal information that it stores.

## **Setting the New Agenda**

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### **Hon. Perrin Beatty**

**President and CEO, Canadian Manufacturers and Exporters**

**Panel Moderator**

The last day and a half has been an opportunity to take stock of what has been accomplished in the past decade, stated the **Hon. Perrin Beatty** — to see where Canada stands today, in which areas Canada is in a position of leadership and where there is more to do. Eleven years ago Canada's commitment to the Information Highway was announced at a conference in Vancouver, and people did not really know whether it was a good idea or whether there was in fact any interest in proceeding in this direction. Nothing was known about the Internet, the World Wide Web or the issues discussed over the last day and a half.

The job of the day's panel would be to look ahead, to determine what the agenda should be and what challenges can be expected. "Where do we go from here, and what can each of do?" he asked. The speed of change is breathtaking and the challenges are great, he noted.

### **Arthur Carty**

**National Science Advisor to the Prime Minister,  
Council of Science and Technology Advisors (CSTA)**

Some 35 years ago when two computers were first linked at UCLA, there was no thought about privacy and security, said **Arthur Carty**. In fact, even the inventors of today's Internet view it as a work in progress.

The Internet has transformed the economy and our entire way of life, Carty said. By its very nature, the Internet is a moving target; a target that very few Canadian businesses have been able to hit. Canadian SMEs are not as e-ready as their American counterparts. He maintained that three-quarters of Canadian communities do not have access to broadband, leaving Canada in a productivity and innovation gap compared to its nearest neighbours.

The Canadian ICT sector employs half a million educated knowledge workers, Carty stated. The sector is also responsible for 11 per cent of the economic growth in Canada since 1997, as well as for 45 per cent of all business investment in research and development. ICT is important to every sector of the economy.

In order to succeed on the ICT front, Canada needs to foster an environment that supports risk. Canadians also need to trust that their systems are secure. These two factors would inspire the climate of risk-taking that is necessary for Canada to move forward, Carty said, adding that all partners have to be involved in this process.

Several elements are key to Canada's success in this endeavour:

- Development of better infrastructure, including tools, e-business training and best practices
- Recognition of the need for internationalization and of the Internet as a great equalizer
- Nurturing of human capital
- Development of innovative, flexible partnerships between government, academia and private industry

"Canada must evolve as quickly as the Internet is evolving and we all have to recognize that there is a need to continually renew ourselves," said Carty.

### **Lorna Marsden**

**President and Vice-Chancellor, York University**

An important issue is how best to involve more small and medium-sized enterprises in ICT and to ensure the development of more partnerships between SMEs and post-secondary institutions, stated **Lorna Marsden**.

She described several known characteristics about the environment in Canada. First, most Canadian undergraduates end up working in a business environment, the majority of which are small and medium-sized enterprises. In addition, Canadians are different from their neighbours. Security and privacy concerns are uppermost in their minds. Finally, as a nation, Canadians are slow to change. With these facts in mind, it is vital that industry engages e-talent wherever it lies, from kindergarten to retirement.

At York University, the majority of students use the Internet in a highly transactional manner; they do everything from register for their courses to take part in alumni networks. The challenge is to shift that knowledge towards innovation and commercialization as the students move into the workforce.

### **Charles Sirois**

**President and CEO, Telesystem Ltd.**

**Charles Sirois** said he had not heard enough about entrepreneurship at the conference — the discussion "has focused on the paint, not on the painters." His talk focused on the role of entrepreneurs, how best to foster them and how to help them play a role in the development of Canada's e-economy.

The world is undergoing a major shift in mindset — it is moving from a world that people own to one that they share; from corporations to associations; from competition to co-operation; and from goods to knowledge. To foster entrepreneurship in this kind of culture, there is a need to create an environment that will allow entrepreneurs to learn, evolve and transfer their knowledge. If Canada can develop this kind of culture, it will flourish, Sirois said.

Sirois described Enablis, a system used in developing countries to help and mentor entrepreneurs in the areas of ICT. The system involves an accreditation process for entrepreneurs. Once accredited, they sign a charter and are matched with a success manager. They gain access to the Enablis network and the Enablis bank, which offers a better interest rate. This type of model might work to foster entrepreneurship in developed countries.

## **Discussion**

A participant sought to inject a sense of urgency into the discussion. The pace of change is faster today and the skills content of tradable services is high. Canada cannot afford not to be a leader, he said. The next step in this process should be to get the public and private sectors together for a roundtable.

Charles Sirois expressed caution and concern regarding formulating a national strategy. “What happens if we are putting our efforts into the wrong place?” This is particularly problematic in the world of e-commerce, which is itself a moving target, he said.

Another participant said that Canada must also be aware of the work being done in this area in other countries. It is important to position Canada’s work within the broader context of what other countries are doing.

A participant questioned how best to put this issue on the national political agenda. Sirois stressed the need to reinforce with politicians the fact that ICT is an enabler in all sectors of the economy, not just in industry. It will be important to get every sector on board and get them to engage in discussion with government.

There is a belief in government circles that technology will help the healthcare system, and consumers share that belief, another participant said. The time is ripe for industry to galvanize around this issue.

There is a belief that e-business can mobilize any sector, concurred Lorna Marsden. It is now time to move forward with that mobilization; however, the question becomes one of resources.

A participant asked what Canada’s e-economy would look like in 10 years. Sirois replied that to be successful, Canada will have to build a successful breed of entrepreneurs. People, not by corporations, will build wealth he said. “Canada will have to win the e-economy challenge if it wants to remain one of the best places in the world to live.”

Carty stated that 10 years from now Canadians will still be concerned about healthcare, but the e-economy will be more pervasive.

Marsden said that 10 years from now, Canada will not know if it has narrowed the productivity gap if it has not developed metrics to better measure that gap. The first step

is to create sophisticated indices of who we are, what we do and where we have to go, she said.

## **The Way Ahead**

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### **Nancy Hughes Anthony**

**President and CEO, Canadian Chamber of Commerce**

**Nancy Hughes Anthony**, in her role as conference co-chair, asked participants to review the draft policy agenda and provide feedback via the conference website. This document can provide the starting point necessary to develop a comprehensive strategy; however, the next piece will be to determine the proper mechanisms and vehicles to move the strategy forward. “We have to move forward an agenda that involves government, academics, entrepreneurs and industry,” she concluded.

She thanked participants and organizers alike for making the conference a success.

## **Appendix: Acronyms**

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BIAC	Business and Industry Advisory Committee to the OECD
CEO	Chief Executive Officer
CMA	Canadian Marketing Association
CRTC	Canadian Radio-television and Telecommunications Commission
CSTA	Council of Science and Technology Advisors
GDP	gross domestic product
HEC	Hautes Études Commerciales (HEC),
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	information and communications technology
IDRC	International Development Research Centre
IP	Internet protocol
ISD	integrated service delivery
ISPs	Internet service providers
IT	Information technology
ITS	Information Technology Services
OECD	Organisation for Economic Co-operation and Development
P.C	Privy Council
PIPEDA	Personal Information Protection and Electronic Documents Act
RFID	Radio Frequency Identification
SIIT	Spectrum, Information and Telecommunications Technology
SME	small and medium-sized businesses
VoIP	voice-over-Internet protocol
WiFi	Wireless Fidelity
WTO	World Trade Organization