

**Submission on a Digital Economy Strategy for  
Canada:**

**Capitalizing on the Digital Economy**

July 13, 2010

## Executive Summary – Capitalizing on the Digital Economy

With the right plan, Canada can play a leading role in the global digital economy. By building on our strengths and working together with the federal and provincial governments, Canadian businesses will be in the right position to realize the benefits of digital technologies and achieve a competitive advantage internationally.

The Canadian Chamber of Commerce welcomed the federal government's announcement in Budget 2010 that a Digital Economy Strategy will be developed and implemented. With the introduction of Bill C-32, the *Copyright Modernization Act*, the government has taken the first step towards updating Canada's copyright laws to meet the needs of the digital age. The amendments in the bill strike an acceptable balance between various interests and if implemented in accordance with the objectives of the legislation, will provide a solid foundation for future economic growth and job creation in Canada.

The Canadian Chamber has played a leading role in advocating for this digital strategy by working with leading technology companies and producing policy papers that encourage a strong partnership between government and business to make this strategy work.

E-business is a key enabler of productivity growth, increasing profit and decreasing costs for Canadian firms. While most enterprises are aware that doing business electronically is a prerequisite for success in today's global economy, many businesses, especially small businesses, remain unaware of the value of e-business.

In 2009, the Canadian Chamber adopted a policy resolution entitled "*Ensuring Canada's Economic Success Using Information and Communications Technology*". This resolution highlighted the need for the government to establish a national information and communications technology strategy and encouraged the government to once again become a world leader in this field. It also provided policy recommendations that remain relevant and should be incorporated in a digital economy strategy.

It is widely accepted that productivity is directly linked to policies that encourage innovation and the adoption of technology. Countries like the United States, Britain, Australia and Denmark to name but a few are pouring resources into the digital economy and in some cases, creating federal ministries to oversee opportunities and challenges. Canada's productivity gap compared to the United States remains problematic. While the business community understands the government's current financial constraints, there are pioneering ways to work together to advance the digital economy strategy.

### Recommendations

That the federal government:

1. Under the leadership of the Minister of Industry, lead the implementation of the Digital Economy Strategy across government and make adoption of information and communications technology (ICT) a government-wide priority.
2. Re-allocate resources toward investments in ICT and ICT-related programs.
3. Work with the Canadian Chamber of Commerce to develop a pilot project to assist small and medium sized businesses (SMEs) across the country with implementation strategies for ICT.

4. Introduce tax incentives for SMEs to adopt e-business solutions
5. Create an environment that better protects intellectual property rights.

## **1. Implement the Digital Economy Strategy across the government and make adoption of information and communications technology a priority**

By acknowledging that Canada needs a comprehensive strategy to tackle the digital world and get more businesses engaged, the Canadian Chamber of Commerce believes that the government is on the right track.

There are several areas of the strategy which require cross-government or government-to-government action.

### Government's role as model user:

The information and communications (ICT) sector is a fundamental ingredient in the building of tomorrow's economy. The role of government in fostering a digital economy starts with its own actions, and extends to the policies and programs affecting industry and other stakeholders. Government can play a catalytic role in ICT adoption as a model user and rural anchor tenant. As the largest ICT purchaser in the country, government must do more to demonstrate the benefits of adoption and integration of ICTs. It can lead by expanding the roll-out of e-government services and modifying its procurement practices to implement innovative ICT solutions and to take a government-wide approach to ICT projects, relying on commercial standards rather than government-specific standards.

### Investing in skills and talent:

Today, the successful deployment of ICT in any country is inextricably linked to the productivity of the country's workers and the strength and resilience of its economy.

But in order to realize these economic benefits, a comprehensive national ICT strategy requires more than capital investment in software and hardware. The innovative employment of ICT requires visionary leaders and skilled end users. In short, people must be at the centre of any national ICT solution. Canada's ICT strategy requires comprehensive support programs and policies that will provide a sufficient supply of technologically literate workers and citizens to keep Canada's economy globally competitive.

### The knowledge to participate

The ability to effectively use ICT has emerged as a form of literacy that is as critical to worker productivity as reading or math. Canada's education system should raise the priority of workforce development in ICT at all levels. For example, ICT fundamentals should be integrated into all areas of education, from elementary through high school, community colleges and universities, to new immigrant learning programs (using ICT as an economic literacy tool) and for workers who are facing new challenges due to economic uncertainty.

The Canadian Chamber would also like to draw attention to and support the Media Awareness Network's recent submission on the Digital Economy Strategy which stresses that widespread digital literacy is required to truly develop and maintain skills that people need to succeed. This digital literacy strategy would start at the kindergarten level through to the business world. Many universities now provide laptops with paid tuition. But why, for example, do grade schools only have one computer per classroom, if they are lucky? This learning gap should be closed immediately.

### Investing in soft infrastructure

Canada's national ICT strategy will necessarily include public and private investment in technology products including broadband and wireless networks as well as computer hardware and software. It is critical to complement this "hard" infrastructure with a broad-based set of policies and programs.

For example, the Competition Policy Review Panel noted that in the knowledge economy "intellectual property frameworks play a central role in rewarding and encouraging innovation by granting creators the rights that enable them to monetize the products of their innovation." The Panel also found that modernizing our IP framework in the online environment was especially critical because of the ever-increasing importance of the economic activity associated with the digital economy. As such, the Panel concluded that it was urgent that Canada's patent and copyright frameworks be updated in the "Internet Age" so that we "develop strong IP capacity and demonstrate to the world how competition and productivity can be furthered by a modern IP regime."

Well-funded educational institutions are critical to integrate people and technology. Additionally, taxation and regulatory policies should support the implementation of ICT in existing businesses, and help people build new ones around it. This should also include a more robust intellectual property rights framework to stimulate ICT investment and to enhance Canada's competitiveness and productivity. Having a more connected nation is essential because in a global labour market, quality of life is critical to retaining skilled workers.

### A culture of excellence

Enrolment in science, technology, engineering, and mathematics programs are declining while employment opportunities in these fields continue to grow. The choice to pursue a program of post-secondary education related to ICT would seem like a practical one, but it is a choice that Canadian students are making less frequently. The role that our culture plays in these choices should not be underestimated.

Across Canada, we should encourage youth to career paths that will lead to greater economic prosperity for all of us. We need to instill the excitement of discovery and invention in today's youth, by celebrating entrepreneurship in all its forms, and sharing the real-life success stories of Canada's technology innovators. This could be attained by:

- Business visitation, innovator lectures and tours for teachers,
- Hands-on exploration of ICT,
- Integration of information of ICT industry trends,
- Connecting curriculum to required ICT skill sets,
- Encouraging students to explore ICT career opportunities, and
- Connecting classroom learning to ICT-related programs and career opportunities

It is important that the federal government continue to promote a culture of excellence in Canada and take an active role in encouraging youth to get engaged in ICT and entrepreneurship in innovative technologies.

Given the need for the Government of Canada to move quickly and effectively in developing its Digital Economy Strategy, the Canadian Chamber recommends that a task force comprised of a cross-section of industry experts be constituted to assist and advise the government on an implementation plan for the strategy.

## 2. Re-allocate resources towards investment in ICT and ICT-related programs

### ICT infrastructure:

Canadians are justifiably proud of our prosperity and quality of life. We must also aim to improve our environmental stewardship, including the consumption of resources like water and energy, improve our health care system for better patient outcomes, enhance the way our cities function, and provide integrated government services to improve the lives of every citizen. These are admirable goals; ones that all Canadians can support. Achieving them will take much effort, but they are reachable.

In each case, ICT will play a valuable role. As mentioned above, the application of ICT to our electricity grid can substantially help improve our environmental stewardship through energy efficiency, while also being the catalyst for the creation of new industries and jobs. ICT can similarly improve our health care system, the functioning of our cities and government service delivery.

The application of ICT to help achieve Canada's social and economic objectives is, of course, predicated on having a comprehensive and inclusive strategy for ICT infrastructure. Applications such as remote diagnosis, smart appliances and intelligent traffic systems, for example, all rely on the availability of broadband; the underpinning of 21<sup>st</sup> century infrastructure. They also rely on the intelligent use and management of information. We believe that a vision for Canada's digital infrastructure needs to include the ability to gather data on our most critical systems – natural and man-made, interconnect these systems and the ability to make sense of information through intelligent tools such as analytics, information management systems, etc. A digital infrastructure strategy should rally the collective strengths of the ICT industry and position Canada to be a global leader in the development, deployment and export of intelligent systems.

Canada's communications infrastructure is world-class. The significant Canadian achievement in broadband network deployment is a result of private sector investment and features the latest and most robust network technologies such as 3G+ wireless, DOCSIS 3.0, Fibre to the Node (FTTN), etc. Billions of dollars have been invested and billions more will need to be invested. Only the private sector is capable of making the ongoing investment needed to enhance networks and be responsive to the needs of Canadian consumers and businesses.

Government's role is to create the right investment climate for network providers. The policy focus on facilities-based competition has fostered a unique and sustainable competitive environment (with the U.S. as the only realistic comparator). This approach will continue to produce superior results over the long run as platform-based competition demands investment and investment drives economic growth. Next Generation Network unbundling and other interventionist and non-market-based policies detract from productive and desirable investment as they remove investment incentives for all competitors. Regulated wholesale rates will provide incumbents with lower overall returns on investment and entrants will divert funds from capital to operating expenditures. The inevitable consequence of these policies would be lower overall investment in broadband networks.

Government needs to eliminate the regulatory and policy deterrents to investment by ensuring no mandatory wholesale access to next generation networks as this is a disincentive to investing and creates regulatory distortions in the marketplace. It should also reduce spectrum auction fees

where billions of dollars are invested by ICT service providers to secure wireless spectrum but the funds raised by government do nothing to directly contribute to the digital economy. Additionally, the government should launch a review toward eliminating or reducing the \$1 billion in annual regulatory fees and levies paid by communications service providers – government-mandated and regulatory fees including broadcast distribution undertaking fees, local contribution subsidy payments, Part I and II broadcasting fees, telecommunications fees, and wireless spectrum licence fees.

Given the need to rely on the private sector, the government's focus should be on ensuring appropriate incentives to promote ongoing investments. If the government wants the private sector to accelerate its investments in next-generation networks, it should amend tax policies to stimulate investments on a geographically- and technologically-neutral basis.

Investments in infrastructure would provide a return on investment well into the future by improving the overall productivity of the economy. Many countries have seized the opportunity to include significant cornerstone investments in the infrastructure that will underpin tomorrow's economy: digital infrastructure.

### The Smart Grid

If we take a closer look at the traditional electricity grid, the technology that manages the transmission, distribution and delivery of electricity has not changed much over the decades. It did not need to, as electricity was cheap, plentiful and its generation and use was not connected to concerns about potential environmental impacts. This is no longer the case. Electricity supply struggles to keep up with surging demand and, in many cases, it is the source of supply that creates environmental challenges. At the same time, Canada faces the need to replace a significant amount of its aging electricity infrastructure. According to the International Energy Agency, Canada will need to invest in excess of \$185 billion by 2030 to replace and build new generation, transmission and distribution infrastructure.

This offers a significant opportunity to modernize the nation's electricity infrastructure by using ICT to build intelligence into our grid system. A "smart" grid would sense, collect and monitor grid data to optimize the management of the grid, provide real-time analysis and enable event prediction capabilities and mitigation strategies. This would drive a significant increase in energy efficiency, a lowering of peak demand, and is needed to enable the greater use of clean energy sources, accelerate the integration of renewable resources, enhance grid reliability and improve our environmental stewardship. Achieving a mere 5 percent improvement in grid efficiency would have the equivalent impact of eliminating the fuel and greenhouse gas emissions from four million cars. Many estimate actual grid inefficiency runs at approximately 40 percent (i.e., the electricity produced that never gets used).

Investing in smart grid infrastructure would also produce significant near-term job creation. The Information Technology and Innovation Foundation (ITIF), a U.S. think-tank, studied the employment impacts of investing in digital infrastructure. In the case of smart grids, the ITIF concluded that 23,000 jobs would be created in the U.S. for every US \$1 billion invested, the great majority of which are outside of the ICT sector. Similar investments in Canada would also result in significant job creation.

Over the long-term, the employment impact of such investment is even more attractive, as smart grid infrastructure represents the catalyst for the creation of a host of new, innovative industries and jobs. The smart grid will facilitate the widespread roll-out of commercial plug-in hybrid vehicles, smart appliances, smart homes and distributed electricity generation: the industries and

jobs of tomorrow's economy. Again, most of this employment would be created across industries outside the ICT sector.

### The critical role of spectrum

The world is also facing an impending spectrum capacity crunch arising from the explosive growth in mobile communications and the increasing use of smartphones and attendant bandwidth-intensive applications. Like the rest of the world, Canadians are enthusiastic consumers of wireless products and services, so Canada's wireless networks are not immune to the increased pressures on existing spectrum capacity. This is because spectrum is a finite resource and capacity demands are beginning to constrain available supply.

Wireless devices such as smartphones, wireless modems or remote sensors, and the data intensive applications they operate, place extreme demands on existing networks. The result for end users will be dropped calls, web pages that load slowly, and applications that are unable to deliver requisite data.

This situation must be addressed urgently in order to enable the continued development of mobile and other forms of wireless communications. The Canadian Chamber believes that the challenge of impending capacity constraints needs to be addressed in Canada on two levels: smarter hardware, software and services; and comprehensive and focused spectrum planning and allocation policies.

Thoughtful engineering can conserve network bandwidth and defer the capacity crunch. From a commercial perspective, it needs to be recognized that carrying data over a network has a fixed cost and that the cost of carrying data-rich applications must be considered to create sufficient incentives to make data applications and services more efficient.

The use of efficient, energy-conserving hardware and software technologies is crucial. Efficiency also provides for greater reliability in times of congestion, such as peak demand periods or moments of crisis, when other forms of communication cease to function.

The fundamental problem remains the scarcity of new spectrum being made available to support the unrestricted growth of mobile services. But even with greater engineering efficiencies, the industry will still remain dependent on governments to make more spectrum available in order to satisfy the growing consumer demand for rich mobile products and services. In relation to spectrum planning and allocation, we believe that this situation gives rise to the following policy imperatives:

- More spectrum must be made available for mass-market wireless telecommunications and at a reasonable cost. The Chamber notes, with concern, the dramatic imbalance between the level of spectrum fees paid by Canadian carriers and those paid by their U.S. counterparts, our closest and largest trading partner. Policy makers should closely assess market demands and trends and, where necessary, act pro-actively, and
- Spectrum planning policies must promote efficient use of spectrum. Interference management should strive for optimum precision, spectrum in popular bands must be utilized fully and, where necessary, re-allocation processes must allow for the expedited prior clearance of bands.

### The need to modernize export controls systems

Cryptography is the critical underpinning of the modern digital economy. It permits the safe and reliable transmission of financial and other critical data over the Internet, protects the integrity of information and communications systems, and has become an indispensable tool for protecting privacy and intellectual property. The importance of cryptography was recognized by the Government of Canada in its 1998 Cryptography Policy. Since then, encryption technology has become much more ubiquitous with many products, such as the BlackBerry and Smartphones.

To maintain that success in the face of global competition, it is imperative that Canadian exporters be on a level playing field as compared to their competitors from other countries and that they face a domestic export-control regime that is no more onerous than those faced by companies elsewhere, in accordance with Canada's stated policy. The Canadian Chamber, in conjunction with many Canadian technology companies, encourages the Canadian government to adhere to this stated policy and to review and update the current Canadian framework and licensing practices as necessary to keep Canada competitive. This is particularly urgent given the recent reforms announced by the U.S. government to their export-control regime for cryptography products and technology.

### **3. Develop pilot project to assist small and medium sized businesses with ICT implementation strategies**

Small businesses do not have the resources to always seize the best available applications in ICT. The government should work with small business to develop a pilot project to quickly and easily assist small- and medium-sized businesses to participate more readily.

In order to get a current picture of business views related to e-commerce and the use of information and communications technologies, the Canadian Chamber conducted a survey of its membership with the assistance of the local chamber network. The survey (conducted in 2009), was designed to provide a snapshot to determine what use Canadian business was making of the internet, if business-to-business transactions were taking place on a regular basis, and what online security measures were being employed by businesses.

A total of 953 businesses of all sizes responded to the survey. Of the businesses that replied, 66 percent of them employed between 1-10 people and 24 percent of respondents employed between 11-100 people. The vast majority of respondents were small businesses.

#### Survey results and analysis

96 percent of businesses that responded to the survey are using the internet for business purposes. When it comes to looking at how these Canadian businesses are using their websites, 73 percent accept online payments and 69 percent of businesses provided the ability for online ordering and tracking of goods. 87 percent provided product information on their websites.

When it comes to the adoption of e-business solutions for business-to-business online transactions, the results were mixed. A total of 42 percent of businesses surveyed stated that they did use an automated electronic data exchange system to send orders to suppliers, 51 percent are receiving and sending electronic invoices, 46 percent are able to receive orders from customers, 65 percent send or receive product information, 46 percent send payment instructions to financial institutions and 45 percent send and receive data to/from governments (such as tax information). This illustrates that more needs to be done to get business to use business-to-business e-commerce solutions to make their businesses more globally competitive. The key is to keep it simple; with the majority of businesses employing fewer than 10 people, they simply do not have the time to dedicate to implementing and monitoring complicated and costly e-business solutions.

Interestingly, 51 percent of all businesses surveyed indicated that they did not have a privacy policy statement on their websites. The Canadian Chamber has worked with the Office of the Privacy Commissioner to inform small businesses of their obligations with regard to customer information, but this high number indicates that greater effort is required, particularly with the smaller businesses.

On cyber security matters, 93 percent of businesses are employing anti-spam/anti-virus protections for their business and 82 percent update these protections at least once a month. 93 percent of businesses have firewalls for their online business and 89% perform a regular back-up of critical data. Interestingly, 19 percent responded that their business does not have a secure server, 42 percent do not back up information off-site and almost 25 percent of all businesses are not regularly updating their spam filters.

### Comments from small business

In addition to having 953 businesses complete the survey, the Canadian Chamber also received 181 specific comments from these companies that are looking to further their use of ICTs. Below is a sampling of some of the comments from Canadian companies on the issue of e-commerce and ICT adoption.

Specific comments from small business:

- “Almost all my sales are done through the internet. It has increased sales exponentially since starting up my website.”
- “Users need to be educated about all aspects of the technology they are using.”
- “Canada needs to embrace a national strategy of investment in infrastructure and productivity enhancement if we are to achieve any degree of competitiveness in the international marketplace; we can’t afford NOT to do so.”
- “We need to improve usage or we’ll lose out on opportunities.”
- “I have not adopted it on my website because the potential market is still so small.”
- “High speed access is too limited in rural areas.”
- “Difficult learning curve for small businesses. High set up costs.”
- “Having just started this venture, there are a lot of hoops to jump through.”
- “It can be expensive for a small business to afford all the protections available, but we do our best with what we can afford.”
- “Infrastructure across the rural west is a clear barrier to e-commerce.”
- “The government should do everything possible to help small businesses adopt technology. The biggest help would be to ensure people entering the workforce have adequate skills.”
- “We do not have a website but definitely use the computer for ordering and receiving invoices.”
- “By and large, Canada is way behind other countries. In order for us to catch up, we need a program from the federal government for training at all levels.”
- “Needs to be safe and secure.”
- “Our business is becoming more reliant on e-commerce solutions.”

#### **4. Introduce tax incentives for SMEs to adopt e-business solutions**

##### Building demand

Across the economy and as a major user of information technology, the government can play a large role by mandating online interactions for its partners, for citizens, and for suppliers. Like any large user, by undertaking a commitment to online commerce and the related technology, governments can defray costs for suppliers and provide a valuable incentive to adopt technology.

The government should design initiatives to drive demand and adoption among key user groups, such as small and medium enterprises. As the Competition Policy Review Panel noted in its June 2008 final report, the Internet is “a force for productivity growth because it promotes the more efficient use of business resources.”

The Canadian Chamber recommends that the federal government work with the private sector to accelerate e-business adoption among SMEs. The federal government should create a more favourable investment climate that encourages foreign and domestic investment in Canadian e-business opportunities, e-business transformation and the creation of new e-business ventures.

## 5. Create an environment that better protects intellectual property rights

The Canadian Chamber is concerned about the significant delays that have occurred in implementing remedial intellectual property rights legislation. However, the business community also realizes that governing with a minority does present challenges. Through 2010 and beyond, the Canadian Chamber, and its affiliate the Canadian Intellectual Property Council, looks forward to working with parliamentarians to improve our IP system. With Bill C-32, the *Copyright Modernization Act*, the government has taken the first step towards updating Canada's copyright laws. The objectives of the bill strike an acceptable balance between various interests and while there are areas where greater clarity is desirable, they provide a solid foundation for future economic growth and job creation in Canada.

While the theft and misappropriation of intellectual property (IP) can lack, for some, the same social stigma as other criminal offences, this illegal activity remains a significant drain on the economy, deceives the public and is harmful in many ways including through the loss of jobs, a reduction in tax revenues for governments and, last but not least, serious consumer health and safety risks due to the poor, inconsistent and often hazardous quality of fake products. Virtually no industry is immune from this illegal activity. In addition, the misuse of a rights holders intellectual property rights not only erodes the value of intellectual property but also discourages investment in innovation and creation. In the rapidly changing global economy that focuses on global trade and digitization, protecting intellectual property is critical to ensuring a competitive Canada.

The Canadian Chamber also looks forward to working with the government towards the conclusion of the Anti-Counterfeiting Trade Agreement that advances Canadian interests. Reform of our IP related statutes such as the *Copyright Act* and *Trade-marks Act*, as well as the IP related provisions of other statutes such as the *Criminal Code* is urgently needed so that rights holders and the authorities have the tools that they need to efficiently and effectively stop the flow of counterfeit goods and protect IP in Canada. Canada's IP environment must be brought to up the standard of our international trading partners. On a positive note, the government did take a step forward by allowing for the proceeds of copyright crimes to be confiscated.

### Recommendations to better protection intellectual property rights:

- Make counterfeiting and piracy a government wide priority and act on appropriate legislative reforms now.
- Provide resources for the necessary reforms and their implementation. This would enable authorities to search and seize suspected counterfeit goods at Canada's major ports and gateways.
- Strengthen existing statutes, such as the *Criminal Code*, *Copyright Act* and *Trade-marks Act*, either individually or through a dedicated anti-counterfeiting statute. Initiatives that should be taken in relation to this include:
  - Enacting the long anticipated amendments included in Bill C-32, the *Copyright Modernization Act*;
  - Amending the *Criminal Code* to properly define "counterfeiting" as a special criminal offence, thereby making it a criminal offence to manufacture, reproduce, distribute and/or import or offer for sale counterfeit products for commercial purposes,

- Amending the *Federal Court Act* to provide for expedited civil proceedings for cases involving counterfeit products and other IP infringement,
- Adding counterfeit goods to the proceeds of crime regime, making it possible for law enforcement officers to seize the illicit wealth of counterfeiters, similar to that of copyright crimes,
- Ratifying the two outstanding WIPO treaties that specifically deal with enforcement of intellectual property rights over the internet;
- Enacting amendments to the *Customs Act* to allow for search and seizure of counterfeit and pirated goods and provide customs and law enforcement agencies with the ability to share information with rights holders and licensees, and
- Creating a government task force or central resource to oversee the advancement of IP in Canada.

## Summary

Canada is a world leader in many areas: energy, natural resources and the financial services sector to name a few. While the availability of broadband internet across the country remains high, we have slipped internationally in ensuring that our digital infrastructure is world class and, as a result, we risk being able to attract and keep jobs in the knowledge-based economy. ICT infrastructure is now a 21<sup>st</sup> century pillar and must be treated as importantly as traditional infrastructure. As the world begins to focus more on the knowledge-based economy, we cannot afford to be left behind.

Canada should create a true national ICT strategy in collaboration with business and academia. The federal government should accelerate investment in next-generation networks and take an active role in encouraging youth to get engaged in ICT and entrepreneurship in innovative technologies. We are also recommending that the federal government continue to work with the private sector, to accelerate e-business adoption among SMEs and that the federal government create a favourable investment climate that encourages foreign and domestic investment in Canadian e-business opportunities.

Without proper investment and dedication to ICT, innovation and protecting intellectual property rights, Canada's productivity will be limited and other nations will continue to surpass us as a destination for both domestic and international business investment. Canada must take back its proper place as a world leader in innovation and invest in our future economic growth. The time to start is now.