CANADIAN BUSINESS SPEAKS UP: An Analysis of the Adoption of Internet-based Technology

February 2017
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## Acknowledgments

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HIGHLIGHTS

• Ninety-one per cent of respondents to the Canadian Chamber of Commerce’s survey use the Internet for a variety of business purposes. Forty-eight per cent of businesses use the Internet for ecommerce, and the use of social media platforms is on the rise.

• Positive impacts of being online for businesses include the ability to acquire new customers, enhanced customer service, time savings and improved efficiency.

• Among the obstacles preventing Canadian businesses from adopting technology are technical barriers, the costs related to software and hardware and Canada’s Anti-Spam Legislation.

• Cyber security threats are underestimated by survey respondents with 64% indicating they have no intention of investing in cyber security measures at this time.

• When compared internationally, Canada remains a world leader in broadband subscriptions, access and use, with most Canadian businesses conducting business online through a website. Canada can learn from initiatives in Japan and Australia on broadband use and adoption.
OVERVIEW

As part of its commitment to continually engage the Canadian business network, the Canadian Chamber of Commerce launched an online survey in December 2016 to determine how companies were using Internet-based technology. This report builds on Powering up the Network: A Report on Small Business Use of E-business Technology Solutions in Canada, which was released in February 2010.

This report benchmarks Canadian businesses’ use of technology, compares progress to other countries and makes recommendations to the government. The results of the survey are reflected in this report and, given the rapid changes in digital technology, the Canadian Chamber of Commerce will be releasing a report on Canadian businesses’ use of technology on an annual basis moving forward.

Ninety-one per cent of Canadian businesses use the Internet for some business purposes, including for general searches, customer relations, marketing and online banking. Canadian Chamber members identified a number of barriers they face in adapting new technologies, including technical barriers (too many software updates, technology becoming obsolete quickly) lack of technical knowledge, costs of IT professionals and the application and costs associated with Canada’s Anti-Spam Legislation (CASL).

Businesses also indicated an interest in upgrading their networks. Access to high-speed Internet services across Canada, particularly in remote and rural areas, will continue to vastly improve with further investments from Canada’s Internet providers. The government’s investment of $500 million for the Connect to Innovate program will help boost broadband access exponentially in the years to come. And while the Canadian Radio-television and Telecommunications Commission (CRTC) decision from December 2016 to invest upwards of $750 million to provide Canadians with basic telecommunications services is well-meaning, Canadian businesses are best served when market forces are relied upon.

Using comparative OECD data released in January 2017, this report compares how Canadian companies are faring in relation to their international counterparts, particularly in the areas of access and use of broadband technology, adoption of new technologies and cyber security. According the January OECD report, Canada remains a world leader in broadband subscriptions, access and use, with most Canadian businesses now also conducting business online through a website.

The OECD report also notes that Canada has some catching up to do with other countries when it comes to mobile broadband subscriptions, businesses engaged in sales via ecommerce and information and communication technology (ICT) as a percentage of GDP. Larger firms have a much greater uptake of online sales than smaller firms, illustrating the importance of promoting the increased use of digital technology for SMEs.
In order to get a current picture of businesses’ views related to the use of Internet-based technology in Canada, the Canadian Chamber of Commerce conducted a survey of its membership with the assistance of its network of local, provincial and territorial chambers of commerce. The survey (conducted between December 2016 and January 2017) was designed to provide a snapshot to determine how Canadian businesses are currently using the Internet and new technology, their thoughts about digital security and any barriers they face adopting to new technologies.

Sectors that responded to the survey include businesses that provide professional and financial services, retail, manufacturing, agriculture, high tech/IT and transportation as well as not-for-profits.

According to a recent report by Innovation, Science and Economic Development Canada,¹ as of December 2015, the Canadian economy totalled 1.17 million employer businesses, of which 95% were small businesses (1-99 employees), 1.8% were medium-sized businesses (100-499 employees) and 0.3% were large businesses (500+ employees).

Of the 253 businesses that responded to the survey, 81% classify themselves as small, 7% as medium and 11% as large. Similar to the composition of businesses operating in Canada, the majority of respondents are small businesses. The Canadian Chamber’s survey results are compared throughout the report to OECD data released in January 2017. This comparison allows for a greater analysis of how Canadian businesses are using Internet-based technology.

Canadian Chamber Survey Results – An Overview

Ninety-one per cent of respondents to the Canadian Chamber survey use the Internet for a variety of reasons, most notably for general searches, marketing (the promotion of goods and services), online banking and operational matters (Figure 1).

The most highlighted positive impacts of being online for businesses include the ability to acquire new customers, enhanced customer service, time savings and improved efficiency and productivity.

Overall, the survey respondents (202 businesses) are using wireless services for business purposes 82% (Figure 3).

**Figure 1**

<table>
<thead>
<tr>
<th>How does your business currently use the Internet?</th>
<th>Top 5 responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General searches</td>
<td>91%</td>
</tr>
<tr>
<td>Customer relations</td>
<td>86%</td>
</tr>
<tr>
<td>Marketing</td>
<td>85%</td>
</tr>
<tr>
<td>Online banking</td>
<td>72%</td>
</tr>
<tr>
<td>Operational matters</td>
<td>68%</td>
</tr>
</tbody>
</table>

**Figure 2**

<table>
<thead>
<tr>
<th>Positive impacts of being online for your business</th>
<th>Top 5 responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquire new customers</td>
<td>87%</td>
</tr>
<tr>
<td>Enhanced customer service</td>
<td>83%</td>
</tr>
<tr>
<td>Time savings</td>
<td>72%</td>
</tr>
<tr>
<td>Improved efficiency</td>
<td>70%</td>
</tr>
<tr>
<td>Improved productivity</td>
<td>68%</td>
</tr>
</tbody>
</table>
Figure 3

<table>
<thead>
<tr>
<th>What solutions does your business currently use?</th>
<th>Top 5 responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellular phone/wireless services</td>
<td>82%</td>
</tr>
<tr>
<td>Business Internet (wired lines)</td>
<td>63%</td>
</tr>
<tr>
<td>Business telephone (fixed/landline)</td>
<td>61%</td>
</tr>
<tr>
<td>Cloud solutions</td>
<td>54%</td>
</tr>
<tr>
<td>Wireless Internet (USB stick or ‘hub’)</td>
<td>48%</td>
</tr>
</tbody>
</table>

In addition, 74% of the businesses surveyed have provided all of their employees with a desktop computer, while 44% of respondents have provided all of their employees with a mobile smart phone for company use.

Survey respondents identified investments in digital marketing as their key priority moving forward, with 68% having invested in it already or are planning to. Most businesses surveyed have or will also be putting resources towards productivity software, security software and other technology solutions, such as cloud computing and data centres (Figure 4).

Additionally, 51% of respondents said they have or will be making investments in their phone systems, and 29% have already or are planning to invest in voice over IP technology.

Figure 4

<table>
<thead>
<tr>
<th>Top 5 technology or training investments businesses have made, or plan to make, in the coming year</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital marketing</td>
<td>68%</td>
</tr>
<tr>
<td>Security software</td>
<td>63%</td>
</tr>
<tr>
<td>Productivity software</td>
<td>59%</td>
</tr>
<tr>
<td>Faster broadband speed</td>
<td>57%</td>
</tr>
<tr>
<td>Technology solutions (cloud, etc.)</td>
<td>57%</td>
</tr>
</tbody>
</table>
The greatest reported investments in technology or training in the past year were in security software, productivity software and digital marketing. Sixty-four per cent of respondents have no interest in investing in cyber security.

### Ecommerce

Forty-eight per cent of the businesses surveyed use the Internet for ecommerce. In 2015 in Australia, for example, about 44% of businesses reported using ecommerce to make sales, an almost 27% increase from 2005.² In comparison, only 12% of Canadian businesses reported engaging in sales via ecommerce in 2005. Interestingly, the OECD report released in January of 2017 indicates that only 18% of Canadian businesses are engaged in ecommerce (Figure 5).

#### Figure 5

Businesses engaged in sales via ecommerce
As a percentage of total business

![Figure 5](image-url)


² Ibid.
Skills

Building digital skills for Canadian businesses remains an area that continues to need more attention. The Canadian Chamber’s survey tells us that Canadian companies have, in the past year, invested or are planning to invest in digital skills training. Thirty-seven per cent of the businesses polled will invest in digital skills literacy, 50% will invest in software training and 31% will invest in cyber security training (Figure 6).

The January OECD report suggests the costs of training is a barrier to adopting digital technologies in Canada and other G20 nations. The Canadian Chamber’s survey revealed that 7% of respondents invested 6-10% of their total revenue in training while 51% invested 1-5%.

<table>
<thead>
<tr>
<th>Survey respondents’ investments in training in the past year or anticipated investments for the next two to three years</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software training</td>
<td>50%</td>
</tr>
<tr>
<td>Digital literacy training</td>
<td>37%</td>
</tr>
<tr>
<td>Cyber security training</td>
<td>31%</td>
</tr>
</tbody>
</table>

Figure 6
Digital Security

In a 2016 report, the Canadian Chamber of Commerce found the risks posed by cyber theft and digital security breaches are hindering Canada’s ability to compete globally, and small businesses are especially vulnerable due to a lack of resources. The majority of respondents to this most recent survey use anti-malware software (86%) and firewalls (85%) as their main security measures. More than three-quarters of respondents use secure servers (76%) and 89% are regularly backing up data.

As previously noted, 64% of the businesses surveyed have no intention of investing in cyber security measures at this time. Although they play an important role in preventing cyber attacks, many respondents are not using security measures such as unified threat management systems or encryption software. The most commonly reported security attack in the last six months was malware, including a virus, worm or Trojan (28%). Small businesses particularly need to take better advantage of advanced security measures to protect from DNS attacks and data breaches. Only 2% of the business surveyed have been the subject of a data breach in the past six months. This number is most likely much higher in reality as businesses cannot always tell when a data breach has taken place.

In comparison, the 2009 survey, entitled Powering up the Network: A Report on Small Business Use of E-business Solutions in Canada, found 93% of businesses reported they were employing anti-spam/anti-virus protections for their businesses, and 82% reported updating these protections at least once a month.

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3 The Canadian Chamber of Commerce, Canada’s Top 10 Barriers to Competitiveness in 2016, 2016.

Social Media

The use of social media as a business tool in Canada continues to increase. The majority of the survey respondents use Facebook for business purposes, mostly for marketing and awareness (69%). Fifty-four per cent use Twitter and 42% use YouTube. Very few of the businesses surveyed use social media as a platform for ecommerce.

The 2017 OECD report and graph below illustrates the growth of digital technologies and social media.

**Figure 7**

Digital technologies have a huge reach ...

... and are spreading more and more quickly

*For every 100 people in the world, there are ...*

- … 95 mobile-phone subscriptions
- … 40 internet users
- … 32 active mobile-broadband subscriptions
- … 25 social media users

**Time to reach 100 million users worldwide**

<table>
<thead>
<tr>
<th>Service</th>
<th>Years to 100 million users worldwide</th>
<th>Year of launch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone</td>
<td>75 years</td>
<td>1878</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>16 years</td>
<td>1979</td>
</tr>
<tr>
<td>World Wide Web</td>
<td>7 years</td>
<td>1990</td>
</tr>
<tr>
<td>iTunes</td>
<td>6 yrs, 5 mos</td>
<td>2003</td>
</tr>
<tr>
<td>Facebook</td>
<td>4 yrs, 5 mos</td>
<td>2004</td>
</tr>
<tr>
<td>Apple App Store</td>
<td>3 yrs, 3 mos</td>
<td>2008</td>
</tr>
<tr>
<td>WhatsApp</td>
<td>2 yrs, 4 mos</td>
<td>2009</td>
</tr>
<tr>
<td>Instagram</td>
<td>2 yrs, 2 mos</td>
<td>2010</td>
</tr>
<tr>
<td>Candy Crush Saga</td>
<td>1 yr, 3 mos</td>
<td>2012</td>
</tr>
</tbody>
</table>

Source: OECD, Key Issues for Digital Transformation in the G20, January 12, 2017
Barriers

Among the obstacles preventing the survey respondents from using the Internet for their business are technical barriers (too many software updates, technology becoming obsolete quickly), lack of technical knowledge, costs of IT professionals and the application and costs associated with CASL (Figure 8). Many of the businesses surveyed would like to upgrade their networks.

Figure 8
Barriers to digital adoption

“CASL is hurting Canadian companies, not the spammers it was designed to stop.”
-Survey respondent

Complying with CASL is important for Canadian businesses to remain competitive, yet CASL is seen as a barrier to business. Of the businesses surveyed, 63% have had to make modifications to their marketing practices as a result of CASL’s implementation in 2014, and 50% are concerned about the coming into force of the Private Right of Action provisions of CASL. The majority (56%) of respondents have spent between $1,000 and $10,000 to comply with the legislation.

How Canadian Businesses Are Faring Online

Compared to other G20 nations, Canada has a very good presence online, ranking fifth in the world behind only Japan, Germany, Italy and the United Kingdom (Figure 9). The adoption of Internet-based technology for Canadian companies will continue to be a marker of our overall economic success when compared to other leading nations. The rate of digital technology adoption among Canadian businesses will drive innovation and will allow for Canadian businesses of all sizes to grow globally. The Honourable Navdeep Bains, Minister of Innovation, Science and Economic Development, says the government should support private sector leadership in the governance of the Internet, which has allowed it to develop into a powerful technology.6

“Canada’s ability to innovate will define its success as a country in today’s digital economy. That economy depends fundamentally on an open Internet that enables the free movement of goods, services and ideas around the globe.”

- Hon. Navdeep Bains, Minister of Innovation, Science and Economic Development

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**Figure 9**

Businesses with a web presence as a percentage of total business

Note: For Argentina and the Russian Federation, no recent data is available.

Source: OECD, Key Issues for Digital Transformation in the G20, January 12 2017
A SNAPSHOT OF CANADA’S RANKING AND INTERNATIONAL BEST PRACTICES

Figure 10
Canada’s Rankings in ICT and Business

<table>
<thead>
<tr>
<th>Measurement Tool</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Competitiveness Index (The World Economic Forum measures the set of institutions, policies and factors that determine the level of productivity of a country)</td>
<td>15th</td>
</tr>
<tr>
<td>ICT Development Index (Published by the ITU, a UN specialized agency for ICTs, which combines 11 indicators)</td>
<td>25th</td>
</tr>
<tr>
<td>Ease of Doing Business Economy Ranking (The World Bank ranks countries based on whether the regulatory environment is more or less conducive to operating a firm)</td>
<td>22nd</td>
</tr>
</tbody>
</table>
Canada’s Broadband Plan

In December 2016, the CRTC announced a plan to assist Canadians in fully participating in the digital economy by declaring access to broadband Internet a basic and needed service. The aim is to ensure all Canadians, regardless of geography, are able to access high-speed broadband Internet service of at least 50 Mbps for downloads and at least 10 Mbps for uploads by 2021. The government intends to invest up to $750 million over the next five years to assist with broadband expansion to all regions of Canada.

In September 2016, the European Commission proposed new targets for a European Gigabit Society by 2025. Under these proposals, all schools, transport hubs, main providers of public services and digitally intensive enterprises would have access to Internet connections with download/upload speeds of 1 gigabit of data per second (Gbps). In addition, all European households would have access to networks offering a download speed of at least 100 Mbps, and all urban areas, as well as major roads and railways, would have uninterrupted 5G wireless broadband coverage. The United States aims to provide Internet service of 100 Mbps to 100 million homes by 2020.7

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LEADING COUNTRIES IN ICT

Japan

Access to the Internet in Japan is almost universal, and at 139 subscriptions per 100 habitants, Japan leads the G20 economies in mobile broadband penetration. Japan also leads the G20 in the percentage of businesses with a web presence, at 87%. In comparison, Canada continues to lag behind countries, such as Germany, Italy, and the United Kingdom, with only 77% of businesses reportedly having a web presence, according to an OECD report. Interestingly, the Canadian Chamber’s survey of Canadian businesses found that 91% of respondents use the Internet for some business purposes.

Having recognized the impact of ICT on productivity and economic growth, in February 2013, the Ministry of International Affairs and Communications (MIC) set up the Council on ICT Strategy and Policy for Growth to study the issue in-depth. The Council arranged eight study groups to study three key themes:

1. Strategies to deal with social problems that can use ICT to contribute to solving, promoting ICT smart town development and dealing with a super-aging society

2. Strategies to create new industries that can contribute to the expansion of broadcasting content for overseas, to support the realization of next-generation broadcasting services to the creation of new added values through ICT, and to strengthen cyber security

3. The nature of ICT policies as a R&D strategy for innovation

In 2015, the government issued a revised “Declaration to be the World’s Most Advanced IT Nation.” Japan seeks to secure broadband environments at the world’s highest levels, support efforts to develop ultra-high-speed broadband in remote areas and ensure cyber security at all levels.

Australia

While every G20 country has reported increasing its sales via ecommerce in 2015, Australia led the pack with 44% of its businesses reportedly engaged in sales through ecommerce. Comparatively, Canadian firms lagged behind countries, such as Indonesia, Brazil and France, with only about 18% of businesses reporting sales via ecommerce in 2015. However, while approximately 70% of Australian firms reported placing orders over the Internet in 2015, Canada followed close behind.

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9 Japan Ministry of Internal Affairs and Communications, Japan’s ICT Growth Strategy – Contributing to Domestic Economic Growth and the Global Society, Autumn 2013.
On the subjects of broadband and access, in contrast to Canada’s plans to boost coverage in underserved areas by investing $500 million over five years, Australia aims to achieve, by 2020, speeds of 50 Mbps to 90% of households and businesses and at least 25 Mbps to the whole population.

To support digital security strategies, Australia has implemented measures to allow small businesses to have their cyber security tested by CRET Australia New Zealand accredited providers.

Countries Supporting SME-targeted Initiatives in National Digital Security Strategies

- France’s National Digital Security Strategy reinforces that the State has a major role to play in ensuring digital security across sectors. The objectives of the strategy include enforcing digital trust and privacy as well as raising awareness and continuing education.

- In Germany, the Federal Ministry of Education and Research is funding research programs to develop sophisticated security software tailored to SMEs.

- The United Kingdom is providing training and capacity development through the Cyber Essentials or Cyber Essentials Plus programs, which provide free online information security training for SMEs.

Countries Supporting SME-targeted Initiatives for Ecommerce

- Malaysia has implemented a National Ecommerce Strategic Roadmap, with the intention of doubling the growth of the ecommerce market to 20.8% by 2020.

- In December 2016, the European Commission unveiled a series of measures to improve the value-added Tax (VAT) environment for ecommerce businesses throughout the European Union.

- Bermuda has a Department of Ecommerce that focuses on technology-related policies and legislation and offers programs such as ebusiness seminars.

Countries Supporting Skills Development

- In the Australian curriculum, students develop information and communication technology capabilities through specific course content.

- In the United States, the government launched the Computer Science for All Initiative to give all students across the country the chance to learn computer science in school.

- The United Kingdom has proposed to make free digital skills training available as part of the government’s Digital Economy Bill.
THE PATH FORWARD: RECOMMENDATIONS FOR GREATER DIGITAL ADOPTION

To ensure Canada’s leadership in the global digital economy, the federal government should consider the recommendations that follow. Foremost, the development and regular review of a National Broadband Strategy would provide the roadmap for Canada’s digital future. The strategy will ensure continued investment in world-class broadband infrastructure and maximize innovation and consumer needs.

In addition, the federal government could do many things to reduce the current barriers for Canadian businesses adopting digital technologies, including continuing to support digital literacy and science, technology and math skills for Canada’s youth. The government could also enhance or introduce tax measures that would help businesses, such as making permanent the Accelerated Capital Cost Allowance on technology hardware. The federal government should also fully examine the impact of Canada’s Anti-Spam Legislation on Canadian businesses – is it effective? Does it do more harm than good?

Increased private sector investment is definitely needed for Canada’s digital productivity to continue to improve. However, there is no doubt the federal government could make significant improvements to the current tax system and assist with education and strategies so that Canadian businesses, especially small businesses, could rapidly grow their business online.
RECOMMENDATIONS

1. The government should implement a National Broadband Strategy for Canada with well-defined targets and a review mechanism.

2. Like other leading nations, such as the United Kingdom and the United States, the government should provide better training and guidance for Canadians, particularly for SMEs, in the use and advantages of embracing digital technology (including social media for ecommerce).

3. Working with the private sector, the government should provide better support for STEM skills and digital literacy through a national education campaign.

4. Building on improving broadband access in rural and remote areas through the Connect to Innovate program, and considering the unique needs of SMEs, the government should encourage and support continued private sector investments into next-generation broadband networks and work with the CRTC to make high-speed broadband readily accessible for all Canadians.

5. The government should study the impact CASL has had on the Canadian business community.

6. In light of the recent consultations to update Canada’s Cyber Security Strategy, the government should take into consideration the vulnerabilities of SMEs and the implications of cyber attacks on these businesses.

7. Canada should work closely with G20 nations and develop a cyber security baseline framework for efficient cyber security risk management across economic sectors.

8. To improve Canadian businesses’ adoption of digital technology, the government should provide tax measures, such as allowing the Accelerated Capital Cost Allowance on technology to provide for software purchases and training for businesses.

9. The government should implement policy measures that will further enhance the ecommerce environment in Canada, particularly for SME adoption of digital technology.

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