The Internet and Canada’s Future: Opportunities and Challenges

Report of the Canadian Internet Forum
Ottawa, Ontario
February 25, 2011
Table of Contents

Introduction 1
The CIF process 2
Why build a public Internet forum in Canada? 3
  Regaining leadership 3
  Responding to new challenges 4
  Reinforcing public Internet governance 4
Key messages 5
  Creating synergies between digital literacy and economic development 5
Fundamental Internet governance challenges 6
Messages to the global Internet community 7
Issues to be addressed 7
  Developing a national Internet vision 7
  Affordable access to world-class Internet infrastructure and services across all of Canada 8
  Transforming education for the digital age 9
  Digital literacy in support of individual rights and responsibilities 9
  Enabling Internet-based innovation 10
  Development of Canadian digital media and content 11
Conclusion 11
Introduction

The inaugural process of the Canadian Internet Forum (CIF) took place between November 2010 and February 2011, culminating in a national event February 25 in Ottawa, Ontario — the site of one of Canada’s main high technology clusters and the home to many leading Internet companies and startups. The forum was organized by the Canadian Internet Registration Authority (CIRA) with assistance from the International Institute for Sustainable Development (IISD) and the Media Awareness Network (MNet).

More than 200 stakeholders from the private sector, civil society, the research community, academia, and government took part in the CIF. The forum was modeled on similar events that have taken place in recent years at the global level under the aegis of the United Nations Internet Governance Forum (IGF), as well as in other countries and regions. Information on these other events is available at http://www.intgovforum.org/cms.

The CIF provided a unique space for participants to explore the opportunities and challenges the Internet presents for Canada’s future. Their discussions suggested that the fast evolving nature of the Internet requires all stakeholders not only to position themselves to leverage the opportunities it offers, but also to cooperate in the development of innovative, multi-stakeholder governance approaches to the challenges it raises.

Alternatives to this approach — such as subjecting the Internet to the kinds of governance structures that characterize the telecommunications and broadcasting industries — risks impeding the development of the Internet in Canada and sub-optimizing its benefits for economic growth, social development and environmental sustainability.

Success in this venture into new and uncharted territory will help position Canada as a leader in the development of the digital economy and the global information society.

The purposes of this paper are as follows:

- To report the results of the CIF to its participants and other Internet stakeholders, as a basis for advancing discussion of Internet policy and governance issues within Canada, as well as furthering the development of multi-stakeholder approaches to these issues.
- To provide a Canadian perspective on Internet policy and governance issues to the sixth UN Internet Governance Forum that will take place in Nairobi, Kenya in September 2011.
The CIF process

The CIF has been a bottom-up process that began in October 2009 when CIRA commissioned an opinion survey on Internet policy-making in Canada. The aim of the survey was to assess the value in establishing a new multi-stakeholder forum to explore Internet policy, management and governance issues of relevance to Canadians. The survey results indicated a strong interest among Internet stakeholders in the establishment of such a forum (http://www.scribd.com/doc/45212040/Report-on-Canadian-Interest-in-Internet-Governance).

In the CIRA survey, the linkages between the development and deployment of the Internet, economic development and digital literacy emerged as major issues of public interest in Canada. In order to explore these issues in greater depth, CIRA organized a series of six regional consultations in November 2010.

Three of these consultations focussed on the linkages between economic development and the Internet. They were organized with the assistance of IISD and took place in Winnipeg, Iqaluit and Toronto. (See http://www.scribd.com/doc/42037746/Canadian-Internet-Forum-Digital-Economy-Backgrounder for the background paper prepared for these consultations and http://cif.cira.ca/reports-digital-economy for a report of their proceedings.)

The other three consultations focussed on the linkages between digital literacy and the Internet. They were organized with the assistance of MNet and took place in Halifax, Montreal and Vancouver. (See http://www.scribd.com/doc/42036717/Canadian-Internet-Forum-Digital-Literacy-Consultation-Backgrounder for the background paper prepared for the consultations and http://cif.cira.ca/reports-digital-literacy for a report of their proceedings.)

Following these regional consultations, in December 2010 CIRA launched an online discussion group at http://cigf.cira.ca/discussion-group to provide further opportunities for Canadians across the country to contribute to the CIF process.

As the culmination of this process, the goals of the February 25, 2011 CIF meeting were:

- To consider the results of the regional and online consultations.
- To develop a national perspective on the issues that emerged from these consultations.
- To identify key items that may position Canada as a leader in the development, deployment and use of the Internet as a key factor in our future economic and social development.
- To chart the course for future dialogue on issues of Internet governance.

To assist CIF participants in meeting these objectives, CIRA, IISD and MNet developed a background paper summarizing the results of the regional and online consultations. CIRA also commissioned presentations on key Internet governance issues from expert panellists and presenters at the forum. (See http://cif.cira.ca/canadian-internet-forum-background-paper/ for the CIF background paper. The CIF agenda is available at http://cif.cira.ca/2011/01/cif-national-
event-agenda. Presentations made at the forum by invited experts are available at http://www.slideshare.net/CIRANews/canadian-internet-forum.

Why build a public Internet forum in Canada?

Participants in the CIF and the regional and online consultations that preceded it were clear – the Internet is vital to Canada’s future.

- For the country as a whole, the Internet provides new and unprecedented opportunities for addressing the economic, social and environmental challenges we face now and in the decades ahead, particularly because of the geographic and demographic characteristics that shape our economy and society.
- For governments, businesses, researchers, educators, health care providers, voluntary organizations, and the not-for-profit sector, the Internet is a strategic tool for product and service innovation, organizational transformation, enhanced productivity, better performance, and more effective communication.
- For individual Canadians, the Internet increasingly affects opportunities and outcomes for every area of private and public life — for learning and employment, for exploration and expression, for relations with families and friends, for access to government services, and for citizen engagement and public participation.

The CIF process revealed an emerging consensus among Internet stakeholders that there is a strong public interest in the future development and use of the Internet in Canada because of its pervasive economic, social and cultural impacts — which increasingly are felt by individuals, families, communities, organizations, and institutions everywhere in the country.

The CIF process also revealed an emerging consensus that there is a need for a public forum where all stakeholders can help explore and articulate the public interest in the future development and use of the Internet in Canada — by considering its impacts; discussing the opportunities and challenges they present; identifying issues requiring action by stakeholders in government, the private sector, and civil society, and raising awareness of these issues among decision-makers and the general public in Canada and internationally.

In the view of many participants in the CIF process, the impacts of the Internet are so pervasive and so profound they constitute a prima facie case for establishing a public Internet forum. In addition, CIF participants identified a number of more specific reasons a forum of this kind is needed in Canada.

Regaining leadership

Although Canada has always been among the world leaders in Internet deployment and use, there was a feeling among CIF participants that we need to do better. In recent years, international comparative studies repeatedly have shown that Canada is falling behind on key
Internet indicators such as the speed and cost of broadband access and Internet uptake by small- and medium-sized enterprises (SMEs). In addition, concerns were repeatedly expressed about current Internet adoption in the public sector, particularly in Canada’s education and health care systems.

CIF Participants clearly felt that Canada would continue to fall further behind without greater focus on Internet development and use as a national priority in the digital economy.

**Responding to new challenges**

The Internet continues to evolve at a rapid speed. Recent years have seen the rise of social networking, user-created content and other Web 2.0 platforms and applications; the explosive growth of mobile broadband services; the proliferation of Internet-enabled devices and appliances; and the development of intelligent sensor networks and other technologies that will use the Internet to connect inanimate objects through the Internet of Things.

These trends and developments are raising important, complex questions about the public interest in the Internet that ideally should be explored as part of the innovation process in order to facilitate timely and effective decision-making in the public and private sectors.

**Reinforcing public Internet governance**

Unlike the centrally managed and regulated telecommunications and broadcasting networks that preceded it, the Internet was built bottom-up as an open network of networks, designed to maximize opportunities for users to access, create and exchange information and minimize controls on their activities. Reflecting this architecture and the values it embodied, the Internet traditionally was governed bottom-up on a voluntary, consensus-driven basis by Internet developers and users through a distributed set of structures and processes that focused mainly on technical questions and Internet capacity-building around the world.

In the past two decades, as the impact of the Internet has become increasingly pervasive and profound, the legal, economic, social, and cultural issues raised by its development and use have begun to be addressed by policy-makers and regulators outside the Internet community through a variety of governance processes. As Sally Wentworth, Senior Manager for Public Policy at the Internet Society, underlined in her CIF presentation, this has resulted in a complex, highly distributed Internet governance ecosystem involving many different actors and processes at the regional, national and global levels.

In his presentation, CIRA President and CEO Byron Holland suggested that as the complexity of Internet governance increases, there a need for a public forum that engages all stakeholders and provides a comprehensive, balanced view of the public interest in the development and use of the Internet as an input to government policy-makers and regulators, other public authorities, and decision-makers throughout Canada’s economy and society.
Holland warned that centralized, top-down control of the Internet — the alternative to maintaining and enhancing the distributed, bottom-up, consensus-driven Internet governance model so that it is able to cope with increasing complexity risks sub-optimizing the role the Internet can play in Canada’s future.

**Key messages**

*Creating synergies between digital literacy and economic development*

The CIF and the regional consultations that preceded it focused on two broad themes that emerged from the CIRA survey of Canadian Internet stakeholder interests: 1) The relationship between the Internet and economic development; and, 2) The relationship between the Internet and digital literacy.

- Key issues under the digital literacy theme revolved around the steps that must be taken to raise digital literacy in all segments of the Canadian population, broadly defined to include the capacity to use the Internet and other digital media at school, in the workplace, and in daily life; to understand, contextualize, and critically evaluate digital media and the challenges and opportunities arising from the social and economic impacts of these technologies; and to create digital products and services for personal use and enjoyment as well as for the competitive marketplace.

- Key issues under the economic development theme revolved around the role of the Internet in enabling innovation, generating job opportunities, enhancing productivity and competitiveness in all economic sectors, improving the quality and efficiency of government and public services, and supporting sustainable economic growth by helping to reduce the environmental impacts of economic and social activities.

One of the main messages emerging from the CIF was that these two themes are tightly interconnected, and that the public discourse surrounding them needs to be reframed and rebalanced to put greater emphasis on digital literacy — a task for which a public forum like the CIF is well-suited.

The relationship between the Internet and economic development has been the subject of much discussion and debate in Canada over the past decade. However, until recently this discussion has mainly engaged participants from within the Information and Communication Technologies (ICT) sector, rather than representatives of the broad range of economic and social interests impacted by the Internet. In addition, this discussion has taken place largely within the confines of established institutional responsibilities and policy-making processes that are focused on the development of ICT technology, infrastructure and industrial capacity.

Governance practices of this kind have considerable merit, particularly when issues and options are clearly defined and well matched to organizational responsibilities and capacities. However, when issues and options are complex and cut across institutional policy-making responsibilities,
governance structures and processes may place overly-narrow limits on policy discourse and important linkages may be missed, resulting in sub-optimal outcomes.

As Marta Morgan, Assistant Deputy Minister for Strategic Policy in Industry Canada indicated in her remarks to the forum, this situation is beginning to change. Key issues arising from the relationship between the Internet, economic development, R&D capacity, and workforce skills — a key component of digital literacy — will be central elements of the digital economy strategy which was in development at the time of writing under the leadership of Industry Canada, Human Resources and Skills Development Canada and Heritage Canada.

Participants in the CIF clearly welcomed the opportunity to contribute to the process of building bridges between these different policy domains by expressing their views on the relationship between digital literacy and economic development in an open forum that allowed them not only to comment on broad questions of policy and strategy, but also to make specific, practical suggestions for creating synergies — in many cases, by drawing on their own experience as students, entrepreneurs, public servants, or volunteers.

In sum, although separate regional consultations were held on the topics of economic development and digital literacy — and although the CIF agenda originally was structured around this distinction — the discussion that took place at all these events suggested that as a practical matter they cannot be treated in isolation from one another.

The view that emerged from the CIF was that digital literacy and economic development should be seen as complementary components of an Internet governance strategy aimed at creating a virtuous circle in which widespread digital literacy enables sustainable economic growth, which in turn generates new requirements for digital literacy, along with the wealth needed to support its continuous development throughout the population.

**Fundamental Internet governance challenges**

In addition to recognizing the close connections between economic development and digital literacy, the CIF process identified a number of fundamental Internet governance challenges that must be addressed to enable the creation of a virtuous circle between them. These challenges include:

- Achieving universal and affordable access to world-class Internet infrastructure and services.
- Equipping Canadians with the knowledge and skills they need to participate and prosper in the digital economy and global information society.
- Ensuring a stable and secure online environment for individuals and organizations in the private and public sectors, through effective management of critical Internet resources and protecting the privacy and other rights of Internet users.
- Promoting Internet-enabled innovation in business, government, education, and health care.
- Promoting digital inclusion of all communities and segments of the Canadian population.
Messages to the global Internet community

In preparing a Canadian perspective on Internet governance issues for presentation to the next meeting of the UN Internet Governance Forum, it is worth noting that the main messages emerging from the CIF closely parallel the key themes that will frame discussions at the September 2011 Nairobi IGF. This suggests that in spite of the differences that exist in levels of development, most countries face similar Internet governance challenges and can benefit from exchanging information on their national experience and approaches. In particular:

- The relationship between digital literacy and economic development articulated by CIF participants suggests that a similar relationship may exist between development and capacity-building — the two major cross-cutting themes identified for the Nairobi IGF — in spite of the differences that exist between a developed country like Canada and the developing countries that make up the majority of IGF participants.
- The overarching Internet governance challenges that emerged from the CIF process largely match the themes that will structure discussions at Nairobi. These themes include access, diversity, security, openness, privacy, and the management of critical Internet resources.

Issues to be addressed

The main messages that emerged from the CIF process concerning the close connections between economic development and digital literacy, along with the need to address a number of fundamental Internet governance challenges in order to create synergies between these policy domains, provide a point of departure for an ongoing public conversation among Internet stakeholders about the role of the Internet in Canada’s future.

Against this background, participants in the CIF process identified a number of specific issues to be addressed by decision-makers in the public, private and not-for-profit sectors. As reported in the documents annexed to and referenced in this paper, many of these issues initially emerged in the regional and online consultations that preceded the CIF meeting in Ottawa. Their importance was confirmed and value added as a result of presentations and discussions at the CIF.

Developing a national Internet vision

The last attempt to develop a national vision of the role of the Internet in Canada’s future took place in the mid- to late-1990s, through the work of the Information Highway Advisory Council. Although important aspects of Internet governance — such as e-commerce, privacy, broadband access, and spam — have been subjects of national policy processes in the past decade, there have not been many opportunities for comprehensive public discussion and debate about the role of the Internet in Canada’s future, particularly in light of the many changes that have taken
place in technology, the economy and society during this time, and the increasing role the Internet plays in all areas of national life. One notable exception was Industry Canada’s national Digital Economy consultation that was held in the summer of 2010. At time of writing this paper, the final report from that consultation had yet to be released.

- Participants in the CIF process felt there is a need to develop a national vision of the role the Internet can play in Canada’s future economic and social development, as well as a need for leadership in turning this vision into reality — not just in government, but also in industry, in the scientific and technical community, among academics and educators, and throughout the public and voluntary sectors.
- Participants in the CIF process felt that this vision should be based on the fundamental principles of democratic governance, such as respect for human rights and fundamental freedoms, and incorporate the basic principles that have guided the development of the Internet, such as openness, transparency, multi-stakeholder engagement, and consensus-driven processes.

**Affordable access to world-class Internet infrastructure and services across all of Canada**

Issues related to the goal of achieving affordable access to world-class Internet infrastructure and services in all areas of Canada have received considerable attention from policy-makers and regulators at all levels of government in the past decade. The federal government, the provinces and territories, and some municipalities have funded the build-out of broadband infrastructure in rural and remote areas of the country. For its part, the Canadian Radio-Television and Telecommunications Commission (CRTC) has required incumbent operators to extend access to their broadband networks, and has grappled with issues related to fair competition and pricing for access to Internet services by their retail and wholesale customers. In spite of this attention — or perhaps because of it — issues related to the availability, quality and price of Internet services in Canada were one of the main subjects of discussion throughout the CIF process.

- Participants in the CIF process were concerned that the services available to Canadians lag behind those available in some other countries in terms of download and upload speeds, in absolute numbers and in relation to cost, and saw this as an impediment to Canada’s economic and social innovation.
- They were also concerned about how issues of network neutrality and practices such as bandwidth caps and usage based billing affect the availability, affordability and uptake of Internet services.
- As the Iqaluit consultation confirmed and other consultations recognized, the challenges facing rural and northern Canadians are relatively much greater than those facing people living in other parts of the country — but so may be the opportunities. As a result of climate change and geopolitical trends, the North is being seen for the first time in decades as a focal point for national economic, environmental and security policy, and as central element
of Canada’s identity. The Internet may have the potential to enable more effective responses to the challenges and opportunities facing northern and rural Canadians.

- In seeking to address the needs of rural and northern Canadians, CIF participants pointed out that there are “three Norths” with significantly different needs, and that Internet governance processes need to find a level of granularity that reflects and respects the differences between geographical communities in different regions of the country.

- In looking to the future, and considering various challenges related to the goal of ensuring that Canada has a world class Internet infrastructure, Marc Blanchet, a network engineer at Viagénie, pointed out in his CIF presentation that all remaining IPv4 addresses were recently allocated and suggested there is an urgent need to accelerate the transition to IPv6, which is essential to the stability of the Internet, its future growth, and the continuing capacity of businesses to reach their customers and consumers to access applications, services and content from their suppliers of choice.

Transforming education for the digital age

There are many sources of digital literacy, which often begins quite informally with the direct experience individuals have, along with their families and friends, with computers, smartphones and other devices connected to the Internet. Although it is also developed more formally through educational institutions and in the workplace, for many people the acquisition of digital literacy is largely a self-guided social process.

- Participants in the CIF consultations recognized that the future development of what they variously called the “information economy” or the “creative economy” means that Canadians will need to acquire progressively higher levels of digital literacy — levels that enable them not only to use the tools of the digital economy, but also to understand the impacts of these tools and the opportunities and challenges they present in order to develop creative responses.

- Participants in the CIF reinforced the importance of community access programs in reaching and educating the general public and more marginalized populations, including Canadians living in rural and remote areas.

- Consultation participants also took the view that Canada’s education system has a central role to play in this process, and that it can only play this role if it is transformed through a rethinking of curriculum and pedagogy to take much greater advantage of the Internet to do things such as improving access to knowledge, tailoring learning to individual needs and supporting higher levels of creativity throughout the educational process.

- In her CIF presentation, Dr. Gerri Sinclair, Principal, Gerri Sinclair Group, pointed out the fact that education is a provincial responsibility in Canada creates jurisdictional impediments to developing national strategies for transforming education and developing digital literacy.

- On the upside, though, a number of CIF participants called attention to the potential role of students, particularly at the post-secondary level, as a force for change.
Digital literacy in support of individual rights and responsibilities

Over the past decade, governments in Canada have developed policy and legislation intended to protect the rights of Canadians in the online environment and create confidence in the safety and security of transactions that take place on the Internet. CIRA also ensures the security of the .CA registry. At the same time, Internet service providers have developed industry codes of conduct to address issues related to spam and other online annoyances, and courts have applied existing laws regarding such matters as fraud, child pornography and hate to cases that have arisen online. At time of writing, bills were before the last session of Parliament to give police forces new powers to assist in combating cyber crime.

- In spite of all these actions, participants in the regional consultations consistently identified the safety and security of the Internet as a key issue for Canadian Internet policy. These views were confirmed and amplified by panellists and participants at the CIF meeting.
- CIF participants suggested that whatever laws are in place and whatever resources are allocated to cyber crime investigation and enforcement, the borderless nature of the Internet and the speed at which the Internet evolves mean that individuals need to acquire a level of digital literacy that enables them to assume responsibility for protecting their rights and those they communicate with in the online environment.
- This is a growing challenge in light of the trends and developments that are transforming the Internet and raising new issues with respect to personal privacy, security, identity management and online ethics, particularly for children, youth, the elderly, and other vulnerable segments of the Canadian population. Policies and legislation need to be updated to keep pace with these trends.
- In their presentations to the CIF, Jacob Glick, Google Policy Counsel in Canada, and Dr. Gerri Sinclair, both drew attention to the key role digital literacy can play in helping to create a safe and secure online environment, particularly for children and youth. At the same time, though, Dr. Sinclair drew attention to the challenges posed by current Internet business models and data analytics, and the dangers of “mythologizing our young people as Digital Natives.”

Enabling Internet-based innovation

Like issues related to Internet access, the role of the Internet in enabling innovation throughout the economy and society and in improving Canada’s research and development (R&D) performance has received considerable attention from policy-makers in recent years. At the federal level, the government has put in place measures to motivate private investment in research and development in a number of strategic areas, including information and communication technologies (ICTs); to encourage investment in the uptake of Internet and other ICT equipment by Canadian companies; and, to promote the development of e-commerce, particularly by SMEs. It has also supported the creation of an advanced, high-capacity research and education network to link Canadian universities and encouraged the formation of research networks of excellence in all disciplines — the CANARIE network.
In spite of these efforts, as Jim Roche, President and CEO of CANARIE pointed out in his presentation to the CIF, Canada’s R&D and innovation performance continues to lag that of other advanced economies.

In his keynote address to the CIF, technology visionary Leonard Brody outlined a series of fundamental economic and social transformations that have taken place as a result of the Internet, and urged participants to have the courage to venture to seize the opportunities these changes present.

In line with this advice, participants in the regional consultations previously had suggested it may be timely for the CIF to consider how the evolution of the Internet impacts innovation in R&D, business and public services — particularly trends and developments such as the rise of social networks, user-created content, “open innovation” approaches, “smart systems” for energy, transportation and building management, and the Internet of Things.

Participants in the CIF gave accounts, from personal experience, of the challenges Canadian entrepreneurs face in developing innovative, Internet-based products and services. Limited access in Canada to venture capital was identified by a number of participants as a key obstacle to innovation in Canada.

Development of Canadian digital media and content

The development of world-class digital media and content industries serving domestic and global markets has significantly altered the landscape. In recent years, these industries have begun to develop in several Canadian regions, the Canada 3.0 movement has begun to articulate national goals and strategies for digital media, and content issues have been recognized as pillars of Canada’s digital economy strategy. The trends and developments that are transforming the Internet are lowering the barriers to entry to the digital media and content industries — for example, by enabling user-created content — and opening global market opportunities — such as online games — that Canadian entrepreneurs have been quick to seize.

Conclusion

The CIF was a success. It met its objectives and demonstrated the value that can be added to Internet governance processes by a public forum that provides a space where Internet stakeholders can meet to discuss and debate the public interest in the Internet outside the confines of established institutional structures, with the aim of building consensus on key issues as an input to decision-making in the public, private and not-for-profit sectors.

CIF participants saw its value. They want it to continue, and want action as a result of their participation. A number of suggestions were made during the meeting about how to move things forward, including developing an overall action plan, holding regional forums, and establishing working groups on specific challenges.

The first steps in the process of further developing the CIF are:
Through this report and its supporting documentation, to present the results of the first broad-based, bottom-up, multi-stakeholder discussion of Internet governance opportunities and challenges that has ever taken place in Canada to key Internet actors in the public and private sectors, with the aim of better informing their decision-making processes and policy choices, and getting their feedback on the value the CIF could add to their activities.

To continue and broaden the conversations that were begun in the regional consultations and the February 25, 2011 CIF through the online discussion group that can be accessed at http://cif.cira.ca.

To report the results of the CIF to the sixth meeting of the UN Internet Governance Forum that will take place in Nairobi, Kenya from September 27-30, 2011, with the aim of sharing Canada’s CIF experience with others who have conducted similar processes, learning lessons, and benefitting from their advice.

On the basis of the feedback obtained from all these sources, to report back before the end of 2011 to CIF participants and other members of the Canadian Internet constituency with proposals on how best to move the CIF forward.

CIRA, IISD and MNet thank all those who contributed their time, expertise and insight to the first CIF and to the process that led up to it. We look forward to continuing to work with you to help Canadians discover, understand and realize the incredible opportunities the Internet provides for a better future.