



Fast Forward 4.0

Growing Canada's Digital Economy

May 2003



Canadian e-Business Initiative

Productivity, Leadership and Innovation for Canadian Business

PREFACE

When we were both asked, just over one year ago, to be the co-chairs of the *Canadian e-Business Initiative* (CeBI), we could not have foreseen how successful this initiative would be in just 12 months. In such a short period of time, we have brought together some of the brightest and most innovative people from the private sector, academia and government to create one of Canada's most impressive public-private partnerships.

CeBI was born of the need to continue advancing the application and adoption of internet-based solutions in business, particularly in small and medium-sized enterprises (SMEs). Achieving this is not something that will happen overnight, but neither is it something that has just begun. CeBI inherited the tremendous groundwork undertaken by its predecessor, the *Canadian E-Business Opportunities Roundtable* (1999-2002).

In reading this report, you will realize that the spread of Internet-based business networks across the economy has contributed to the high levels of sustained economic growth and productivity improvement that Canada has experienced in recent years. However, you will also understand that despite some gains made by medium-sized and larger firms in specific sectors, adoption and use of e-business by the smallest members of the SME community continues to lag behind Canada's principal trading partner, the United States. This poses a significant challenge to SMEs, who are major exporters and are also facing increasing competition here at home. E-business will assist them to be as globally competitive as possible.

The CeBI team has done extensive work to understand the depth of this challenge and to find solutions that will work. *Fast Forward 4.0* presents the effort and creative thinking of the many people who have dedicated their time, talent and enthusiasm to this initiative. The lasting impact and legacy of their ideas rests on the implementation of the recommendations for government, business and academia that are contained in this report. We would like to acknowledge the contributions of Joe Greene and Michael O'Neil of IDC Canada, and Richard Simpson, Sheila Smail and Andre Leduc from Industry Canada. Finally we would like to thank the many individuals, companies and institutions who contributed to this report.



A handwritten signature in black ink that reads "Pierre-Paul Allard".

Pierre-Paul Allard, Co-Chair
President and Chief Executive Officer
Cisco Systems Canada



A handwritten signature in black ink that reads "Nancy Hughes Anthony".

Nancy Hughes Anthony
President and Chief Executive Officer
The Canadian Chamber of Commerce

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GROWING CANADA'S DIGITAL ECONOMY

The economic revolution that began with the widespread business use of the Internet in the mid-1990's has gained both speed and intensity as we enter the 21st century. The Internet has fundamentally changed the way people and businesses communicate, share information and conduct transactions in Canada and around the world. The turbulence of the dot-com boom-and-bust, and ensuing technology sector downturn, has masked a sea of change in the overall economy, brought about by the large scale integration of Internet-based business processes into the industrial mainstream.

Whether the result is called the new economy, the e-economy, or the digital economy, the pervasive use of information and communications technology (ICT) has profoundly transformed the industrial landscape. As the Canadian E-Business Opportunities Roundtable wrote over a year ago "...e-business matters more than ever, because the new economy has become the whole economy."¹ The spread of Internet-based business networks across the economy has also been largely responsible for the highest levels of sustained economic growth and productivity improvement in North America in almost half a century as recent evidence makes clear. The Organization for Economic Cooperation and Development (OECD), among others, has pointed to "productivity growth that has been significant and rising"² in response to information technology networks and applications.

Such powerful changes, however, typically produce winners and losers – firms, sectors or countries that respond aggressively and effectively to the need to enhance their competitiveness through investment in technological innovation, and those who do not. Canadian firms are often leaders in technology development and keen adopters of new applications – two thirds of Canadian businesses are connected to the Internet. Yet, despite Canada's high levels of Internet connectivity we have yet to capitalize fully on the competitive advantage that e-business offers. The *International e-Economy Benchmarking Report*, prepared by the INSEAD business school, concluded that "despite the changes in working practices, and the acknowledged potential benefits of ICT and e-business, Canadian businesses have only embraced e-commerce to a modest extent".³

In order to understand the disparity between business connectedness and e-business use, the Canadian e-Business Initiative (CeBI) has endeavoured to know why Canadian firms are not applying Internet Business Solutions (IBS) to improve their business processes.

A major reason for this disconnect is the uneven diffusion of Internet-based business solutions across sectors and regions and particularly within the business community. While firms with 50-100 employees have shown strong gains in adoption just over a quarter of SMEs have indicated that they have no intention of adopting e-business,⁴ and slow adoption rates continue among enterprises with under 50 employees.⁵

SMEs play a critical role in the Canadian economy; they deliver 60% of Canada's economic output, generate 80% of national employment and offer 85% of new jobs.⁶ "SMEs, more than any other area of the Canadian economy, have the greatest potential for productivity gains through the adoption of e-business," states the 2002 *Net Impact Study*.⁷ Although Canada has a relatively good investment climate, advanced infrastructure, and a highly educated and IT literate workforce in which the digital economy can flourish, e-commerce adoption and use continues to lag behind Canada's principal trading partner, the United States.⁸

¹ *Fast Forward 3.0*, The Canadian E-Business Opportunities Roundtable, March 2002, www.ebusinessroundtable.ca.

² *A New Economy?* OECD Information Society, Paris: OECD, March 2000.

³ INSEAD, *International E-Economy Benchmarking Report*, November 2002.

⁴ *Net Impact Study Canada, The International Experience*, May 2003. www.cebi.ca.

⁵ Statistics Canada, *Survey of Electronic Commerce and Technology 2002*, Ottawa: April 2002.

⁶ Statistics Canada (SEPH) and Industry Canada Survey.

⁷ *Net Impact Study Canada, The SME Experience*, November 2002. www.cebi.ca.

⁸ INSEAD, op. cit.



Promoting the growth and adoption of e-business among small and medium sized organizations in Canada is the goal of the Canadian e-Business Initiative (CeBI), formed in September 2002 by over 40 business, government and academic leaders from across the country. CeBI believes that the long term effects of an SME adoption lag will seriously undermine Canada's efforts to create a more innovative and competitive national economy. CeBI carries on the work of its predecessor, the Canadian E-Business Opportunities Roundtable.

Fast Forward 4.0 continues the Roundtable's work on benchmarking the Canadian economy.⁹ CeBI has prepared an *e-Report Card* (found on page 8) that grades Canada's overall performance since the publication of *Fast Forward 3.0* in 2002, in promoting the growth of e-business and the digital economy and highlights the priorities for future action by governments and the private sector.

CeBI's report card focuses on three areas critical to advancing Canada as one of the most progressive digital economies in the world:

- **E-Business Readiness:**
 - Are Canadian businesses and consumers properly positioned to take advantage of the digital economy?
- **Growth and Acceleration:**
 - To what extent has Canadian business embraced e-business from an infrastructure and education perspective?
- **Investment and Image:**
 - What is the climate for attracting venture capital, including taxation and regulation, and does Canada's global perception match its very solid performance?

GRADING e-BUSINESS READINESS



E-business readiness is a measure of our ability to advance to the next stage of the process of e-business transformation. E-business readiness measures both whether Canada has a critical mass of businesses and consumers interacting online and a sufficiently secure and privacy-compliant Internet environment to protect those interactions.

Canadian citizens have enthusiastically embraced the Internet with over 60% of households connected, and Canada has proportionately the highest users in time spent online per capita.¹⁰ Similarly, business use is widespread and sophisticated; 76% of Canadian businesses used the Internet in 2002, up from 63% in 2000. Nearly all (93%) of businesses with 20 or more employees used the Internet in 2002.¹¹ This e-readiness opportunity is largely the result of exposure to ICT in education and in the workplace over the past two decades.

Despite a legal and policy environment favorable to privacy and security, however, the commitment to online privacy and security among mainstream businesses remains low. Over 81% of Canadian business that participated in the Canadian Bankers Association privacy and security information seminars were unaware of privacy rules or requirements prior to attending. Moreover, only 6% of attendees expressed extreme confidence in their own online security.¹²

⁹ See the Canadian E-Business Opportunities Roundtable, *Fast Forward 1.0, Fast Forward 2.0 and Fast Forward 3.0*. www.cebi.ca

¹⁰ INSEAD, op. cit.

¹¹ Statistics Canada, *Survey of Electronic Commerce and Technology 2002*, Ottawa: April 2, 2003. This report follows Statistics Canada taxonomy and classes firm size based on employee counts: Small businesses are firms that employ 1 to 99 full-time employees and medium-sized firms employ between 100 to 499 workers.

¹² *Minding Your e-Business*, Canadian Bankers Association, Toronto: July 2002.

GRADING GROWTH AND ACCELERATION

Growth and acceleration measures the degree to which Canadian companies have adopted e-business, as well as our ability to supply Canadian firms with skilled talent and Internet Business Solutions (IBS).

Canadian SMEs have not to date aggressively embraced and implemented e-business processes. According to the *Net Impact Study Canada*, only one-half of Canadian firms have adopted some form of IBS. Moreover, the ability of SMEs to embrace the e-economy is negatively affected by a lack of e-talent. Twenty-two percent of SMEs that adopted IBS and 23% of those that have not implemented IBS cannot find people with the technical skills to help them; 40% of adopters and 45% of non-adopters point to employee training as a barrier to e-business.¹³

In addition to constraints imposed by a shortage of time and money for many SMEs, there is a lack of scalable and SME-tailored e-business solutions.

GRADING INVESTMENT AND IMAGE

Access to capital and skilled labour – the most valued assets in the digital economy – is another key to Canada's continued economic success. Canada needs to promote and maintain an internationally competitive environment to attract investment in new and existing businesses and to attract and retain skilled labour. Such an environment includes tax policies and regulations that not only encourage but spur investment and innovation.

Canada's venture capital market continued to develop over the past year. An improving tax environment for new investment has been helpful for e-business investment, and additional changes to enhance opportunities for productive venture capital investment continue to be advanced and explored.¹⁴

Canada's economy has been resilient over the past year, despite the current global economic downturn. However, Canada's strong economic performance is not well understood internationally. Studies of U.S. business show investor and general public perceptions of Canada's economy as primarily resource-based and that "Canada's innovation image is weak".¹⁵ Image and perception, rather than performance, are a major hindrance to attracting additional investment and skills to the Canadian market.

¹³ *Net Impact Study, The SME Experience*, op. cit.

¹⁴ INSEAD, op. cit.

¹⁵ Ticknor, 2002.

e-REPORT CARD: 2002

➤➤ Progressing Rapidly	> Progressing	Paused	< Falling Behind
e-Business Readiness	Growth and Acceleration	Investment and Image	
> Businesses Online	e-Business Talent	> Venture Investment	
➤➤ Consumers Online	> SME Adoption	> Tax and Regulatory	
Privacy and Security Practices	< e-Business Supply	e-Business Brand	

> BUSINESSES ONLINE

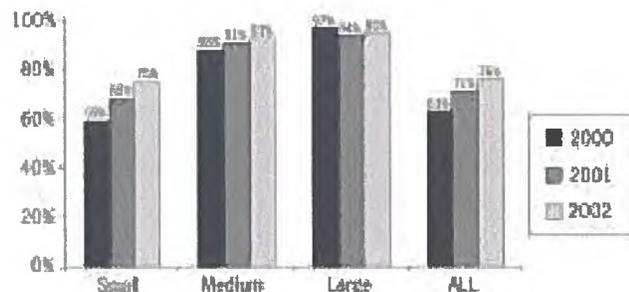
"While more than two thirds of Canadian firms are connected to the Internet, there is a noticeable difference in the rate of connectivity between SMEs and large firms."¹⁶

In order to take part in the e-economy, businesses must first be connected to telecommunications networks and to the Internet. That connection can then be used as a platform to establish a Web presence and to incorporate IBS into business operations. More than three-quarters of Canadian businesses had access to the Internet in 2002, up from 63 percent in 2000. However, small business lags considerably as shown in the graph at right.

The OECD ranked Canada 12th among OECD countries in connectivity of businesses with 10 or more employees in its report, *Measuring the Information Economy*.¹⁷ Although Canada has a considerable percentage of businesses connected to the Internet, it is apparent there is still room for improvement when compared to other OECD countries.

Much more needs to be done to encourage SMEs to get connected and, more importantly, to move from basic connection to the use of e-business. Otherwise, Canada risks losing out on the productivity gains created by e-business adoption and ultimately competing effectively in the global marketplace.¹⁸

Exhibit 1: Business Internet Adoption in Canada, 2000-2002, by Size of Firm



Source: Survey of Electronic and Technology, 2002 Statistics Canada

¹⁶ *Embracing e-Business, Does Size Matter?* Statistics Canada, June 2002.

¹⁷ OECD, op. cit.

¹⁸ *Net Impact Study, The SME Experience*, op. cit.

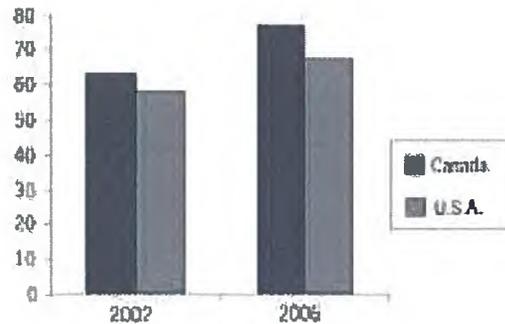
CONSUMERS ONLINE

Canadian consumers continue to connect to the Internet, although the growth rate is slowing. Almost two-thirds (60%) of Canadian households were connected to the Internet in 2001, up from 51% in 2000.¹⁹ According to IDC, 63% of Canada's population had access to the Internet at the end of 2002 and 77% will have access in 2006. Canada's connectivity compares favorably to the United States where only 58% of the population had access to the Internet in 2002 (see Exhibit 2).²⁰

Despite our higher connectivity, Americans tend to shop online more than Canadians. In 2002, 21% of Canadians shopped online versus 29% in the United States. In 2006, the gap is projected to widen slightly to 36% of Canadians versus 45% of Americans.²¹ Moreover, Canadian consumers are still spending just over a quarter (28%) of their online dollars at U.S.-based sites, according to pollster Ipsos Reid.²²

Privacy and security concerns are major barriers to full participation by Canadian consumers, who avoid online ordering and registration due to concerns about how personal information will be managed. Privacy concerns have been significant enough that three-quarters of Canadian online buyers chose not to make any online purchase from any site in the previous year.²³ Moreover, according to a recent Ipsos Reid survey, 59% of Canadians have Internet access but have yet to make a purchase online and 69% of those who shop frequently online are still concerned about security and privacy.²⁴ E-commerce will continue to be constrained as long as Canadians remain keen to shop online, but are still concerned with security and privacy issues.

Exhibit 2: Canadian and U.S. Consumer Internet Access 2002–2006



Source: IDC, *Internet Commerce Market Model VB.3*, 2002.

Secunda Marine Services Limited

Secunda Marine Services Limited of Dartmouth, Nova Scotia, founded in 1983, owns and operates 17 ships, that provide services to businesses around the world. In the last two-and-a-half years, the company has invested seriously in business-to-business e-commerce that lets it deal electronically with both suppliers and customers. Using the Internet, they are connected by satellite to their ships, wherever they are in the world.

Secunda specializes in service to the offshore oil and gas industry, including supplying, diving and rescue support, as well as laying trans-Atlantic fibre optic cable. It uses e-commerce to source components and equipment, to manage inventory, and to prepare and submit proposals. The company has implemented a fully computerized system that serves as a tool for scheduling work with clients worldwide, for human resource management, for planning and carrying out preventive maintenance, and for tracking the company's Quality Safety Management system.

The system was a major investment, the company expects a pay-off over the long term. Secunda believes that business-to-business e-commerce is here to stay. "E-commerce gives you an edge. It helps you plan, be more efficient and more cost-effective. So obviously, it helps you compete."

www.secunda.com

¹⁹ Statistics Canada, *Household Internet Use Survey 2001*, Ottawa, August 2002.

²⁰ IDC, *Internet Commerce Market Model VB.3*, 2002.

²¹ IDC, *Ibid.*

²² Ipsos Reid, *The Canadian Interactive Reid Report*, March 2002.

²³ IDC Canada, *Keen to Surf but Scared to Pay: Canadian Internet Privacy Attitudes*, Toronto.

²⁴ Reid Report, *op. cit.*

II AWARENESS AND COMMITMENT TO SME PRIVACY AND SECURITY PRACTICES

"What you don't know *can* hurt your business"²⁵

Concerns about security and privacy are critical barriers to the expansion of the digital economy for both business and consumers. Businesses have concerns relating to the costs involved in guaranteeing the privacy of consumer data, the theft of proprietary business information, infection by computer viruses, damage caused by computer hacking and 'denial of service' attacks. As well, suppliers, merchants, and customers are now demanding that measures be in place to protect their information before engaging in transactions online.

In addition to those pressures, legal requirements have emerged due to the pending deadline for compliance with the federal *Personal Information Protection and Electronic Documents Act (PIPEDA)*. The personal information of all Canadians will be protected by PIPEDA, or by "substantially similar" provincial legislation by January 1, 2004. PIPEDA establishes rules for the collection, use and disclosure of personal information by organizations in the course of commercial activity.

Despite consumer and business expectations respecting security and privacy, and the approaching legal requirements, there is a shocking awareness gap amongst SMEs about the need for action. As many as 81% of SMEs are unaware of the deadline for privacy compliance.²⁶ A privacy and security violation, deliberate or not, will have a negative impact on those businesses, their clients, and their employees and has potential far-ranging economic impacts. The Canadian Council of Better Business Bureaus estimates identity theft alone costs the economy C\$2.5 billion a year.²⁷

To mitigate the negative impact on the growth of e-business in Canada and on our competitiveness in the global digital economy, efforts must be increased to strengthen understanding and responsiveness to privacy and security issues.

1. CeBI recommends that government and the business community raise SME awareness of their privacy and security obligations.
2. CeBI strongly supports ongoing law enforcement efforts in the area of identity theft and other illegal activities related to the Internet, and encourages governments to take the necessary legislative actions.



Addressing the Privacy and Security Gap

SMEs must learn how to manage e-security and privacy risks. That's the message of *Minding Your e-Business: Security and Privacy Matter*, a free seminar offered in communities across Canada. From risk assessment and security policies to understanding impending privacy standards, the seminar gives business owners the basic information they need to protect their business, consumers and the entire supply chain.

The Canadian Bankers Association is spearheading this national initiative in co-operation with the Canadian Chamber of Commerce and local Chambers, and the Canadian Institute of Chartered Accountants (CICA).

To learn more visit the CBA web site at <http://www.cba.ca/>.

II e-BUSINESS TALENT

The explosive growth of information technology has changed the way we live, work and communicate. This has created a significant demand for skilled IT people to design, build, install, service, and create information technology applications. Despite the downturn in the technology sector in 2001, demand for those skills continues to far exceed

²⁵ *Minding Your e-Business*, Canadian Bankers Association, Toronto: July 2002.

²⁶ Ibid.

²⁷ <http://www.canadiancouncilbbb.ca>

supply. Recent estimates suggest that a further one million North Americans could be employed in rewarding, high-income jobs today if they had appropriate information technology skills.²⁸

Although Canada has a highly educated workforce, many college and university graduates are entering the marketplace lacking the appropriate IT skills required by most firms. The skills gap in Canada is most severe in the core occupational disciplines of computer science, microelectronics design, photonics and wireless design, software design, and systems analysis. Moreover, private sector university program funding in those areas may well be on the decline. In response to slowing growth, technology firms – traditional supporters of those core disciplines – may begin to cut their direct university and college funding as they wrestle to reduce costs. Canada's future economic growth could be critically impaired unless we act decisively to reverse this situation.

Another area where skill availability has been identified as a barrier is the combination of technical and business savvy required by Canadian SMEs to develop Internet-based business models and IBS. There are approximately 1 million SMEs in Canada. Over 20%, or 200,000, SMEs cannot find the skilled employees they require to implement e-business. Canada needs a comprehensive strategy to match skill training with SME skills requirements.

3. CeBI recommends that governments and the private sector help Canadian colleges, universities and technical institutions develop and deliver coursework for students and affordable course extension programs for SMEs on Internet business solutions
4. CeBI recommends that the federal government and the private sector commit to meet the human resource needs of SMEs by expanding programs like eCorps and in-house training.

ADDRESSING THE e-TALENT GAP

The eCorps Pilot Project – A SME Host Profile

At CeBI's initiative, eCorps, an IT internship program, was launched in the fall of 2002 as a pilot project. Industry Canada seed funding was provided for 50 internships matching skilled ICT graduates from Canadian Universities and Colleges with SMEs for a four-month period. The last internships were completed at the end of March, 2003, achieving significant results on two levels. The employability of IT graduates increased markedly, early indications are that nearly half of the interns have either stayed on with their SMEs or have found IT positions in other companies. The SMEs benefited from the skills of trained graduates and achieved measurable improvements in their ebusiness capability as a result of the four-month projects.

Located in Edmonton, Alberta, Redengine Inc. has, since 1996, created award winning internet solutions for its clients. The company wanted to create an *Intranet* that would integrate its accounting program, project management, and content management systems to enable staff quick and easy access to important information.

The eCorps Program enabled Redengine to complete the first phase of its integration strategy: the development of the internal integration. During the four-month project, the eCorps intern developed the backend systems required to create an Intranet for the company. The Intranet will improve Redengine's productivity by allowing the staff greater accessibility to information, and enabling them to work from remote locations.

Redengine was extremely happy with the eCorps program, the process and the intern. The company has since offered the intern a full time position with the organization.

"Through my eCorps internship, I was able to apply my knowledge of .net technologies. With the .net technologies, I was able to integrate the services and communications within the company. I learned to interact and work closely with other co-workers."

– Intern

For more information on eCorps visit: www.ecorpscanada.ca.

²⁸ www.itac.ca (see IT Skills).

> e-BUSINESS ADOPTION

“... networked businesses, especially smaller ones, were only slowly adopting more sophisticated e-business solutions”²⁹

E-business can enhance business operations by decreasing costs, increasing sales and introducing efficiencies that make organizations more productive and competitive. Virtually all IBS implementation to date has had a positive impact on revenue, has reduced the cost of goods sold and lowered Sales, General & Administrative (SG&A) costs.³⁰ But among Canadian SMEs, the lifeblood of the economy, e-business adoption and IBS implementation is not moving ahead quickly enough. A little over half of Canadian SMEs have adopted at least one IBS, but 28% stated they have no intention of adopting IBS.³¹ Moreover, U.S. SMEs have adopted more Internet Business Solutions than their Canadian counterparts.

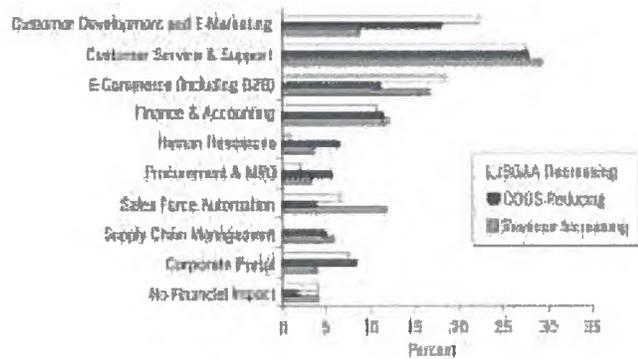
There are a number of barriers which seem to be holding many SMEs back, including; security and privacy concerns, uncertainty about return on investment (ROI), the high costs of implementation and maintenance, lack of skilled talent and suppliers and/or customers are not ready. CeBI has addressed those barriers and attempted to provide SMEs with the right information and tools over the past year, recognizing that productivity improvements provided by e-business will be essential for Canadian business to succeed in the digital economy.

Recent results show that the 'adoption lag' differs by sector, and also by firm size. *Net Impact Canada: The International Experience* found that medium-sized firms, those with 50-100 employees have made surprising gains, matching or even exceeding their European Union and US counterparts in the adoption of specific IBS types. For example, these firms led in the adoption of financial and accounting solutions and customer services solutions, but lagged in the use of supply chain management and sales force automation tools.³² These results heighten the need for concerted sectoral strategies that take SME adoption to the next level of sophistication.

The adoption pattern is thus quite complex. Those Canadian SMEs not adopting need to shed their traditionally conservative mindset and become more proactive and aggressive in educating themselves about the issues and opportunities of the digital economy. Those already connected should look to more sophisticated use. Otherwise Canadian SMEs run the risk of being marginalized as suppliers in increasingly competitive, and integrated, global markets.

5. CeBI recommends that industry associations and government work in partnership to develop sectoral assessments and action plans tailored to sectoral needs.

Exhibit 3: Financial Impacts of Internet Business Solutions



Net Impact Study Canada, The SME Experience, Nov. 2002

²⁹ Statistics Canada, *The Daily*, Ottawa: March 3, 2002. www.statcan.ca.

³⁰ *Net Impact Study, The SME Experience*, op. cit.

³¹ *Ibid.*

³² *Net Impact Study, The International Experience*, op. cit.



ADDRESSING THE ROI ISSUE

Net Impact Canada: Adoption Equals Competitive Advantage

*"E-Business is an innovation that is improving the productivity of Canadian small and medium sized enterprises (SME) and raising the competitiveness of the Canadian economy"*³³

Results from the *Net Impact Study Canada, The SME Experience* show that adoption of IBS leads to increased sales, decreased costs and a more competitive business. On average, revenues increased 7%, costs decreased 9.5% in the case of cost of goods sold (COGS) and 7.5% for sales, general and administrative costs (SG&A). Satisfaction with adoption of IBS among those that had it was high.³⁴

As an illustration, a firm with C\$10M in revenues, with a 20% gross margin and 10% net margin, can achieve increases in net profit of up to 154% in the "best case" scenario with those improvements in revenue and costs.

◀ e-BUSINESS SUPPLY

A major barrier to widespread SME adoption is the lack of affordable and scalable e-business products and services. One key issue associated with targeting products and services at SMEs is profit margin. By their nature, SMEs are a low-yield market for IT vendors because they are sectorally and geographically dispersed and modest spenders in IT. Moreover, SMEs have been relatively slow adopters of IBS and vendors are pointing to this lack of demand as a barrier to their ability to supply SMEs with e-business tools and maintain profit. Much of the margin for many e-business products targeted at SMEs is used to educate and support the small business. This is a disincentive for many suppliers.

There have been some commercial attempts to engage SMEs in e-business through e-marketplaces or digital exchanges such as Procuron Inc.³⁵ that have made only moderate progress in leveling the playing field for SMEs. However, cooperation among IBS vendors, industry associations and industry leaders can help develop industry standards for digital exchanges that will help to engage the SME.

A recent survey of Canadian CEOs and procurement officers suggests that a significant barrier to the implementation of online procurement systems is a lack of dedicated resources. In particular, SMEs underestimate the cost of implementation and support of these systems, and only 4% had received proper training from the solution provider.³⁶ To address this issue, some large firms such as Pratt & Whitney Canada, actively train their SME suppliers in their own e-commerce applications, as part of an explicit strategy to build online supply chains.³⁷

DaimlerChrysler, Ford Motor Company and General Motors jointly formed Covisint to combine efforts and form a single global business-to-business supplier exchange. Each company brought together its individual e-business initiatives to avoid the burdens suppliers would endure if asked to interact with redundant proprietary systems. The goal was integration and collaboration, promising lower cost, easier business practices and a marked increase in efficiencies for the entire industry.

www.covisint.com

³³ *Net Impact Study, The SME Experience*, op. cit.

³⁴ *Ibid.*

³⁵ Procuron was an exchange designed to allow Canadian businesses to purchase goods and services online including software, travel services and office supplies by combining the purchasing strength of its shareholders – Bell Canada, CIBC, Scotiabank, and the Mouvement des caisses Desjardins – and their customers to decrease the complexity for suppliers and to reduce costs in the supply chain. Procuron Inc. terminated operations of its e-marketplace due to complications with the platform and low use on September 13, 2002.

³⁶ Purchasing Management Association of Canada (PMAC); Press release: "A Blip on the e-Procurement Road in Canada"; (based on two surveys of online procurement, conducted by the Conference Board of Canada); May 2002.

³⁷ The Conference Board of Canada; Deliberations of its Council on e-Business Innovation; 2002-03.

Covisint represents a good example of sectoral co-operation in the automobile industry. By combining their efforts and eliminating three proprietary systems, Covisint made it affordable for SMEs in the auto industry to establish e-business practices (see box above). The auto industry can be used as a model of early adoption for other sectors which should be encouraged to develop systems with SMEs in mind.

6. CeBI recommends that IBS vendors co-operate with industry associations and industry leaders to develop standardized sectoral digital exchanges that are scalable for use by SMEs.

> VENTURE CAPITAL

Venture capital will continue to be critical for the Canadian business environment. Although venture investment fell in Canada in 2002, that decline was less than the U.S. venture capital market. Disbursements were down 35% in Canada from C\$3.8 billion in 2001 to C\$2.5 billion in 2002. In the U.S. market disbursements plunged approximately 51% to C\$21.2 billion in 2002, from C\$41.3 billion in 2001.³⁸

However, when measured as a percentage of GDP, Canada has a growing venture capital market, ranking second among OECD members.³⁹ "In a year of market correction and investor caution, Canada's venture capital industry nonetheless showed signs of vigor, especially in the final months of 2002. Industry capital flows totaled \$2.5 billion in 2002, achieved in part because of a burst of technology-intensive activity in the fourth quarter, when \$754 million was disbursed, up by 51% from the \$500 million in the third quarter."⁴⁰

Despite a real decline in investment, foreign capital maintained the same relative level as 2001, representing one quarter of all venture investment in Canada in 2002. That data indicates, however, that despite a strong fourth quarter, investment in Canada continues to be effected by an uncertain economy and a depressed high technology sector. Due to market uncertainty, fund resources were strategically reserved for follow-on transactions, which captured 74% of capital flows on balance, up from 63% two years ago.⁴¹ New businesses faced a very weak market for new venture capital investment.

Where Venture Capital Went 2002

Ontario – \$1.3 billion (just over 50%)

Ottawa \$735 million

GTA \$449 million

Quebec – \$722 million

Montreal \$527 million

Quebec also led Canada in the number of venture backed companies at 344 or 51% of the aggregate

BC – \$251 million to 64 companies

Stong's Market

If you live in Vancouver and have Internet access, you can now order groceries from Stong's Market online and have them delivered to your home. Stong's Market is a family owned grocery store that launched into cyberspace in May 1998.

The process is easy. First the customer registers then shops the online grocery store, which is set up just like the regular store with departments such as Produce, Dairy, Meat, etc. Already, Stong's has 600 regular/repeat online customers. Orders can also be placed by phone, fax or e-mail. Currently, Stong's is receiving about 130 orders a week with about 90-100 of those being online orders.

Stong's has added features to their system to make this experience all the more easy for online shoppers. One feature provides a running total of the costs of items that the purchaser selects, another allows shoppers to highlight products that they buy often and remember them for future use. These and others are all in place to make the online shopping experience quick and easy for the customer. It's ideal for busy downtown business people and stay-at-home parents who don't have the time or don't want to take the time to shop.

www.stongs.com

³⁸ Canadian venture capital assoc. www.cvca.ca.

³⁹ Günseli Baygan, *Venture Capital Policy Review: Canada*, OECD DSTI Working Paper 2003.

⁴⁰ MacDonald & Assoc., op. cit.

⁴¹ MacDonald & Assoc., *ibid.*

In the current environment of diminished availability of capital, it's more important than ever to attract new investment. Changes to the tax system (outlined below), continuing emphasis on meeting the skills needs of SMEs and spreading the word about Canada as an environment for e-business will aid tremendously in accomplishing this goal.

> TAX AND REGULATORY ENVIRONMENT

"Tax changes introduced in 2000 and 2001 have continued to improve the climate for e-business and innovation in Canada."⁴²

Tax and regulatory policies have an enormous effect on a firm's investment decisions. Canada must continue to create an environment that encourages SMEs to innovate and adopt technology by meeting their financing needs. Canada can only overcome the inherent U.S. market advantage by establishing significant differences – significantly lower tax rates – that will cause these highly valued individuals to take notice and think seriously about locating their next business, or next investment decision, in this country.

Tax changes introduced in the 2003 Federal Budget bring us a step closer to creating an even more hospitable business climate. The federal Government is also following through on its commitment to improve regulation. The Prime Minister appointed Hugh MacDiarmid as chair of the External Advisory Committee on Smart Regulation on February 11, 2003, and the 2003 Budget provides \$4 million over two years to support that work.

The most significant policy initiative in the 2003 Budget for the venture capital industry are the announced changes to the regulations affecting limited partnerships. There are a number of structural limitations within the Canadian tax system that discourage large institutions, such as pension funds, from making investments in the venture capital sector. Similarly, certain limitations affect the ability of non-Canadian investors, such as the vast pools of U.S. based institutional capital, to invest directly in a Canadian venture capital fund. After consultations with the Canadian venture capital community, the federal government, in the 2003 Budget, announced their intention to address many of those issues. When these limitations are removed, the Canadian venture capital community will have an unprecedented ability to attract new capital from major institutional investors in Canada and the United States. CeBI is looking forward to seeing the details of these proposals and their implementation in the very near future.

Another area where additional change can effectively be implemented is in the provisions governing the capital gains rollover for reinvestment. The federal 2003 Budget announced expansions to the capital gains rollover for individual investors by eliminating the \$2 million limit. However, since the rollover applies only to individual investors, a group with relatively small investment capital, the impact of this tax incentive is less than could be expected if the rollover were more broadly based, by being extended to include institutional investors.

Other measures that will improve the business climate include the five-year phase out of the capital tax beginning in January 2004, with the tax eliminated entirely for medium-sized businesses as early as 2004. Budget 2003 also reduced the small business tax rate to 12%, applicable on the first \$200,000 of qualifying income. That limit will rise to \$300,000 over four years. The budget also provided continued support for the SR&ED tax credit and other important programs that provide financial support and incentives for SMEs to engage in research.

7. CeBI recommends that the federal government extend the capital gains rollover for re-investment to institutional investors, where it will have greater impact.
8. CeBI recommends the federal government implement the announced changes to the rules governing qualified limited partnerships immediately.

⁴² *Fast Forward 3.0*, op. cit.

II CANADA'S GLOBAL e-BUSINESS BRAND: MATCHING PERCEPTION TO PERFORMANCE

Canada is one of the most technologically advanced economies in the world. Canada leads the world in household Internet connectivity and Canada's broadband penetration is second only to South Korea.⁴³ Canada ranks third in the dollar value of e-commerce per capita behind the U.S. and Japan⁴⁴ and has high rates of business connectivity at 76%.⁴⁵ Canada also has one of the highest rates of post-secondary education in the world and a highly IT literate workforce.

Canadians invented Java, wireless e-mail and defined the specifications for XML. According to *Wired Magazine*, "More than 80% of the world's animation and special effects software is Canadian." In the recently published *Global Information Technology Report 2002-2003 – Readiness for the Networked World*, published by the World Economic Forum, Canada moved up to 6th place from 12th in the overall rankings of countries.

Yet Canada remains little-recognized as an advanced digital economy. According to a Burson-Marsteller study of U.S. perceptions of Canada, the attributes most associated with us were friendly, charming and calm. The least associated attributes were high performance, innovative and up-to-date (Exhibit 4).

A study of 80 British business leaders and their perception of Canada as a potential location for business showed that only 15% consider "skilled workforce" to be a Canadian strength. In addition 55% indicated they felt Canada's economic conditions would get worse in the future.⁴⁶

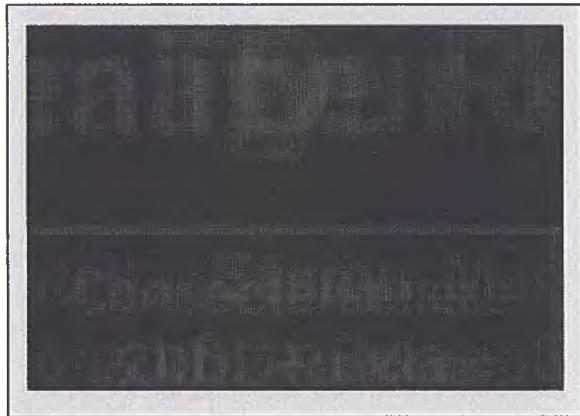
Image and perception, rather than performance, are the single major hindrance to attracting more investment and skills to the Canadian market. Perceptions of Canada are often based on our history as a resource-based, high tax economy. Those perceptions are often reinforced by an emphasis on quality of life factors and traditional images (Mounties and moose) used by those promoting trade and investment in Canada. The most coordinated promotion of Canada probably occurs under the auspices of the Canadian Tourism Commission, which reinforces the images of natural beauty and wide-open spaces.

To change global perceptions, a systematic effort is required to re-brand Canada. We need to develop new concepts for trade and investment promotion. Our consulates and trade missions need to re-focus their efforts to promote Canada as a dynamic, innovative digital economy. To further this goal, CeBI was pleased to see the additional dollars included in the 2003 Federal Budget aimed at increasing our consular presence in the United States. Finally, industry leaders from the private sector, acting as 'e-Ambassadors' can help deliver and reinforce this message.

ICT is today a dominant force in enabling companies to exploit new distribution channels, create new products, and deliver differentiated value-added services to customers. ICT is also an important catalyst for social transformation and national progress. Disparities in the levels of ICT readiness and usage could translate into disparities in levels of productivity, and hence could influence a country's rate of economic growth.

Source: World Economic Forum, *Networked Readiness*

Exhibit 4: Our Image vs. The Reality



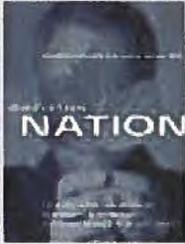
⁴³ OECD, op cit.

⁴⁴ Ibid.

⁴⁵ Statistics Canada, SECT, op. cit.

⁴⁶ Mori, 2002.

9. CeBI recommends the aggressive and coordinated promotion of Canada's digital economy by marketing Canada's connectivity, education levels and technological capabilities abroad.



ADDRESSING CANADA'S BRAND

Innovation Nation, Branding Canada to the World

This book sets out what many consider to be a well-kept secret. This secret has become an essential element in the competitiveness and profitability of many companies. It can make business builders more successful, investors wealthier, policy-makers more effective at encouraging economic growth, and may even embolden the leap into entrepreneurship. It is this: Canada is a global technology leader – it is an *Innovation Nation*.

From the invention of Java to developing the 3-D animation software used in *Jurassic Park* (which dramatically changed the way Hollywood made movies), Canadians have slowly moved toward pole position in the technology economy. Canadians like Jim Balsillie and Mike Lazaridis championed the idea of wireless e-mail and built Research in Motion, Jeff Skoll, a Montrealer co-founded eBay, and Vancouverite Tim Bray is working alongside Web creator Tim Berners-Lee at the heart of the World Wide Web Consortium. Across the spectrum of technology, Canadians have either assisted or quarterbacked some of the most meaningful innovations of our time.

The notion that Canadians are world-class technologists is not particularly top-of-mind when defining the Canadian identity. For those outside Canada, particularly Canadians who left home many years ago because the country was burdened with punitive tax rates and an economy that did not celebrate wealth creation, the idea of Canada as an Innovation Nation is even more foreign. Times, though, have changed.

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THE OPPORTUNITY AND THREAT OF THE DIGITAL ECONOMY

Progress in Canada's digital economy has been steady in the areas of venture capital, tax and regulatory areas and rapid in consumer connectivity. However progress in other areas, such as availability of e-talent, SME adoption of privacy and security practices, and the effective branding of Canada, is unsatisfactory. As found in the *Net Impact* studies, while some Canadian SMEs in specific sectors are enjoying progress, many, especially smaller SMEs are falling behind our global trading partners. Governments and business must perceive the uneven uptake across sectors as a potential threat, not only to individual businesses, but to the health of the Canadian economy.

Canada must redouble its efforts to fully engage in the digital economy of the 21st century. We must take advantage of the opportunities provided by our highly educated workforce and high connectivity levels and turn those into more sophisticated applications and e-business adoption that will lead to a more productive digital economy. Governments at all levels, educational institutions and industry all have a role to play.

BROADBAND INFRASTRUCTURE

Broadband more than allows for high speed Internet access: the OECD recognizes that "Broadband access to communication networks is important for economic growth and development".⁴⁷ Broadband is not only critical infrastructure for businesses, but is essential for the development of our communities and to facilitate the distribution of services as diverse as banking, healthcare and education.

Canada is a leader in the deployment of high-speed Internet access. According to a report by the OECD, Canada ranks second only to Korea in penetration rates of cable modem and DSL high-speed Internet services. Broadband will play an extremely important role in future e-business development and will be a key enabler for SME adoption of IBS.

Ubiquitous and affordable access to broadband networks will permit more efficient use of time spent online and will allow firms to develop more innovative and sophisticated business applications. A broadband telecom infrastructure must become the universal platform that consumers and businesses use to access the Internet. Within this context, SME e-business adoption strategies are a critical aspect to economically sustainable broadband deployment.

SECTOR STRATEGIES FOR BUILDING THE DIGITAL ECONOMY

Infrastructure will only take us so far. It is users, particularly business users who will employ the network to bring new money into their community, that will make the network valuable and sustainable. By encouraging the widespread uptake and use of e-business, the net benefits of the network will increase. This is the most direct way to improve Canada's productivity and make us more competitive in the global economy.

Certain sectors of the economy stand as models of Metcalfe's law, which posits that the benefits of a network increases exponentially as the number of users rises.⁴⁸ An example of this is the automobile parts supply industry and their use of networks, which have become more valuable as more users are added. Large enterprises can play a key role in developing the digital economy in Canada by creating exchanges and building sector-specific networks. Those adopters are a vanguard to pull smaller suppliers and customers within their industries into the digital economy.

Industry associations can also play an important role in working with sector leaders to identify sector-specific barriers and develop standards and exchanges. Sector-wide cross-economy strategies are a key investment in the virtuous circle to develop Canada's digital economy.⁴⁸

THE INTERNET AS AN EFFECTIVE PLATFORM

Internet hacking, identity theft and other abuses of the network, including spam, have damaged the effectiveness of the Internet as a tool for both citizens and business. The volume of spam has grown exponentially in recent years, clogging networks and costing service providers and businesses billions of dollars in lost bandwidth and productivity. Gartner Group Inc. estimates nearly half of all e-mail received by companies is spam.⁴⁹ Unlawful use of the Internet, such as online identity theft and Internet hacking, scare both consumers and businesses away from online transactions.

To create a more effective, secure and trustworthy platform upon which Canadians can transact, government and businesses must work in concert both nationally and internationally to address cybercrime. For example, Canada has signed the Council of Europe's *Convention on Cybercrime* which is the first international treaty on criminal offences committed through the Internet and other computer networks including identity theft, copyright infringements, fraud, and child pornography. Its main objective is to pursue a common criminal policy aimed at the protection of society against cybercrime, by adopting appropriate legislation and fostering international co-operation. The goal is to harmonize criminal law related to computer crime and to enhance international co-operation through mutual legal assistance mechanisms.

⁴⁷ *Broadband Access for Business*. OECD, DSTI/ICCP/TISP(2002)3/Final.

⁴⁸ <http://www.mgt.smu.edu/mgt487/mgtissue/newstrat/metcalfe.htm>.

⁴⁹ "Putting a lid on e-mail spam," *National Post*, March 19, 2003.

GOVERNMENT AS A MODEL USER

Government is valuable as a model user of the Internet for a number of reasons. Government Online (GOL) strategies can increase efficiencies by applying e-business to processes within government, between governments and with businesses and citizens, improving the speed of and access of public services. It can also spur the development of domestic infrastructure; and the potential pull-through effect and follow-on economic impact of a fully integrated Government Online strategy would be significant.

The federal government has made significant strides in its GOL progress and is internationally recognized in this area. Canada has placed first for three years running in Accenture's annual international e-government benchmarking study; *e-Government Leadership*.⁵⁰ Despite progress, governments at all levels must join the digital economy by offering public sector services over the Internet. This conclusion is shared by the Government Online Advisory Panel, which recently provided the following recommendations to the President of the Treasury Board:

The federal government must:

- Undertake a fundamental transformation to create an integrated service delivery network and commit to a user-centric approach; and
- Re-establish GOL as a whole-of-government priority that can catalyze the transformation of government into a multi-channel, multi-service delivery network.⁵¹

Assiniboia Livestock Auction

Saskatchewan's busiest cattle auction is now broadcasting many of its sales live over the Internet, and allowing pre-registered buyers to place bids in real time over the web with the click of a mouse. It's an entirely new concept for the industry and it's the brainchild of Roy Rutledge – Assiniboia Livestock Auction's (ALA) owner, manager and auctioneer.

Assiniboia began to broadcast its auctions over the Internet in October of 2000 – without pictures, but with the use of RealAudio. They've since developed video capability and have added high speed internet access to their technology arsenal. ALA now has the full meal web-enabled deal. Rutledge expects to broadcast dozens of sales each year on the Internet, with a potentially vast international audience watching.

Rutledge made the move towards e-commerce in order to expand his company's buyer and seller bases. The long-time auctioneer is also knows that more bidding competition inevitably leads to higher bids. He admits the research, development and implementation of this groundbreaking project hasn't been cheap. "Especially if you count my time," he says. But "I'm confident it'll pay back by the end of this year."

www.assiniboiaauction.com

⁵⁰ Accenture's 4th Annual eGovernment, Study, *eGovernment Leadership*. April 2003.

⁵¹ Report of the Government Advisory Panel, *Transforming Government to Serve Canadians Better*, December 11, 2002.

RESULTS OF DIGITAL ECONOMY INVESTMENT

The investments made in the digital economy by all stakeholders will have very tangible and reinforcing benefits. Increases in the sustainability, usability, trust and confidence of the Internet will result in more users and more interaction. A robust, well-populated digital economy will strengthen Canada's trade position and attract foreign investment, resulting in a stronger and more productive economy. As Bill Gates stated in early 2002, "The real digital decade has just begun."⁵²

Canada must act now to secure its digital economy future. Only when we get all the right building blocks in place will Canada's digital economy truly flourish. The door to the opportunity which leads the world into the digital age is still open.

Soapstone Artists of Sanikiluaq

Sanikiluaq is a tiny community of 700 is at the southern tip of Nunavut. Despite its isolation, it is known the world over for exquisite soapstone carvings, which are now being sold online.

Soapstone Artists of Sanikiluaq was created with the objective to offer sculptures directly to the customer through the web site and bypass dealers' markups. Robert McLean designed and launched the web site in 1998 and a year later, the web site was upgraded to enable e-commerce. Business has increased steadily. Soapstone Artists of Sanikiluaq ships to buyers from all over the world. An average of 325 carvings are now sold each month.

Increased sales have meant a greater influx of cash to this often cash-strapped community, particularly to the carvers. There is room for continued growth. Productivity is there, as is the supply of rock. It's just finding the market to sell them.

McLean admits, "There were a lot of obstacles and hurdles I had to jump over. If you have an idea and a dream, I think you've got to just stick with it. If you believe in your dream, then just go for it!"

www.soapstoneartists.com

⁵² *Innovation Nation*, Wiley Publishing, November 2002.

RECOMMENDATIONS

e-Readiness – Enhancing the Environment

1. CeBI recommends that government and the business community raise SME awareness of their privacy and security obligations.
2. CeBI strongly supports ongoing law enforcement efforts in the area of identity theft and other illegal activities related to the Internet, and encourages governments to take the necessary legislative actions.

Growth and Acceleration – Creating Velocity in SMEs

3. CeBI recommends that government and the private sector help Canadian colleges, universities and technical institutions develop and deliver coursework for students and affordable course extension programs for SMEs on Internet Business Solutions.
4. CeBI recommends that the federal government and the private sector commit to meet the human resource needs of SMEs by expanding programs like eCorps and in-house training.
5. CeBI recommends that industry associations and government work in partnership to develop sectoral assessments and action plans tailored to sectoral needs.
6. CeBI recommends that IBS vendors co-operate with industry associations and industry leaders to develop standardized sectoral digital exchanges that are scalable for use by SMEs.

Investment and Image – Promoting Canada in the World

7. CeBI recommends that the federal government extend the capital gains rollover for re-investment to institutional investors, where it will have greater impact.
8. CeBI recommends that the federal government implement the announced changes to the rules governing qualified limited partnerships immediately.
9. CeBI recommends the aggressive and coordinated promotion of Canada's digital economy by marketing Canada's connectivity, education levels and technological capabilities abroad.

e-TEAM 2003 UPDATE

CeBI Team	Team Mandate	Activities
Benchmarking and Metrics	Measure and report on Canada's performance as a dynamic, innovative e-economy	<ul style="list-style-type: none"> • <i>Net Impact Study Canada I & II*</i> • <i>Fast Forward 4.0*</i> • Online SME Tool: Web Self-Assessment • Online SME Tool: Payroll Self-Assessment • Net Impact III
Branding	To enhance Canada's brand recognition as an innovative e-business leader on the world stage	<ul style="list-style-type: none"> • <i>Innovation Nation</i> book launch* • Develop e-business branding strategy and messaging for Canada* • Cultivate e-Business Ambassadors to sell Canada's e-business successes • Deliver CeBI message at strategic international e-Business events • Work cooperatively with Government branding programs
e-Business Engagement	To drive the adoption of e-Business by Canadian SMEs via awareness and education	<ul style="list-style-type: none"> • Online Tool for SMEs: Evaluation of e-business ROI* • Promote SME e-business Success Stories • Research effective means of engaging SMEs re: e-business adoption • Development of Web vehicle for educating and engaging SMEs re: e-business adoption
e-Talent for SMEs	To increase SME access to appropriate technical and business resources	<ul style="list-style-type: none"> • Building on the <i>eCorps</i> model, develop concept for full-scale college-based program for development of e-talent for SMEs
e-Transformation	To promote the transformation of business processes among SMEs in Canada	<ul style="list-style-type: none"> • Research on barriers to supply-chain transformation and e-procurement* • e-Procurement Case Studies • Technology Roadmap to facilitate supply-chain transformation • Guide to e-Procurement for SMEs
Investment Climate	Create a distinct "Canadian Advantage" by making Canada the world's most attractive location for investment in innovation and e-business	<ul style="list-style-type: none"> • Pre-budget submission to Minister of Finance on 2003 budget* • Ongoing evaluation of Canadian tax policies and programs in terms of investment potential
Online Security and Privacy	Provide practical tools that will assist SMEs in overcoming online privacy and security related concerns	<ul style="list-style-type: none"> • National seminar program for SMEs: <i>Minding Your e-Business*</i> • Report on seminar findings – gauging SME awareness and understanding* • CICA Privacy Toolkit for use by small business, organizations and Chartered Accountants* • Global audit of privacy legislations and security standards* • 2nd round – <i>Minding Your e-Business</i> seminars, spring 2003 • Review of how other jurisdictions manage their approach to e-business security and privacy issues • Online Guide to Privacy and Security for SMEs

* activity completed

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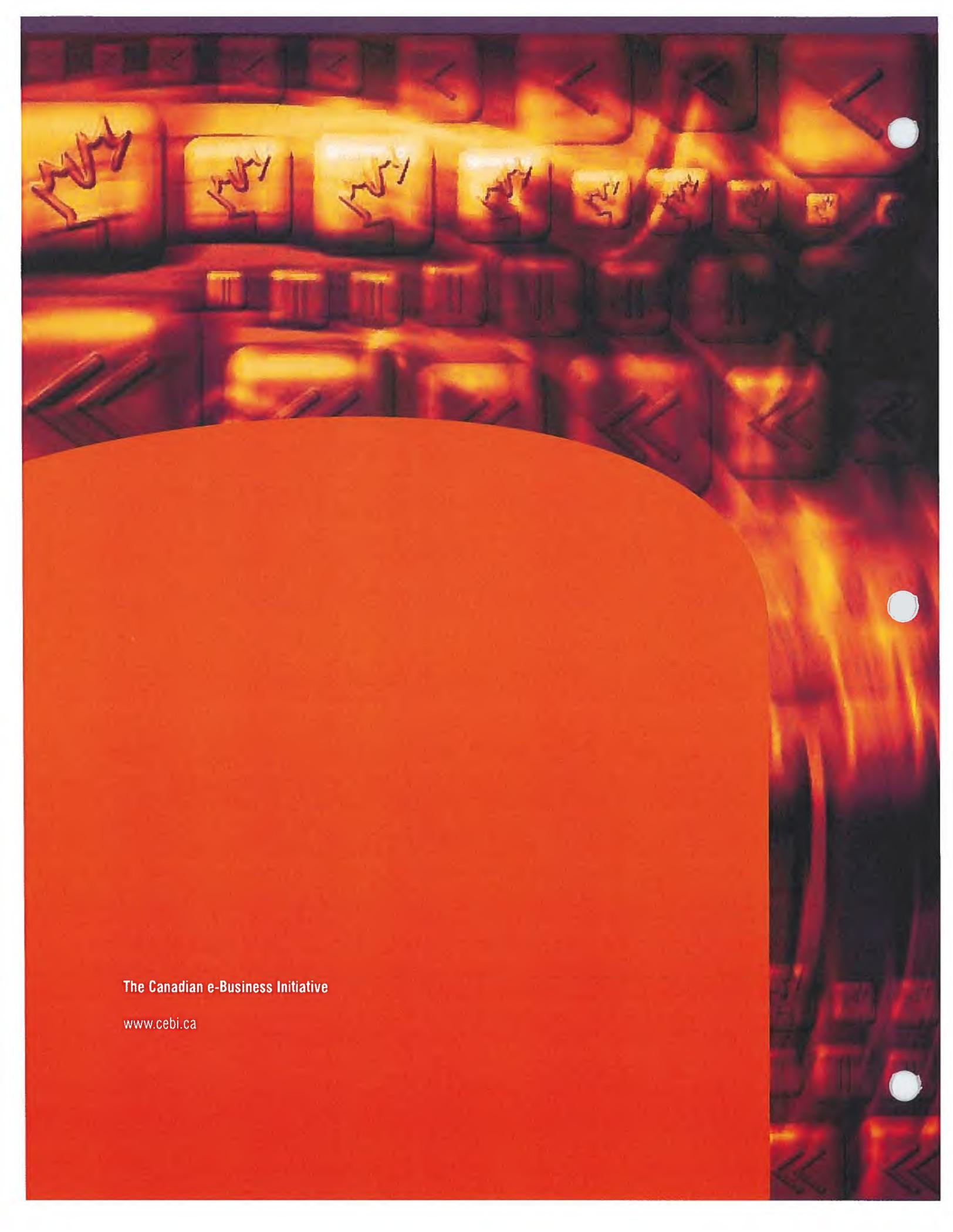
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