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# Digital Literacy in Canada: From Inclusion to Transformation

A Submission to the Digital Economy Strategy Consultation

July 7, 2010





## ABOUT MEDIA AWARENESS NETWORK / RÉSEAU ÉDUCATION-MÉDIAS

Media Awareness Network (MNet) is a Canadian not-for-profit centre for media and digital literacy. Its vision is to ensure children and youth possess the necessary critical thinking skills and tools to understand and actively engage with media.

MNet provides national leadership in advancing media and digital literacy and contributing to the development of public policy in this area. It is the largest provider of media and digital literacy resources and programs for the K-12 education sector in Canada. In addition, MNet's programs include community resources, public awareness campaigns and research on young Canadians' Internet use. The majority of its resources are a public asset, available through its Web site in both official languages to urban, rural, remote, northern and Aboriginal communities.

## ACKNOWLEDGEMENTS

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Advisory Committee members: Tom Perlmutter, Government Film Commissioner and Chair, National Film Board of Canada; Charles Ungerleider, Professor, Faculty of Education, University of British Columbia; Sheridan Scott, Partner, Corporate, Bennett Jones LLP; Len St-Aubin, Telecommunications and Internet Policy Expert; Tom Jenkins, Executive Director and Chief Strategy Officer, Open Text; Ian Wilson, Strategic Advisor to the Stratford Institute; Phil McRae, Director, Alberta Initiative for School Improvement (AIS), University of Alberta; and Michael Hoechsmann, Assistant Professor, Department of Integrated Studies in Education, McGill University.

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# Executive Summary

Media Awareness Network (MNet) is a Canadian not-for-profit centre for media literacy and digital literacy. MNet has prepared this paper as a formal submission to the Digital Economy Consultation process that was launched on May 10, 2010 by the Minister of Industry Canada, in conjunction with the Minister of Human Resources and Skills Development Canada (HRSDC) and the Minister of Canadian Heritage and Official Languages.

This submission principally addresses the fifth theme of the consultation paper, “Building Digital Skills for Tomorrow”. However, as the consultation paper demonstrates, the topic of skills is a cross-cutting theme. Issues related to development of the skills Canadians need in the digital economy also arise in the sections on innovation, infrastructure, the information and communication technologies (ICT) sector and digital media.

The consultation paper notes that Canada has fallen behind a number of other countries in the development of a digital economy. Countries like the UK, Australia, New Zealand, and most recently the United States, have made digital literacy a cornerstone of their digital economy strategies. If Canada wishes to improve its digital advantage and build sustainable prosperity, we must do likewise.

This submission asserts that there is a connection between Canada’s declining performance in the digital economy and our failure to develop a national strategy that balances investments in technology and infrastructure with investments in the skills and knowledge Canadians need to use ICTs to improve the quality of their lives, increase productivity throughout the private and public sectors, develop innovative products and services, and create new media and digital content.

Digital literacy is that next step which gives Canadians the adaptive abilities they need to participate fully in the global digital society. It guarantees they will benefit from the digital economy and derive new opportunities for employment, innovation, creative expression, and social inclusion.

Attaining this demands a comprehensive national plan to ensure citizens have the resources to learn how to *access, use, understand* and *create* with digital technology. A national digital literacy strategy requires support throughout the K-12 and post-secondary educational systems, as well as programs that offer job training and skills development, drive new business practices, and promote increased public awareness.

Established and internationally accepted definitions of digital literacy are generally built on three principles:

- the skills and knowledge to **access and use** a variety of digital media software applications and hardware devices, such as a computer, a mobile phone, and Internet technology
- the ability to critically **understand** digital media content and applications
- the knowledge and capacity to **create** with digital technology.

The concept of digital literacy expands notions of traditional media literacy and is tailored for today’s dynamic, electronic mediums of communication and interaction. Practical skills form the foundation for the development of





higher-level digital literacy skills that move users beyond participation in the digital economy towards the transformative areas of innovation, constructive social action, and critical and creative thinking.

In addition to the personal benefits of greater opportunities for learning, employment, and enjoyment, a digital literacy strategy will generate significant economic and social benefits for all Canadians.

These include:

- Increased consumer confidence and trust in the online marketplace
- Supporting Canada's capacity to innovate with digital technologies in the general workplace, health-care, and educational sectors
- Supporting the growth of Canada's information and communications technology industries
- Supporting the development of Canadian digital media content

The implementation of a successful strategy for the development of digital literacy skills must have multiple components that address barriers for specific demographics such as: attitude, age, socio-economic status, language, and regional availability of resources. Strategies to increase digital literacy levels must account for these different barriers and, where necessary, implement targeted programs for specific populations and situations.

Evidence and best practice indicate that effective implementation of digital literacy programs should take place in four interlocking spheres of influence: Education, Job Training, Government, and Public Awareness and Community Programs. Efficient facilitation of such an approach demands stewardship at the federal level.

As the lead department in Canada's Digital Economy Consultation process, and the department that has traditionally driven Canada's digital agenda, Industry Canada is well-situated to oversee the establishment of a national plan for digital literacy that draws on the knowledge of the essential contributors to the digital literacy landscape. With the considerable expertise that already exists nationally, and the research and models that have been developed to support digital literacy strategies in other countries, the time is right for Industry Canada to implement a Canadian model for digital literacy skills development as a cornerstone of a national plan for the digital economy.

## Recommendations

To ensure that all Canadians have access to essential training in digital literacy skills and that investments in technology and broadband infrastructure development be balanced by investments in digital literacy skills development, the federal government – most notably Industry Canada, Human Resources and Skills Development Canada and Heritage Canada – should:

1. Immediately create a digital literacy taskforce comprising key stakeholders at all levels of government (both federal and provincial/territorial), as well as those representing business and communities across Canada, to develop a cross-jurisdictional blueprint for a **National Digital Literacy Strategy**.
2. Support the implementation of a national study of students and teachers, to determine, from each of their perspectives, the digital skills that are needed by Canadian children and youth.





3. Within one year host a **Digital Literacy Stakeholder Conference** that brings together a broader group of stakeholders from all four spheres of implementation to develop and launch a coordinated national strategy focused on strengthening digital literacy in Canada as a fundamental cornerstone of the digital economy strategy and to highlight government digital literacy initiatives.

In preparation for this conference, the Digital Literacy Taskforce should:

- Prepare an **inventory of digital literacy programs in Canada**, including those provided by the federal government, provinces and territories.
- Compile an inventory of **digital literacy initiatives currently being implemented in other jurisdictions** such as the UK, Australia, New Zealand, and the US, including rationale, targets, and results to date.
- Review the **results of and the lessons learned** from previous Canadian targeted digital literacy initiatives.
- Review the **current and potential roles of federal departments and agencies** in leading and supporting a whole-of-government approach to the development of digital literacy.
- Develop a **national balance sheet** comparing investments in technology development and infrastructure access with investments in digital literacy.

The Digital Literacy Taskforce should also study the following policy options and prepare recommendations for consideration by the conference. Such options should include:

- Launching a **comprehensive federal/provincial/territorial digital literacy initiative** aimed at fostering digital literacy in:
  - K-12 and post-secondary learning institutions,
  - the marketplace, particularly among small- and medium-sized enterprises,
  - the general public.
- Creating a **national facilitator** for digital media cooperative education programs and placements.
- Establishing **community technology centers** in rural Canada as well as a national program to implement training amongst citizens – especially those who may be regionally, economically or socially disadvantaged.
- Increasing **collaborative research funding and commercialization support** for digital media at the federal and provincial levels, using the program innovations launched by the Social Sciences and Humanities Research Council as a model for action.
- Developing an **online digital portal** that incorporates easy to understand explanations of digital media, tutorials on how to use digital technology, links to relevant government resources, an easy to use forum where users can post questions about digital media, and a community resource section where users can find more information about digital resources in their communities.
- Creating an **online data portal** where public information created across all forms of government and by any public institution is regularly published in a machine-readable format.
- Establishing and maintaining a **digital media knowledge transfer network** for educators and companies to share information on digital media education and job training initiatives.

# Introduction

Media Awareness Network has prepared this paper as a formal submission to the Digital Economy Strategy Consultation process that was launched on May 10, 2010 by the Minister of Industry Canada, in conjunction with the Minister of Human Resources and Skills Development Canada and the Minister of Canadian Heritage and Official Languages.

Before preparing this submission we familiarized ourselves with context, challenges and questions set out in relation to the five themes discussed in the consultation paper, *Improving Canada's Digital Advantage: Strategies for Sustainable Prosperity*.

This submission principally addresses the fifth theme of the consultation paper, "Building Digital Skills for Tomorrow". However, as the paper demonstrates, the topic of skills is a cross-cutting theme. Issues related to development of the skills Canadians need in the digital economy arise in its chapters on innovation, infrastructure, the ICT sector and digital media, as well as in the chapter devoted to digital skills.

Our submission therefore should be seen as addressing the digital economy strategy as a whole. For ease of reference, Annex A presents a list of all the contextual factors, challenges and questions this submission seeks to address. In addition, we have noted major points of linkage throughout.

In preparing this paper, we found ourselves in agreement with the following basic principles and statements of fact set out in the consultation document:

*"For Canada to become a leader in the digital economy, digital skills development must be fostered in all Canadians."*

*"It is essential that all Canadians have the skill sets to be able to access, use and interpret a growing and increasingly complex range of digital information."*

*"Complementary investments in labour, organizational skills, digital skills and other areas are required to realize the full potential of general purpose technologies such as ICT."*

*"There are concerns that a digital skills divide is emerging, where some groups have less access to new technology and are falling behind in digital skills."*

*"This is of particular concern because effective participation in the labour market is increasingly linked to digital competence."*

*"The benefits of obtaining digital skills extend beyond improved work and learning outcomes... Technology is pervasive in our society... and those with impediments are at a disadvantage as it can lead to a lack of access to information, government services, health care and education."*



We also found ourselves in agreement with the following comment made in the consultation document:

*“A significant challenge in determining if Canadians have the skills and competencies required for the digital economy is a lack of a precise understanding of what digital skills are, and how Canada is faring in this regard compared to its competitors.”*

Against this background, and in response to the principles, challenges and questions set out in the consultation document, this submission has four main goals.

1. Section 1, *What is Digital Literacy and Why is it Important?* Provides a more precise understanding of the skills and competencies Canadians require in the digital economy by presenting the concept of “digital literacy”, as well as a model based on this concept that makes it possible to systematically relate the various kinds of digital skills discussed in the consultation paper to each other and to the major challenges facing Canadians in the digital economy.
2. Section 2, *Barriers to Digital Literacy*, identifies the barriers to digital literacy that currently exist in Canada.
3. Section 3, *Digital implementation Strategy*, proposes the implementation of a national strategy aimed at overcoming these barriers and closing the digital skill divides.
4. Section 4, *Recommended Actions, Targets and Timelines*, proposes an action plan for implementing this strategy.

Taken together, these sections provide a comprehensive response to the discussion questions set out at the end of the chapter in the consultation document on “Building Digital Skills for Tomorrow”. In addition, they address the skills-related challenges set out in the chapters on innovation, infrastructure, the ICT sector and digital media. Each section of this paper includes a preface describing its relationship to the themes, challenges and questions contained in the consultation document, as well as marginal notations making specific linkages where appropriate.

The consultation document notes that Canada has fallen behind a number of other countries in the development of the digital economy. As Annex B illustrates, many of these countries have made digital literacy a cornerstone of their digital economy strategies. If Canada wishes to improve its digital advantage and build sustainable prosperity, we must do likewise.

We firmly believe that there is a connection between Canada’s declining performance in the digital economy and our failure to develop a national strategy that balances investments in technology and infrastructure with investments in digital literacy — in the skills and knowledge Canadians need to use ICTs to improve the quality of their lives, increase productivity throughout the private and public sectors, develop innovative products and services and create new media and digital content.

We welcome the opportunity the digital economy consultation provides to call attention to the urgent need to develop a digital literacy strategy for Canada. We are encouraged that the principles set out in the consultation document so clearly support the need for such a strategy. We look forward to discussing the actions that should be taken by all stakeholders in partnership to ensure that Canada regains its leadership position in the development of a sustainable, prosperous digital economy.



# What is Digital Literacy and Why is it Important?

The aim of this section is to respond to the comment in the consultation document that “a significant challenge in determining if Canadians have the skills required for the digital economy is a lack of a precise understanding of what digital skills are and how Canada is faring compared to its competitors.”

This section presents a conceptual framework intended to help policymakers and other stakeholders answer the discussion question “What do you see as the most critical challenges in skills development in the digital economy?”

The framework makes it possible to systematically relate all of the different digital economy skills challenges discussed in the consultation document — including those discussed in the sections on innovation, infrastructure, the ICT sector and digital media.

In today’s digital information age, Canada is at a crossroads. We can either continue with our traditional ways of doing business and educating our students, workers, and citizens, or we can seize the new opportunities generated in the wake of rapid and relentless technological change. The significant economic, social and cultural opportunities that are potentially available to all Canadians, however, can only be capitalized upon if we provide both the framework and the inspiration for establishing a digitally literate population.

In order to adapt to the challenge of balancing our old economic and educational systems with the new networked, mediated ways of doing business and educating our citizens, the issue for Canadians is no longer *if* we use digital technology but *how well* we use it. In short, digital literacy must be the cornerstone of any national digital economy strategy.

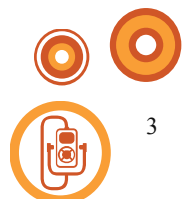
Canada has clearly recognized the importance of ICTs as is evident by the significant investments in broadband and wireless network infrastructure. But building networks is not enough. It is crucial that investment in digital infrastructure and broadband access be mirrored by a focus on investments in digital literacy programs.

*“All Canadians should have access to high-speed networks as digitally savvy citizens, consumers, workers, entrepreneurs and artists.”*

We are pleased that the consultation document recognizes that “complementary investments in labour, organizational design, digital skills and other areas are required to realize the full potential of general purpose technologies such as ICT” (p.13).

We note with interest and trepidation that the 2006 report of the Telecommunications Policy Review Panel estimated the cost of these complementary investments in innovation may be as much as ten times the cost of technology investment.

We also note that, unlike the Information Highway initiatives that were launched in the 1990s, more recent





federal programs have not balanced investments in developing technology and building infrastructure with investments in developing the skills and building the knowledge needed by all Canadians to use ICTs safely and effectively throughout the economy and society.

In our view, one of the fundamental objectives of the digital economy strategy must be to redress this imbalance.

Digital literacy, which goes beyond basic computer skills, is essential to maximize the investments already made in infrastructure and to ensure that Canada continues to move up the productivity ladder and develop a digitally-savvy citizenry. Digital literacy is that next step which gives Canadians the adaptive skills they need to participate fully in the global digital society, protect and advance their interests as citizens and consumers, and guarantees they will benefit from the digital economy and derive new opportunities for employment, innovation, creative expression and social inclusion.

Attaining this transformative step demands a comprehensive national plan to ensure citizens have the resources to learn how to use digital technology. It requires support throughout the K-12 and post-secondary educational system, as well as programs that:

- offer job training and skills development (particularly to small- and medium-sized enterprises in all sectors of the economy);
- drive new business models and practices;
- promote increased public awareness of the opportunities and risks of the online environment; and
- create linkages between digital literacy and the other forms of literacy that are needed in the digital economy, such as financial literacy and identity management capacities.

## **Definition**

Internationally, there is considerable discussion about what it is to be digitally literate.<sup>2</sup> Like other countries which have created digital literacy working groups to define their own standards, we also need to determine the skills required by Canadians to fully contribute to, participate in, and benefit from a digital society.

Digital literacy includes, but goes beyond, simple technology skills. Just as traditional literacy goes beyond comprehension to include the more complex skills of composition and analysis, digital literacy includes a deeper understanding of, and ultimately the ability to create a wide range of content with various digital tools.

Established and internationally accepted definitions of digital literacy are generally built on three principles: *the skills and knowledge to use* a variety of digital media software applications and hardware devices, such as a computer, a mobile phone, and Internet technology; *the ability to critically understand* digital media content and applications; and *the knowledge and capacity to create* with digital technology.<sup>3</sup>

2. For a discussion on these complexities and challenges, see the brief prepared for the Australian Communications and Media Authority by Dr. Robyn Penman and Dr. Sue Turnbull. *Media Literacy—Concepts, Research and Regulatory Issues*. (2007). [www.acma.gov.au/webwr/assets/main/.../media\\_literacy\\_report.pdf](http://www.acma.gov.au/webwr/assets/main/.../media_literacy_report.pdf)

3. National Broadband Plan Connecting America Section 9.3, Digital Britain Media Literacy Working Group Section 3.16, Australia's Digital Economy: Future Directions, p. 44.

*Use, understand, and create* are the three verbs that characterize the active competencies of a digitally literate individual.

**Use** – represents the technical fluency needed to engage with computers and the Internet. This skill set forms the basis for deeper digital literacy development. Essential technical skills include the ability to use computer programs such as word processors, web browsers, e-mail, and other communication tools. In order to develop these skills, Canadians must have access to and be comfortable utilizing equipment and knowledge resources such as broadband services, computers, software tools, Internet search engines, and online databases.

**Understand** – is the ability to comprehend, contextualize, and critically evaluate digital media. Canadians should be aware of the importance of critical evaluation in understanding how digital media content and applications can reflect, shape, enhance or manipulate our perceptions, beliefs, and feelings about the world around us. A critical understanding of digital media enables individuals to reap the benefits – *and* mitigate the risks – of full participation in the digital society. This skill set also includes the development of information management skills and an appreciation of ones rights and responsibilities in regards to intellectual property. In a knowledge economy, Canadians need to know how to find, evaluate, and effectively use information to communicate, collaborate and problem-solve in their personal and professional lives.

**Create** – is the ability to create content and effectively communicate using a variety of digital media tools. Creation with digital media means more than the ability to use a word processor or write an e-mail: it includes the ability to adapt communication to various contexts and audiences; to create and communicate using rich media such as images, video, and sound; and to effectively and responsibly engage with Web 2.0 user-generated content such as blogs and discussion forums, video and photo sharing, social gaming, and other forms of social media. The ability to create with digital media ensures that Canadians are not just passive consumers but active contributors to the digital society.

*“Although students in the past have focused on developing literacy skills such as reading, writing, and numeracy, 21st-century students must develop multiple literacies that will allow them to respond to changing ideas, attitudes, and technologies as their communities and their world evolve.”<sup>4</sup>*

The term “multi-literacies” is increasingly used to describe the various abilities and aptitudes that are needed to correspond with the wide range of communications channels with which we now engage. This concept also recognizes that being literate in a digital world entails not just technological proficiency, but also a wide variety of ethical, social, and reflective practices that are embedded in work, learning, leisure, and daily life.

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4. Government of Manitoba. *A Continuum Model for Literacy with ICT Across the Curriculum*. (2006).



The International Society for Technology in Education (ISTE) has developed a series of digital literacy technology standards and performance indicators that reflect these multi-literacies. In addition to understanding how to use technology, ISTE includes standards for:

- Creativity and innovation
- Communication and collaboration
- Research and information fluency
- Critical thinking, problem solving and decision-making
- Digital citizenship<sup>5</sup>

These standards can be used as a starting point for determining similar outcomes for Canadians.

### ***Digital Literacy Model***

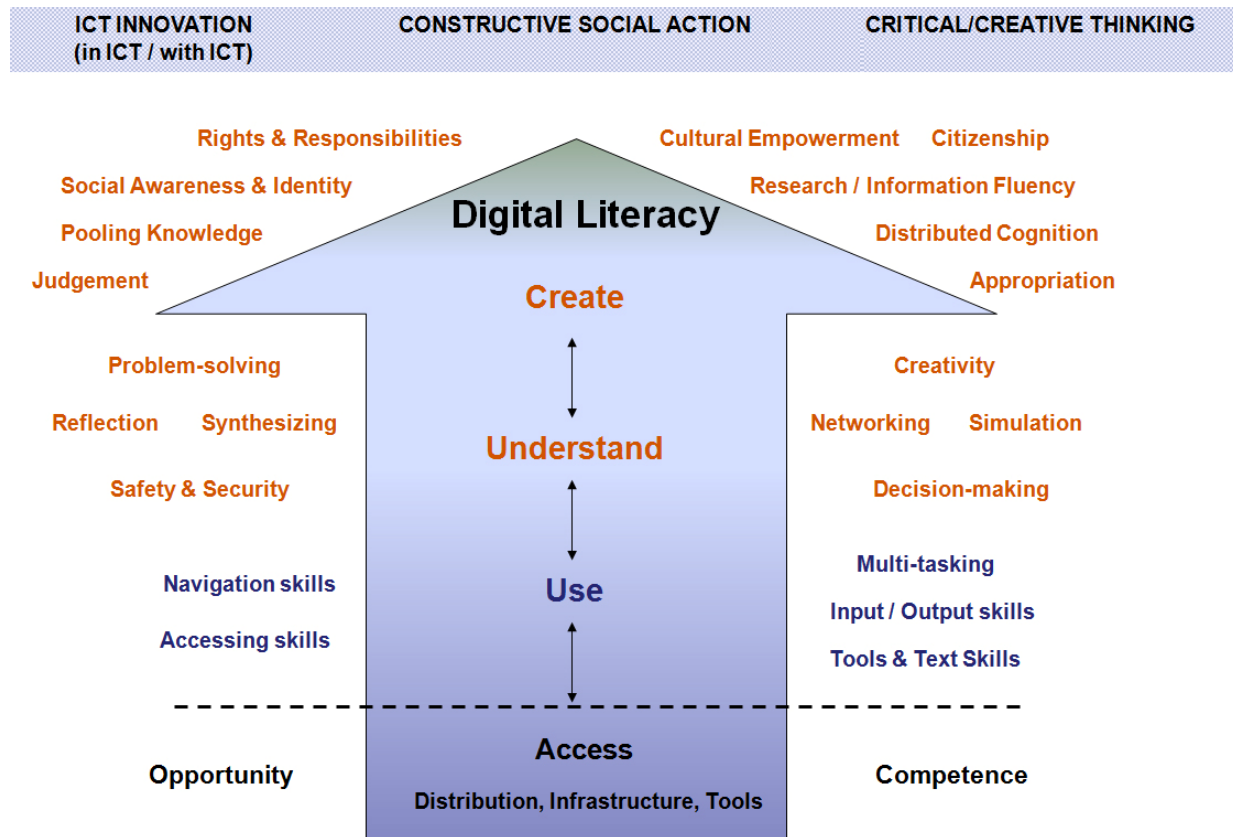
The concept of digital literacy expands notions of traditional media literacy and is specifically suited for this dynamic, electronic medium of communication and interaction. In Britain's national plan, the Digital Britain Media Literacy Working Group positions digital literacy – along with digital life skills and digital inclusion – as an essential component to drive digital participation.

Infrastructure and physical access to the tools are the foundation for digital literacy. To maximize participation, however, investments in infrastructure must be accompanied by investments in training on how to use these tools. In turn these practical skills support the development of the higher level digital literacy skills that move users beyond participation into the transformative areas of innovation, constructive social action, and critical and creative thinking.

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5. National Educational Technology Standards for Students, Second Edition, ©2007, ISTE® (International Society for Technology in Education), [www.iste.org](http://www.iste.org). All rights reserved.

Figure 1: A Model for Digital Literacy<sup>6</sup>



Under the digital literacy umbrella are numerous interrelated skills that range from basic awareness and training to foster informed citizens and to build consumer and user confidence, to highly sophisticated and more complex creative and critical, literacies and outcomes.<sup>7</sup> There is a logical progression in building towards the higher, transformative level; but doing so is not necessarily a sequential process: much depends on the needs of individual users. Given the constantly evolving nature of technology, acquisition of digital literacy skills represents a process of life-long learning.

The concept of digital literacy in the above model can bring coherence, clarity, and precision to discussion about:

6. This figure is based on models from the Report of the Digital Britain Media Literacy Working Group. (March 2009), DigEuLit – a European Framework for Digital Literacy (2005), and Jenkins et al., (2006) *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. <http://www.newmedialiteracies.org/files/working/NMLWhitePaper.pdf>

7. American scholar Henry Jenkins has identified a series of “new media literacies”, core skills and competencies that are needed to be literate in the 21<sup>st</sup> century. Among these are *Simulation*, the ability to interpret and construct dynamic models of real-world processes; *Visualization*, the ability to interpret and create data representations for the purposes of expressing ideas, finding patterns, and identifying trends; *Distributed Cognition*, the ability to interact meaningfully with tools that expand mental capacities; *Collective Intelligence*, the ability to pool knowledge and compare notes with others toward a common goal; and *Transmedia Navigation*, the ability to follow the flow of stories and information across multiple modalities. For a fuller discussion on this, see Jenkins, H. et al. *Confronting the Challenges of Participatory Culture: Media Education for the 21<sup>st</sup> Century*. <http://www.newmedialiteracies.org/files/working/NMLWhitePaper.pdf>

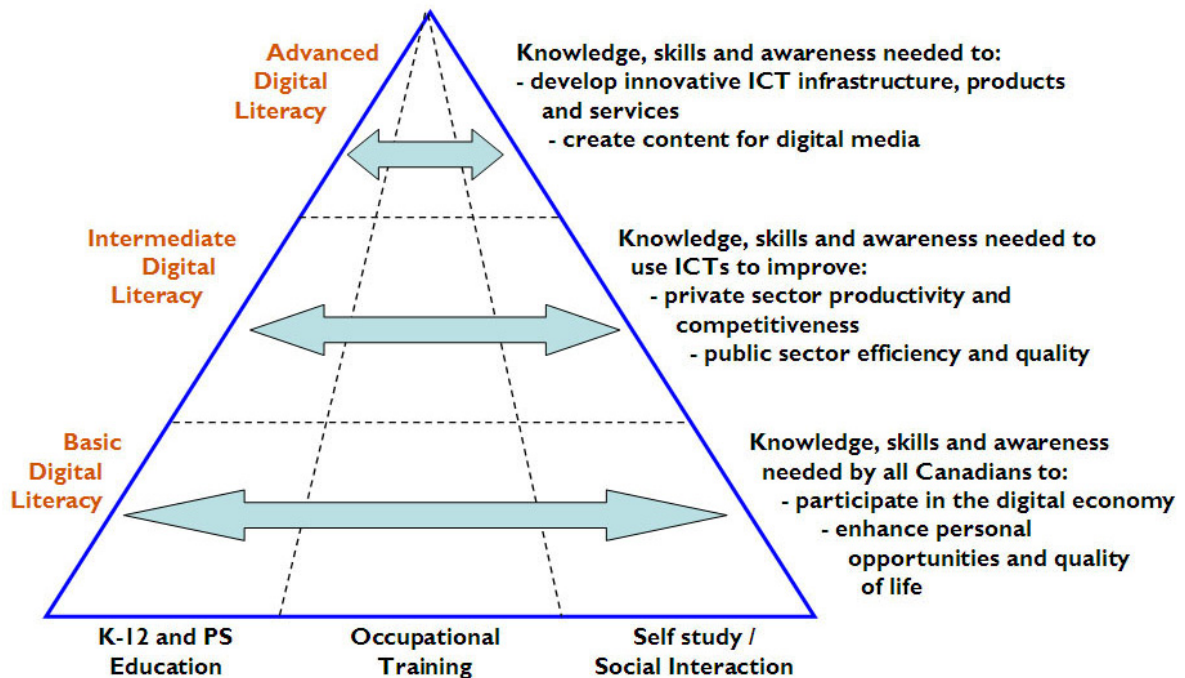


- the various kinds of skills that are needed in the digital economy, as set out by the consultation document in its chapters on innovation, infrastructure, the ICT sector and digital media, as well as the chapter on building digital skills
- the measures that must be taken to foster digital literacy and develop skills in each of these thematic areas
- the roles of different partners and stakeholders
- the cooperative arrangements that are needed to ensure that all Canadians have opportunities to develop and apply digital skills.

From a digital literacy perspective, the basic skills learned through formal education at the primary and secondary levels, and informally through self study and social interaction, are the foundation of the skills subsequently developed through post-secondary education, occupational training, and life-long learning. At the intermediate level, these skills enable Canadians to use and apply digital technologies throughout the economy and society. At the advanced level, they support creativity in the development of digital content and media, and innovation in ICT products and services.

Through the following diagram, these complex relationships can be envisaged and linked to the various sets of digital skills issues discussed under the five themes of the consultation document.

**Figure 2: A Digital Literacy Perspective on Digital Economy Skills Challenges**



A digital economy strategy should address all these dimensions of digital literacy in a comprehensive, coherent, and strategic fashion so that actions taken in different areas by different actors are linked and mutually reinforcing.

*“Broadband lines, PCs, advanced corporate data networks, and advanced use of wireless data services are certainly measures of connectivity, but so are human skills relevant to the usage of these infrastructures, technologies, and networks.”<sup>8</sup>*

A multi-stakeholder, networked approach to digital skills development will ensure Canada gets a greater return from the significant investments Canadians already make in education, training, and skills development through taxes, through direct investment of their own resources in learning opportunities, and as an overhead cost of many private and public sector activities.

## **Benefits of Digital Literacy**

As indicated in *Figure 2*, a comprehensive national digital literacy strategy will address the skills-related challenges set out under the different themes discussed in the consultation document. It will generate significant economic and social benefits for all Canadians, in addition to the benefits that accrue to individuals in the form of greater opportunities for learning, employment, and enjoyment.

These benefits will include:

- Greater awareness among Canadians of all ages, particularly youth, of the financial, personal, and other risks of the online environment and enhanced capacity to deal with the annoyances and threats it presents — thereby **increasing consumer confidence and trust in the online marketplace**, a necessary precondition to the development of e-commerce, digital media, government online and other aspects of the digital economy.
- Enhanced capacity to remain abreast of technology developments and use technology effectively to increase productivity and competitiveness in all sectors of the economy, particularly among small- and medium-sized enterprises, as well as to improve the quality and efficiency of education, health care, and other public and government services — thereby **supporting Canada’s capacity to innovate using digital technologies**.
- Enhanced capacity to develop innovative networks, products, and services for the rapidly growing ICT marketplace in Canada and internationally through the increased development and retention of highly-qualified personnel — thereby **supporting the growth of Canada’s information and communications technology industry**, and providing home-grown solutions to the challenge of building a world-class digital infrastructure that is accessible and affordable to all.
- Enhanced capacity for Canadians who may be socially, geographically or economically disadvantaged or excluded to participate in and benefit from the digital economy — thereby **bridging digital divides and building capacity amongst all Canadians**.
- Enhanced capacity among users, entrepreneurs, enterprises, and national cultural institutions to create digital content that informs, enlightens, entertains and reflects the Canadian experience — thereby **supporting the development of digital media that will create Canada’s digital content advantage**.

**Annex C** provides a detailed discussion of the benefits digital literacy brings to Canada’s economy and society, as well as to individual Canadians.

8. Waverman, L. (2010). Connectivity Scorecard 2010. <http://www.connectivityscorecard.org/images/uploads/media/TheConnectivityReport2010.pdf>



# Barriers to Digital Literacy

The consultation document recognizes that for Canada to become a leader in the digital economy, digital skills development must be fostered in all Canadians, so that they have the capacity to access, use, and interpret a growing and increasingly complex range of digital information. It also recognizes that a digital skills divide is emerging, where some groups have less access to new technology and are falling behind in digital skills.

The aim of this chapter is to set out the main social, economic, geographic, and demographic barriers that exist to universal digital literacy in Canada today. It complements the conceptual framework presented in the previous section by providing a concrete response to the discussion question, “What do you see as the most critical challenges in skills development for a digital economy?”

Implementation of a successful strategy for the development of digital literacy must have multiple components that address the various barriers specific to different demographics.

There are multiple barriers to literacy: attitude, age, socio-economic status, language, and regional availability of resources. Strategies to increase literacy levels must account for these different barriers and, where necessary, implement targeted programs for specific situations.

## ***Age Misconceptions***

There is no denying the discrepancy in Internet use based on age: in 2009, 98 per cent of Canadians ages 16-24 were online, compared to 66 per cent of those aged 45 or older.<sup>9</sup> At the same time, it is important to note that the older age group accounted for 60 per cent of new Internet users – which presents opportunities for cultivating digital literacy skills.

In the past, distinctions between users of technology were made purely along the lines of age. Most notably Mark Prensky, in his paper *Digital Natives, Digital Immigrants*,<sup>10</sup> argued that those born in to the era of computing had a natural advantage in using technology, as opposed to those who were born earlier and adopted technology at a later age. Prensky’s distinction has increasingly come under attack mainly because it implies that the digital native is born into a computer culture and does not have to learn any skills to successfully adapt to both the benefits and risks of the digital age. It also suggests fluency with technology that not all children and young adults have, and a corresponding clumsiness and unfamiliarity with digital technology that not all older people display. Moreover, this distinction is not particularly useful because as with any medium of communication – whether it be writing or reading or speaking – an individual must still acquire the necessary skills in order to use digital media technologies effectively. There is too much diversity within an entire generation to simply categorize it as being naturally digitally savvy.

9. Statistics Canada Internet Usage Survey (May 2010). <http://www.statcan.gc.ca/daily-quotidien/100510/dq100510a-eng.htm>

10. From *On the Horizon*, (MCB University Press (Vol. 9 No. 5, October 2001)).



The argument against the de facto existence of a generation of digitally fluent youth is supported by research into how young people use digital media. A recent survey of 4,374 students across 13 institutions revealed that the majority of them own computers (93.4%) and use them for word processing (99.5%), e-mail (99.5%) and web browsing (99.5%). But, the researchers found that only a minority of the students (21%) were engaged in creating their own multi-media content.<sup>11</sup> This evidence suggests that assumptions about this generation of “digital natives” are misguided.

More importantly though, simply because someone knows how to use a software program or an electronic communications device does not mean they fully understand the context within which it operates or the content it may be capable of producing. Employing the distinction of digital native and digital immigrant suggests an abdication of responsibility of the older generation toward the younger generation in terms of education; it is a decidedly unhelpful concept when considering the penchant of youth to use technology without considering its personal or social implications, ethics, or risks.

Rather than focusing on “natives” or “immigrants”, *The Report of the Digital Britain Media Literacy Working Group* has developed strategies for strengthening digital literacy levels based on a series of attitudinal archetypes: Engaged, Economisers, Pragmatists, Hesitants, and Resisters.<sup>12</sup> As illustrated in Annex D, attitudinal differentiation provides a richer canvas for us to understand the complexities of implementing digital literacy programs and the specific and diverse types of initiatives necessary to increase literacy levels.

## Geography

Canada is a vast landmass, with a few large urban centers along its southern border with the United States and many small towns scattered amongst rough terrain. The two main issues that rural Canada must conquer regarding digital literacy are barriers of access and attitude. The culture of rural Canada and the cost and difficulty in building digital infrastructure to serve these communities pose significant obstacles to Internet adoption. The issue of access is one of infrastructure, with broadband connectivity in rural areas a clear driver of use.<sup>13</sup> But deploying more infrastructure is not enough to bridge the digital divide between rural and urban Canada. When one analyzes Internet usage models that account for all other factors such as income levels, education, and age, “rurality, is still a significant determinant in and of itself.”<sup>14</sup>

Even with an increase in infrastructure, further efforts are needed to support digital literacy in rural environments because, unlike their urban counterparts, the economies of rural and remote communities are not typically supported by information-technologies. Moreover, as broadband infrastructure proliferates, the digital divide goes beyond access and connectedness to include second level usage divides relating to cultural attitudes and levels of education.<sup>15</sup> The Organisation for Economic Co-operation and Development report on *Broadband and ICT Access and Use by Households and Individuals* describes “the Internet [as] a media, a window open to the world, and as

11. Benne et. al. *The ‘digital natives’ debate: A critical review of the evidence* (2010), p. 3.

12. Section 5.6. An alternative attitudinal breakdown used by the FCC in the report on Broadband Adoption and Use in America (pg. 6) is Digitally Distant, Digital Hopefuls, Digitally Uncomfortable, Near Converts. The age and types of barriers to adoption are similar to the categories and analysis we use above.

13. Statistics Canada. *Factors Associated With Internet Use: Does Rurality Matter?* (September 2007), p. 9.

14. Ibid.

15. OECD Broadband and ICT Access and Use By Households and Individuals, p. 37.



such, implies a complex interaction with the user which goes beyond the tool itself.”<sup>16</sup> This complexity of interaction supports the argument that digital literacy initiatives must address particular cultural influences and attitudes as well as pervasive geographical barriers to broadband deployment if our goal is to provide universal Internet access for all Canadians.

An interesting example of digital literacy initiatives targeting rural communities can be found in Australia, where a series of programs led by various levels of government has been designed to meet the unique needs of rural populations.<sup>17</sup> One such program has been the establishment of community technology centers, which act as the main avenue for providing local training and service delivery. The centers use technology as a platform for many community events, projects, and educational programs. Services offered include the provision of communication infrastructure such as broadband Internet, e-mail videoconferencing and other online services, education and training, technical support, computer maintenance, and online government solutions for all tiers of government.<sup>18</sup>

In a Canadian context, a similar approach is necessary. In conjunction with the deployment of broadband infrastructure, other measures – such as digital skill building programs and additional communications infrastructure – are required to ensure that when rural communities are connected, they have the resources to effectively use broadband technology. The establishment of community technology centers in rural Canada would provide the necessary resources to support and motivate those who may be hesitant to use digital technology and enable them to participate more fully in the social and economic benefits afforded by access to broadband infrastructure. These centres would also facilitate further participation in digital culture for engaged users.

## **Socio-Economic**

Socio-economic factors are the most significant barriers to digital literacy; indeed the socio-economic digital divide is unquestionably significant in Canada. The *Internet Usage Study* from Statistics Canada reports that 94 per cent of individuals in the top income quintile (more than \$85,000 per annum) used the Internet while only 56 per cent of individuals in the lowest quintile (less than \$30,000 per annum) report Internet use.<sup>19</sup> Similarly, the February 2010 Federal Communications Commission report on broadband adoption and use in America cites cost as a main factor for not having a high-speed Internet connection.<sup>20</sup>

Providing access to broadband for lower income groups is only the first step toward digital engagement. It is not enough to simply provide the technical resources for lower socio-economic groups: we must also provide complementary resources to support literacy. These resources could be in the form of classes, and text-based and audio-visual materials, with classes and materials delivered online as well as in schools, libraries, and community centers.

An example Canadians might well consider is the recommendation of the recent FCC National Broadband report calling for the establishment of a Digital Literacy Corps, a publicly funded initiative modeled after President John F. Kennedy's Peace Corps, to educate minority, rural, and other disadvantaged citizens on the use and importance of computers and Internet services. The proposed Digital Literacy Corps would also provide skills training and

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16. Ibid.

17. Audit of Australian digital media literacy programs p. 2.

18. Ibid p.4.

19. Statistics Canada Internet Usage Study. (May 2010). <http://www.statcan.gc.ca/daily-quotidien/100510/dq100510a-eng.htm>

20. Thirty-five per cent of non-adopters cite cost as the reason. Fifteen per cent say it is the price of a monthly subscription, ten per cent say it is the cost of a computer. *Broadband Adoption in America* (February 2010), p. 5.

outreach in neighbourhoods with low rates of broadband adoption and train workers at libraries and community centers on Internet basics so they too can provide digital literacy training.

*“INDIGENOUS COMMUNITIES: While Indigenous communities face many of the same issues as rural communities and those who are socially and economically disadvantaged, their unique cultural context and existing literacy level challenges must also be taken in to consideration when developing digital literacy programs. Once again, Canada can learn from Australia which has developed programs designed specifically for Indigenous communities. These programs focus on equipping communities and schools with the technology and skills necessary for effective use of digital media and communications.<sup>21</sup> Often these programs overlap with the Community Technology Centers of rural communities.”*

## **Bilingualism**

There is no doubt that the Internet is dominated by the English language. On the surface, this fact does not bode well for the promotion of Canada’s other official language French, and it has been observed that monolingual French-speaking Canadians use the Internet less than their bilingual counterparts.<sup>22</sup> However, as innovative technological solutions are developed this situation may not be long-term. With the advancement of translation services like Google Translate<sup>23</sup> that translate entire websites with a few clicks, the challenges of multi-language comprehension will continue to diminish.

Nonetheless, we must develop effective French language digital literacy programs specifically targeted for Francophone Canadians to ensure they have access to knowledge and skills to use, understand, and create with digital media tools.

*“From 1998 to 2008, the Francommunautés virtuelles Program at Industry Canada allocated funding to Francophone and Acadian organizations to develop French-language content, applications, and services on the Internet, and to encourage the development and use of ICTs in their communities. During that time 46 websites were created, along with French-language content for a further 203 sites, and more than 3,000 people received ICT training. Best practices from this program could be emulated and built upon.”<sup>24</sup>*

21. Audit of Australian digital media literacy programs. (July 2009), p. 16.

22. Gandal, Neil, The Effect of Native Language on Internet Usage (November 2002). CEPR Discussion Paper No. 3633. Available at SSRN: <http://ssrn.com/abstract=359620>

23. <http://translate.google.com>

24. Industry Canada, Final Evaluation of the *Francommunautés Virtuelles* Program, 2008.



We can also recognize the enormous opportunity digital media present for maintaining language use and preserving cultural heritage. For example, the read/write functionality of Web 2.0 social media has already accounted for an increase in Internet usage in French-speaking Canada. Digital media also offers a tremendous opportunity<sup>25</sup> for the easy production, distribution, and consumption of French language content. As David Crystal points out in his book *Language Death*,<sup>26</sup> an endangered language will make forward strides if its speakers can make use of electronic technology. Promoting digital literacy is central to maximizing the opportunity presented by user-generated content to strengthen French language content and use. It is the third element of digital literacy – the ability to create – that is essential for French-speaking digital media users.

It is also clear that the power of the read/write web extends to benefits for Canada’s immigrant population. Digital literacy amongst new Canadians enables them to both engage further in Canadian society and actively preserve their native languages and cultures.

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25. Cunliffe, Daniel. Hypermedia Research Unit, School of Computing, University of Glamorgan, Pontypridd, Wales, UK. *Promoting minority language use on bilingual Websites*. “It can be argued that the presence of a minority language in this new mass medium will become as important to language survival as having a presence in traditional mass media.” p. 2.

26. Crystal, David (2000), p. 141.

# Digital Literacy Implementation Strategy

This section builds on the conceptual framework and concrete analysis set out in the previous sections to respond to the following discussion questions:

- What is the best way to respond to the most critical challenges in skills development for a digital economy?
- What is the best way to address these challenges?
- What can we do to ensure that labour market entrants have digital skills?
- What is the best way to ensure the current workforce gets the continuous up-skilling required to remain competitive in the digital economy? Are different tactics needed for SMEs versus large enterprises?
- How will the digital economy impact the learning system in Canada? How we teach? How we learn?
- What strategies could be employed to address the digital divide?

For ease of reference, our responses to these questions have been noted in the margins.

Over the past year there has been considerable high-level dialogue on what Canada needs to do to remain competitive in a digital world.<sup>27</sup> Fuelling these discussions is the awareness that other nations are developing action plans to strengthen their digital economies, and the recognition that if Canada is to remain competitive and regain a leadership role internationally, a similar strategic focus and action plan is needed here.<sup>28</sup>

Up until now, much of the dialogue that has taken place in Canada has focused on infrastructure development, use of ICTs to promote business innovation, and ways to ensure a stronger, safer online marketplace.<sup>29</sup> Media Awareness Network, along with stakeholders from government, academia, councils on learning, ministries of education, industry organizations, library associations, and institutes for information technology and digital media, believes that a much broader approach is needed if we are to cultivate a digitally literate and economically competitive country.

Research and international precedent indicate that digital literacy supports participation, inclusion, and innovation in a knowledge economy. For example, government initiatives for the digital economy from the UK ([Digital Britain](#)), New Zealand ([Digital Strategy 2.0](#)), Australia ([Future Directions](#)) and the United States ([National Broadband Plan: Connecting America](#)) have positioned digital literacy as a crucial component of a knowledge economy. Each recognizes acquisition of digital literacy as an “essential life skill” which represents a process of life-long learning that incorporates K-12 and post-secondary education, vocational training, and public awareness campaigns.

27. Previous to the *Speech from the Throne*, there have been discussions between industry leaders, government officials and academics at the Stratford Institute’s [Canada 3.0 Forum](#); as well the Government of Canada’s forum [Canada’s Digital Economy: Moving Forward](#).

28. Background Paper. Canada’s Digital Economy: Moving Forward. [http://www.ic.gc.ca/eic/site/ecic-ceac.nsf/vwapj/background\\_paper.pdf/\\$file/background\\_paper.pdf](http://www.ic.gc.ca/eic/site/ecic-ceac.nsf/vwapj/background_paper.pdf/$file/background_paper.pdf).

29. Ibid.

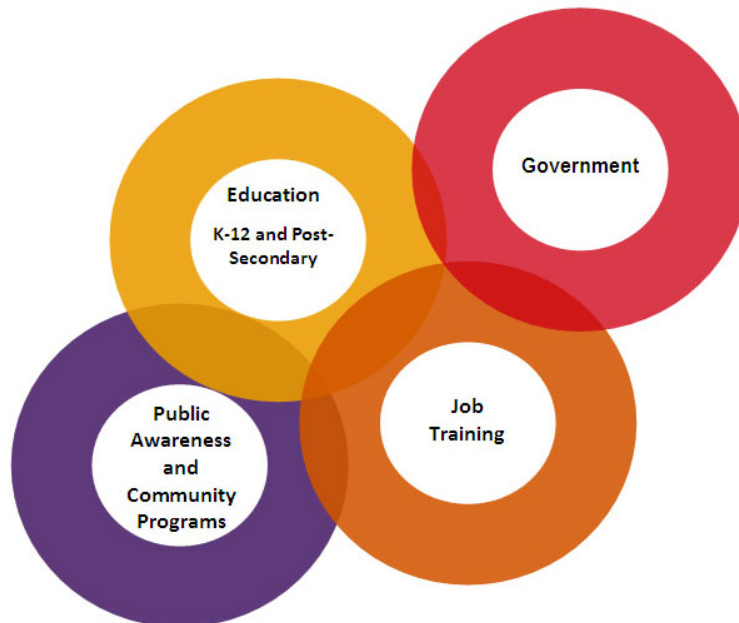




We believe that Canada should be in step with these forward-thinking countries who are implementing comprehensive digital literacy strategies, starting at the elementary school level and continuing throughout the lifespan, in order to broaden participation in, and uplift standards for, production and consumption in the Canadian knowledge economy.

Evidence and best practice indicate that effective implementation of digital literacy programs should take place in four interlocking spheres of influence: Education, Job Training, Government, and Public Awareness and Community Programs. Each sphere relates to a different segment of the population and expresses different attitudes and needs; only through an integrated approach operating simultaneously within each implementation sphere will widespread digital literacy become a reality.

What is the best way to address the most critical challenges in skills development for the digital economy?



## Education

Education at all stages of life is central to any digital literacy strategy. Although there has been considerable dialogue among stakeholders leading up to this consultation on the importance of skills development at the post-secondary level, very little discussion has taken place on the ICT and digital literacy skills that need to be cultivated among students *before* they enter college or university. In this section, we will highlight the importance of implementing digital literacy into Kindergarten to Grade 12 education as part of Canada's national plan.

How will the digital economy impact the learning system in Canada? How we teach? How we learn?

Digital media are an omnipresent reality for today's youth. From cell phones to iPods to video games to computers, digital media touch every aspect of students' lives. Digital activities popular with youth may appear to be child's play, but research indicates that these digitized toys and pursuits help young people develop a wide range of aptitudes and skills that are needed in a digital economy.<sup>30</sup> It is, therefore, imperative that their educational experience acknowledges this reality. Education of our youth must not only utilize technology, but also provide the education necessary for young people to safely, effectively, and responsibly engage with digital media.

In elementary school many students already have basic technological skills and a comfort level with digital media. What is often sorely lacking, however, is depth of understanding. It is these critical awareness skills that educators have a core responsibility to provide to youth.

Technology in the classroom can be used to facilitate interpersonal learning between students and teachers and students and peers.<sup>31</sup> It is not intended to replace these essential learning relationships but rather be used to provide platforms for collaboration and tools for organization. Educational digital media can also enhance the teaching and learning experience through its unique ability to engage and provide feedback to users, adapt to unique user situations, and track student progress.<sup>32</sup>

*"We are evolving towards a much more robust information system where groups working together can solve problems that are far more complex than can be confronted by individuals. And schools can actively prepare students for such a world – by allowing them to develop and refine their individualized expertise, by providing complex problems which require collective effort to resolve, by teaching them the ethics involved in working in such a highly collaborative and open-ended context."*<sup>33</sup>

Excluding digital media from schools creates a potentially damaging split between educational and personal experience. Digital media are a knowledge technology; keeping them out of the classroom creates a significant dissonance in how youth gather and share knowledge. Bridging the home and school continuum in this regard is fundamental to shaping a comprehensive educational approach.

Beyond teaching students *about* digital media, interactive multimedia tools should be integrated into the curriculum. The UK-based *Independent Review of the Primary Curriculum* argues that it will become "increasingly important that children have the ICT skills which will enable them to apply the technology of the future and meet the challenges of an uncertain world with confidence and flexibility. A sound grasp of ICT is fundamental to

30. Lankshear, C., Knobel, M. (2003). *New Literacies: Changing Knowledge and Classroom Learning*. Philadelphia: Open University Press. Knobel, M., and Lankshear, C. (eds.) (2007). *A New Literacies Sampler and Digital Epistemologies*. New York: Peter Lang Publishing.

31. Dr. Phillip McRae Executive Staff Officer Alberta Teacher's Union. Phone interview. January 29, 2010.

32. Collins, Allan, and Richard Halverson. "What May Be Lost and What May Be Gained." *Rethinking Education in the Age of Technology: The Digital Revolution and Schooling in America (Technology, Education--Connections (Tec)) (Technology, Education-Connections the Tec Series)*. New York: Teachers College Press, (2009). pp. 109-111.

33. Jenkins, H. (2010). *Learning in a Participatory Culture: A Conversation About New Media and Education*. [http://henryjenkins.org/2010/02/\\_children\\_and\\_young\\_people.html](http://henryjenkins.org/2010/02/_children_and_young_people.html)



engagement in society, and the foundations for this engagement must be laid in primary schools. Along with literacy and numeracy, the use of technology to develop skills for learning and life should be at the core of the primary curriculum.”<sup>34</sup>

The report goes on to call for digital literacy to be taught both discretely as well as integrated into other curricula. Digital media should be used to invigorate all domains of learning including traditional literacy and numeracy. Teaching digital media across the whole curriculum will deepen understanding of both the subject matter at hand and increase levels of digital literacy.<sup>35</sup>

*“In Manitoba’s A Continuum Model for Literacy with ICT Across the Curriculum (K-12), a distinction is made between ICT literacy, which encompasses the skills for using digital technology effectively (digital life skills), and literacy with ICT, where youth select and use digital technology to support critical and creative thinking about information and about communication (digital literacy skills). The framework notes: “ICT literacy is a critical component of literacy with ICT, but is not sufficient in itself.”<sup>36</sup>*

The challenge of cross-curriculum or ‘whole curriculum’ technology integration is to ensure that digital media do not distract from core learning objectives.<sup>37</sup> It is therefore imperative that teachers be given the pre-service training and professional development opportunities necessary to integrate digital media into the classroom and to develop the “psychological space” needed for students to be creative and experiment with them. The overarching goal is to instil a combination of technical and critical thinking skills in teachers, who will then be much better equipped to impart them to their students.

*“Teachers in many schools are using technology to support different learning styles and engage all learners... What is missing is a comprehensive set of guidelines for all teachers that describes how they should use technology to: promote innovative thinking and collaborative work; incorporate rich digital resources into student learning; employ varied assessment methods that can in turn improve learning; model ethical practices in the digital age; and strengthen their own professional development.”<sup>38</sup>*

The challenge in Canada is to determine how the Federal government can promote a comprehensive digital literacy strategy when education falls under provincial jurisdiction. A digitally literate population is a matter of national prosperity and as such, a digital literacy strategy encompassing all Canadians requires support on the Federal level.

34. *Independent Review of the Primary Curriculum*, p. 15.

35. *Ibid*, p 43

36. Government of Manitoba. *A Continuum Model for Literacy with ICT Across the Curriculum*. (2006), p. 8.

37. Dr. Michael Hoehsman, Professor McGill University. Phone interview. February 5, 2010

38. Ontario Public School Boards Association (2009). *What if: Technology in the 21st Century Classroom*.



The Industry Canada program SchoolNet, which sunsetted in 2008, was a partnership between federal, provincial and territorial governments, the education community, and the private sector to promote the effective use of information and communications technologies in learning. This program might provide a model on how the Government of Canada could partner and move forward with educational stakeholders in promoting digital literacy.

Another model from the UK that could be adopted in Canada is Futurelab, an independent not-for-profit organization that is dedicated to transforming teaching and learning to make it more relevant and engaging to 21<sup>st</sup> century learners. In order to support educators in adopting new teaching practices, Futurelab partners and collaborates with various educational stakeholders from policy, industry, and research and practice communities.<sup>39</sup>

In the United States, the government’s approach to facilitating and guiding education has been to position the White House as a convener, facilitating small meetings of stakeholders, (less than 100 people) with clear actionable deliverables articulated at the conclusion. To ensure a coordinated and comprehensive approach to digital literacy skills development that builds on and supports national standards for digital literacy for all citizens, the Canadian government should facilitate regular gatherings that bring together representatives from ministries of education and faculties of education who are involved in digital literacy curriculum development and/or pedagogy and design. And their findings should feed into a larger conference with all stakeholders.

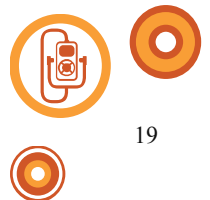
## Job Training

The skills needed to effectively participate in a knowledge-based digital economy include the capacities to find, organize, understand, evaluate, create, and share information through constantly evolving digital technologies – technologies and innovations that demand continual learning and re-learning. After individuals start their careers, it is imperative that they are provided with the resources to continue developing their digital literacy skills. The economic benefits of a digitally literate workforce have been well demonstrated and these skills must be continually augmented and sustained in order to fully realize the benefits of digital media in the workplace.

What is the best way to ensure the workforce gets the continuous up-skilling required to remain competitive in the digital economy?

*According to the ongoing “Connectivity Scorecard” study, which measures and then ranks 50 countries based on connectivity of ICT’s and how this contributes to economic performance, Canada ranks 9th in the world. Notes study creator Dr. Leonard Waverman, “half of the productivity gap between Canada and the United States [which scored highest in the results] can be attributed to Canadian businesses’ lower digital literacy.”*

39. <http://www.futurelab.org.uk/>





It is important to recognize that even workers who are familiar with digital media technologies do not necessarily have appropriate skills for the workplace.<sup>40</sup> Therefore, workplace specific programs must be supported by public resources and implementation encouraged at the industry level. Industry needs to be given both the resources and the reason to support digital literacy for their workers. Current government training offerings must be expanded and provided in an easily accessible online format. Digital labour training programs must not only focus on basic usage but also on understanding and creating digital media.

Fostering and promoting digital literacy among small and medium-sized enterprises (SMEs) is a particularly important challenge. SMEs make up more than 99 per cent of the business establishments in Canada, employ a substantial portion of the Canadian work force, and are a major source of job creation. However, compared to large enterprises and public institutions, SMEs have been slow to adopt digital technologies in their internal operations, establish a web presence, and move their businesses online by developing advanced e-commerce capabilities. As the global digital economy continues to grow, this leaves SMEs — and the many Canadians who depend on them for their livelihoods — vulnerable to foreign competition in the Canadian market, and may exclude them from opportunities to participate in the global supply chains of major multi-national enterprises.

Are different tactics  
required for SMEs  
versus large  
enterprises?

From 2002-04, the Canadian e-Business Initiative (CeBI) examined the extent to which SMEs had adopted digital technologies and Internet business solutions in considerable depth through surveys and focus groups. CeBI found that there were a number of barriers to digital adoption by Canadian SMEs — including, cost, time, and uncertainty about return on investment — and that patterns of adoption and perception of barriers varied by firm size and industry sector.

However, as reported in the final CeBI report, *Fast Forward 5.0*, issues related to digital literacy were a common problem facing many SMEs. These issues included lack of knowledge about digital business solutions, difficulty in attracting and retaining personnel with digital skills, and the challenges of managing business process transformation and product and service innovation through the application of digital technology. CeBI concluded that SMEs themselves, along with colleges, universities and other stakeholders had to become more engaged in building digital literacy among SMEs.

Since CeBI completed its work, similar findings and recommendations have been made in the 2006 report of the Telecommunications Policy Review Panel, the 2007 National Roundtable on the e-Economy, and the 2009 Forum on the Digital Economy. A common theme of all these previous discussions has been the need to develop innovative initiatives that will meet the digital literacy needs of SMEs while recognizing the significant differences that exist, not only between large scale and smaller enterprises, but among firms of different sizes and in different industry sectors.

This is a complex challenge. However, the time has clearly come to include action on developing greater digital literacy among SMEs as a cornerstone of the digital economy strategy. Governments can play an important role in meeting this objective by identifying and implementing initiatives to promote greater digital literacy through appropriate incentives and programs that support economic and regional development and human resource training.

40. Summary of international reports, research, and case studies of digital literacy p.24.

A central consideration of a national e-strategy must also be digital literacy training for new Canadians. Many immigrants to Canada have had minimal access to digital technologies and would benefit greatly from increased exposure and training with these tools. Digital literacy support for this population segment would work to both bridge the digital divide and facilitate economic and social integration. Indeed, providing digital literacy skills to new Canadians should be a central consideration of a national digital economy strategy and consequently, should also be at the foundation of all job training programs.

What can we do to ensure that labour market entrants have digital skills?

## Government

The federal, provincial, and territorial governments have a number of roles in supporting digital literacy. In addition to being strategic drivers and resource providers for digital media initiatives within their respective jurisdictional spheres, all governments have a responsibility to facilitate digital literacy through e-government programs and public service employee training. As public services continue to migrate to digital platforms and more political dialogue takes place online, citizens lacking in digital literacy skills are at risk of becoming disenfranchised from the democratic process and excluded from public services.<sup>41</sup>

Beyond the general responsibilities shared by all governments, the federal government has a particular role to play in devising a national, whole-of-government approach. This approach will foster a more competitive, productive and innovative economy and strengthen Canada's presence in the digital media sector by supporting development of the capacities, skills and abilities Canadians need to excel. Industry Canada, Heritage Canada, and Human Resources and Skills Development Canada (HRSDC) have central roles to play as the three departments leading the development of a national digital strategy. To succeed, however, they will need the active cooperation and support of other federal departments and agencies, including those with regional development responsibilities.

The need for strong leadership and a whole-of-government approach is shown by the experience of other countries. A common feature of digital literacy strategies abroad is the clearly defined role of government in developing and implementing programs, as well as the designation of champions for issues such as inclusion, safety, education, and culture. It is also shown by previous experience in Canada. For example, the *Canadian Strategy to Promote Safe, Wise and Responsible Internet Use* was developed and implemented in 2001 by Industry Canada in partnership with the departments of Justice, Solicitor General, Canadian Heritage and the Canadian Association of Internet Providers. The five pillars outlined in the strategy were:

- supporting initiatives that educate and empower users;
- promoting effective industry self-regulation;
- strengthening the enforcement of laws in cyberspace;
- implementing hotlines and complaint reporting systems; and
- fostering consultation between the public and private sectors, and their counterparts in other countries.

41. Report of the Digital Britain Media Literacy Working Group Section 2.6



Although the strategy was not renewed, Industry Canada has continued to play a leadership role in steering Canada's digital strategy and should continue to do so in the future. Currently, various components that would be considered part of a national plan for digital literacy fall under several federal government departments. Internet safety is mandated to Public Safety Canada; adult literacy and training falls under HRSDC. Canadian Heritage is responsible for developing the capacity of Canada's cultural industries, institutions, creators and communities (through Canada Online) and for providing a framework for both the Canadian Broadcasting Corporation (CBC) and Canadian Radio-television and Telecommunications Commission (CRTC) (Broadcasting Policy and Programs Branch).

Components of digital literacy skills development are also spread across mandates and departments of provincial governments, for example, ministries or departments relating to education, training, colleges and universities, small businesses and innovation all have vested interests in this. If Canada is to develop an effective and comprehensive framework for digital literacy, these and other government stakeholders must be at the table.

As government moves more of its services into the digital realm, it provides the impetus and motivation to the community to use digital services. More e-government programs result in greater awareness of the benefits and risks inherent in digital media usage and create more opportunities for individuals to intrinsically increase their literacy levels.

A key element of any government-led digital media initiative must be increased transparency and open information policies. At the core of digital media communications is the flow and transfer of information, a process which inevitably drives greater transparency within government and encourages digital literacy within citizens. The US Federal Government has made significant investments in open information initiatives. Although there are significant differences concerning the legal status of public data in the US and Canada,<sup>42</sup> we can still learn a lot from American programs in this regard. The US Open Government Program<sup>43</sup> was launched in an effort to make government more transparent and accountable, and at the same time, has also acted as a catalyst for technological development within and outside of government.<sup>44</sup> Different departments across the US Federal Government such as the Departments of Education, Defense, Commerce, Justice and State contribute their data sets.<sup>45</sup> The nature of the data and the fact that it is distributed in digital formats means that it can only be utilized by digitally literate citizens. We believe that all levels of government in Canada should consider access to open data as a key principle in digital media programs.

Aside from the economic and social benefits of government digital media programs, the use of digital media as a public safety tool is becoming central to our communications systems. Citizens must be digitally literate in order to access public health and safety information quickly, confidently, and securely.

There has been increased recognition of the importance of media literacy and digital literacy in the policy agendas of regulators from around the world, with many appreciating the important role education and awareness

42. Eaves, David. "Open Data – USA vs. Canada." 16 Apr. 2010. <http://eaves.ca/2009/10/08/open-data-us-vs-canada/>

43. <http://www.whitehouse.gov/Open>

44. See the innovations gallery: <http://www.whitehouse.gov/open/innovations>

45. <http://data.gov>. See here for a comprehensive list of participating departments <http://www.whitehouse.gov/open/around>

play in alleviating more intrusive regulatory involvement in social policy matters. European regulators, for example, “have moved away from censorship as a form of protection and towards the provision of consumer advice and/or advocacy of media literacy.”<sup>46</sup>

In Canada, the CRTC, Canada’s broadcast and telecommunications regulator, has promoted media literacy for over 15 years, starting with its 1996 public notice on TV violence where it stated: “The Commission encourages programmers and distributors to deepen their involvement in media literacy and public awareness...it will generally accept funding of third party organizations directly involved in media literacy as a tangible benefit at the time of transfers of ownership or control of broadcasting undertakings.”<sup>47</sup>

In the *CRTC Three-Year Plan, 2008-2011*, Chairman Konrad von Finckenstein reiterated this support when he stated that “informed Canadians participating in the communications system” was an expected outcome for CRTC priorities.<sup>48</sup>

In addition, the CRTC is a member of the International Institute of Communications’ International Media Literacy Research Forum, whose mission is to “improve understanding of the emerging issues, promote innovative methodologies and raise media literacy up the agenda of policy making bodies across the world.”

Unlike communications’ regulators in some countries, the CRTC does not have a legislative mandate to promote or support media literacy or digital literacy. That said, it has had, and hopefully will continue to have considerable influence in supporting and promoting media and digital education in Canada. It can do so through public notices that encourage media industries and the public to support media literacy and digital literacy; by continuing to recognize media literacy initiatives and organizations as legitimate recipients of tangible benefits from broadcasting transactions; and by supporting research regarding Canadians’ digital media attitudes and use.

What strategies  
could be employed  
to address digital  
divides?

In addition to the CRTC, federal cultural institutions such as the CBC and the National Film Board could play a stronger role in supporting the development of digital literacy by helping spread awareness, providing information, supporting the development of digital content, and serving as incubators for innovations that complement and combine traditional forms of audio-visual programming with digital media.

## **Public Awareness and Community Programs**

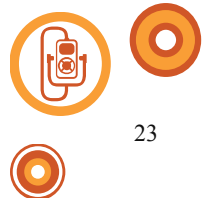
### **Public Awareness**

The benefits of any digital literacy initiative will not come to fruition unless the public recognizes and acknowledges the value of digital media resources. Just as infrastructure is not fully utilized without literacy, literacy programs won’t be utilized without public awareness of their value and efficacy. To achieve this level of understanding, a public awareness campaign must accompany the roll out of digital literacy programs.

46. [http://www.acma.gov.au/webwr/assets/main/lib310665/media\\_literacy\\_report.doc](http://www.acma.gov.au/webwr/assets/main/lib310665/media_literacy_report.doc) (p. 5).

47. Public Notice CRTC 1996-36. Policy On Violence In Television Programming.

48. <http://www.crtc.gc.ca/eng/BACKGRND/plan2008.htm>





Since the biggest challenge of creating a digitally literate society lies in changing the attitudes and behaviours of those *not* engaged with technology, the most effective strategy would be a cross-media marketing campaign that would use the full spectrum of analog and digital media resources – from print to radio to television to blogs, Canadian news and entertainment websites, social media sites such *Twitter*, *Facebook*, and *YouTube* as well as other forms of social and viral media – in both official languages. Sponsored and coordinated by the federal government, this multi-faceted public awareness campaign should provide motivation for increasing digital literacy for all Canadians, regardless of age, geography, culture, socio-economic status or attitude.

One area in which there is a particular need is copyright. Many Canadians who want to be responsible digital citizens nonetheless lack an understanding of their legal rights and responsibilities in regards to their own creations and those of others. The occasion of the amendment of the *Copyright Act* creates an opportunity to inform citizens about this pervasive issue and, in so doing, influence attitudes and behaviours to the long-term benefit of all stakeholders.

### Community Programs

Programs that provide all citizens with digital literacy skills through community-based initiatives are central in national digital strategies around the world. A first step in developing and implementing programs for digital literacy in Canada would be to explore similar initiatives and best practices here and around the world.

There's little doubt on the important role played by community networks and community-based organizations in "providing and maintaining both the technological and social infrastructures of ICT access, adoption, and use in Canada."<sup>49</sup> However, unlike schools, which provide the perfect environment for reaching and teaching Canadian youth, developing digital literacy programs for the general public – which includes parents, seniors, new Canadians and citizens who may be socio-economically, culturally, linguistically or geographically disadvantaged – poses more challenges.

These challenges demand a comprehensive response that incorporates both the public and private sectors.

### Government-led Initiatives

The Community Access Program (CAP) administered by Industry Canada provides a model on how the federal government can work with provinces and territories to support community programs for digital literacy. Under this program federal, provincial, and territorial governments, community groups, social agencies, libraries, schools, volunteer groups, and the business community joined forces to create community hubs that provide computer support and training to adults and youth.<sup>50</sup>

Examples of CAP programs include:

- Seniors On Seniors (SOS) Technology – a series of free workshops across Canada where seniors mentor other seniors in the use of new technology;

49. Executive Committee, Canadian Research Alliance for Community Innovation and Networking: Submission to the Telecommunications Policy Review Panel. November 3, 2005. [http://www3.fis.utoronto.ca/iprp/cracin/TPRP\\_nov3\\_letter\\_signature.pdf](http://www3.fis.utoronto.ca/iprp/cracin/TPRP_nov3_letter_signature.pdf)

50. Industry Canada. CAP Youth Initiatives Across Canada. Accessed April 26, 2010. <http://www.ic.gc.ca/eic/site/cap-pac.nsf/eng/00015.html#ns>

- JobStart in South Etobicoke Ontario, which provides a diverse range of individuals that includes youth, students, persons with disabilities, adults and newcomers to Canada with access to technology to help them find employment and develop job-seeking skills;
- The Sto:lo Adult Education Centre CAP Site in Chilliwack, that helps adult learners develop technology skills;
- The Purple Thistle Centre, a youth-run arts and activism centre in East Vancouver where youth acquire multi-media skills.

Integrating digital literacy skills training into existing CAP programs and sites will ensure that Canadians are not only able to more easily access and use digital technology, but are also able to use it in a manner that enhances their lives.

To facilitate meaningful change, the Federal government can provide nationally coordinated strategic support in conjunction with financial support. Strategic support will help provinces and communities identify needs and then provide the resources to fill them.

*“A number of avenues for strategic support – including for digital literacy – are outlined in a report published by the British Department for Culture, Media, and Sport. One of the main recommendations is the formation of a digital media-focused knowledge transfer network.<sup>51</sup> The knowledge transfer network would facilitate the exchange of information to help educational institutions learn from their peers across the country. It would also assist in making necessary connections between key players and resource providers.”*

Federal resource support can continue to flow through programs like CAP, but specific support for literacy initiatives must be incorporated into each program’s goals and grant requirements. However, as we have argued throughout this paper, federal grant programs would be more effective in producing true social, cultural, and economic benefits if financial support is complimented with strategic support – and only if digital literacy skills are made a primary component on par with infrastructure deployment.<sup>52</sup> For example, the Government of Canada currently partners with Ministries of Education and TelecomPioneers to implement the *Computers for Schools* program. *Computers for Schools* has donated over one million refurbished computers to Canadian schools. A logical extension of this program would be to fund an educational component that helps students develop their digital literacy skills.

## Public Libraries

Public libraries are strategic partners in facilitating development of digital literacy skills in Canadian communities. Free, inclusive, and accessible, Canada’s public libraries remain our society’s informal learning system — the

51. *Creative Britain New Talents for the New Economy*. (2008), p. 37 Section 3.15

52. Dr. Phillip McRae, Executive Staff Officer Alberta Teacher’s Union. Phone interview. January 29, 2010.



“people’s university” – in the digital age. Interestingly, their relevance and usefulness have increased sharply in the past decade, with public use of in-person and digital services continuing to grow: two-thirds of Canadians report having and using a library membership card. Even very small communities where schools and banks have closed, maintain a library. Public libraries were the first public service in Canada to offer public access to computers. An integral part of the government’s vision of ensuring connectivity for all, especially through the Community Access Program (CAP), libraries have long provided the bulk of public access to the Internet.

As libraries have always helped to match people of all ages and literacy levels with the ideas and resources they seek, media literacy in the digital environment has been a natural extension of this historic mission. Their particular niches have been basic instruction (Richmond Public Library) and orientation programs for parents and families (with the Media Awareness Network) to help parents understand the unmediated nature of the Internet and the challenges and options of parenting the “Net Generation”. Public library partnerships in media literacy (Ottawa Public Library) have included immigrant organizations and youth groups such as Girl Guides of Canada. Public libraries are well positioned to work in such partnerships because of their high rates of public participation and trust and their cradle-to-grave mandate. Libraries have also provided or facilitated public programming on such high-profile issues as cyberbullying, copyright, social software and privacy to enable families and all who share responsibility for the well-being of youth to come together and examine practical solutions. In other words, public libraries’ historic focus on literacy has readily extended to the broader literacies of the twenty-first century, in an environment of increasingly ubiquitous, powerful and inexpensive wireless access and participation.

The participation of these vibrant public institutions is fundamental to a national digital strategy.

*“In Montreal the Atwater Library’s Digital Literacy Project partners with new media practitioners, new media businesses, schools, and local community service organizations to teach vulnerable Anglophone youth in west-downtown Montreal creative new media skills such as blogging, video production, web publishing, and graphic design.”*

## Private Sector

Creating programs that help the general public develop digital literacy skills is an excellent opportunity for partnerships between the public, private, and not-for-profit sectors – especially those companies with a vested interest in digital media, such as broadcasters and Internet service providers. For example, the ‘Race Online for 2012’ program in the UK challenges governmental and non-governmental stakeholders to work together to help disadvantaged groups develop digital literacy skills. Partners – which include such well known companies as Google, Skype, and Microsoft – participate by making a ‘partnership promise’ of actions they will commit to, such as: helping a local community, donating money or equipment, doing something to get seniors online, training customers or employees. A similar partnership model could also be applied in Canada.



The private sector can also encourage and promote digital literacy through public competitions, scholarships, and internships.<sup>53</sup> Prizes have been found to directly generate innovation.<sup>54</sup> Competitions such as the one recently created by the video rental company Netflix spurred furious research investigation and collaborative dialogue within both computer science communities and the general public.<sup>55</sup> The Netflix Prize, which set out to improve the accuracy of predictions about how much someone is going to enjoy a movie, awarded \$1 million to the team that devised the best movie recommendation algorithm. Such initiatives are an innovative and a productively disruptive method for industry to encourage broader engagement with digital media, as well as a compelling example of crowd-sourced research and development.

\* \* \* \*

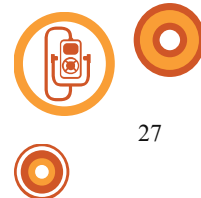
The implementation strategies outlined in the above sections are the large scale changes that must take place in order for Canada to regain its place as a leader in the digital world. Although all the strategies are feasible in the near future, we understand that such changes take time. In the next section are the items we believe must happen **now** in order to ensure we not only keep pace, but excel as a digital nation.

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53. *Australia's Digital Economy: Future Directions*. (2009), p. 28.

54. Dr. Phillip McRae, Executive Staff Officer Alberta Teacher's Union. Phone interview. January 29, 2010.

55. <http://www.netflixprize.com/>





# Recommended Actions, Targets & Timelines

This section recommends a series of actions that should be taken to begin implementing the national digital literacy strategy presented in the previous chapter.

It responds to the following discussion questions:

- Should we set targets for our made-in-Canada digital strategy? If so, what should those targets be?
- What should be the timelines to reach those targets?

In responding to these questions, this chapter assumes that the consultation document has already accepted a number of basic targets — e.g. that all Canadians should have digital skills, and that investments in technology and infrastructure development should be balanced by investments in digital literacy.

With these targets and objectives established as preconditions of the consultation, we have concentrated our recommendations on the organizational and procedural targets and timelines needed to move toward their achievement.

1. The federal government must develop a national digital economy strategy with digital literacy as its cornerstone. To that end the government should:
  - Create a Digital Literacy Taskforce – The federal government, most specifically Industry Canada, HRSDC, and Canadian Heritage, should immediately convene a digital literacy taskforce comprising key stakeholders at all levels of government (both federal, provincial and territorial), as well as those representing both business and communities across Canada. This taskforce should be charged with developing a cross-jurisdictional blueprint for a **NATIONAL DIGITAL LITERACY STRATEGY** that will ensure that all Canadians have the necessary digital literacy skills in order for Canada to become a leader in the global digital economy.
  - Host a Digital Literacy Stakeholder Conference – Within one year, a gathering of all stakeholders from all four spheres of implementation should be held. Attendees should include educators, industry leaders, government officials, community groups and digital media content producers and technology experts. The goal of such a conference should be to develop and launch a national coordinated strategy focused on strengthening digital literacy in Canada as a fundamental cornerstone of the digital economy strategy. It should examine the unique situations in which different organizations operate and how digital literacy should be integrated in to those environments. Additionally, the conference should be a venue for government to announce digital literacy initiatives.

2. Parallel to the work of the Taskforce the federal government needs to fund a national study of students and teachers in order to determine, from each of their perspectives, the digital skills that are most needed by Canadian children and youth. The most recent national survey on the behaviours, attitudes, and opinions of Canadian children and youth relating to digital technology was conducted in 2005.<sup>56</sup> New findings will ensure that programs and tools meet the needs of Canadian youth and educators and will support future program evaluation.
  
3. In preparation for a Digital Literacy Stakeholder Conference, the Digital Literacy Taskforce should:
  - Prepare an inventory of digital literacy programs in Canada, including those provided by the federal government, provinces and territories.
  - Review the results achieved by and the lessons learned from previous targeted digital literacy initiatives, such as SchoolNet and CAP, as well as from previous government initiatives to foster digital literacy through job training, economic development, and regional development programs.
  - Review the current and potential roles of federal departments and agencies in leading and supporting a whole-of-government approach to the development of digital literacy, including regulatory and cultural institutions such as the CRTC, CBC and NFB, as well as institutions with economic, social, and regional development responsibilities.
  - Develop a national balance sheet comparing investments in technology development and infrastructure access with investments in digital literacy.
  
4. The Digital Literacy Taskforce should also study the following policy options and prepare recommendations for consideration by the conference.
  - Launching a comprehensive federal/provincial/territorial digital literacy initiative aimed at fostering digital literacy in learning institutions, with emphasis on the development of a K-12 and post secondary open source digital learning repository as recommended by Canada 3.0; in the marketplace, particularly among SMEs; and among consumers, with emphasis on the linkages between digital literacy and other forms of literacy, including financial literacy and identity management, in the online environment.
  - Creating a national facilitator for digital media cooperative education programs and placements (as recommended by Canada 3.0).
  - Establishing community technology centers in rural Canada and a national program similar to the Digital Literacy Corps in the United States to implement training amongst citizens – especially those who may be regionally, economically, or socially disadvantaged.
  - Increasing collaborative research funding and commercialization support for digital media at the federal and provincial levels, using the program innovations launched by the Social Sciences and Humanities Research Council as a model for action (as recommended by Canada 3.0).

56. Media Awareness Network (2005). *Young Canadians in a Wired World: Phase II*.  
<http://www.media-awareness.ca/english/research/YCWW/phaseII/>



- Developing an Online Digital Portal – a federally sponsored online digital portal should act as the starting point for individuals to strengthen their digital literacy. It should incorporate easy to understand explanations of digital media, tutorials on how to use digital technology, links to relevant government resources, an easy to use forum where users can post questions about digital media, and a community resource section where users can find more information about digital resources in their community.
- Creating an online data portal where public information created across all forms of government and by any public institution is regularly published in a machine-readable format.
- Establishing a Digital Media Knowledge Transfer Network – a knowledge transfer network designed for educators and companies to share information on digital media education and job training initiatives should be established and maintained. This should be a website designed for educators, administrators, trainers, career counsellors, and e-learning designers but also a regular online meeting place where knowledge can be shared and ideas generated. Through this Knowledge Transfer Network, educational initiatives will not function as proprietary enterprises but rather as ideas, programs and projects donated back to the community.

# Annex A: Contextual Factors, Challenges and Questions Addressed in the Submission

The consultation paper covers five themes:

- Capacity to innovate using digital technologies
- Building a world class digital infrastructure
- Growing the information and communications technology industry
- Digital media: creating Canada’s digital content advantage
- Building digital skills for tomorrow

The paper does not use the phrase “digital literacy”, although its definition of “digital skills” is adapted from an Educational Training Service definition for digital literacy (p. 30). However, under each of these themes it identifies contextual factors, presents challenges and poses questions that intersect with the issues discussed in the Media Awareness Network paper. These contextual factors, challenges, and questions include the following:

## Capacity to innovate

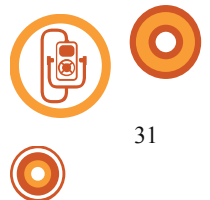
- *Challenge: overcoming underinvestment in ICTs*
  - Technology adoption is a complex process involving changes to business processes, new digital skills, and technology management expertise, as well as investment in technology (p. 12).
  - There is a lack of business and managerial skills in Canada. Developing, educating, training, and attracting professionals with both business and IT skills is important (p. 13).
- *Challenge: Protecting the Online Marketplace*
  - There is a need for increased cyber security awareness (p. 15).

## Building infrastructure

- *Questions:* The preamble states that all Canadians should have access to high speed networks (p. 19).

## Growing the ICT industry

- *Challenge: Talent* (p. 22)
  - Canadian companies must be able to attract and retain highly qualified professionals.
  - The talent base is shrinking as a result of declining post-secondary enrolment and declining immigration.
  - It is important for governments and the private sector to identify ways to attract more students to university ICT programs, attract more foreign ICT professionals, and retain talent in Canada.
- *Question:*
  - What efforts are needed to address the talent needs in the coming years? (p. 23).





## Digital media

- *Context* (p. 25)
  - The continuing growth of Canada's arts and culture sector is not possible without Canadians who are using digital media more and in new ways at home, school, work or play.
  - New technologies are putting creative control in the hands of consumers and creators.
- *Challenge: Talent and sector development* (p. 27)
  - With the constant evolution of technologies and an emerging industry comprised of SMEs, there is a need to develop skills, share expertise and best practices.
  - The federal government will review which areas of activity of digital media businesses most need to bolster talent by better attracting and retaining international students and permanent immigrants.
- *Challenge: Role of national institutions* (p. 27)
  - National cultural institutions like the CBC and the NFB can be a hotbed for research and development and a training ground for the next generation of creators.
- *Question:*
  - How can we ensure that all Canadians, including those with disabilities (learning, visual, auditory) will benefit from and participate in the Canadian digital economy? (p. 29).

## Digital skills

- *Context* (p. 30)
  - Creating the right conditions for a world-class digital economy will require digital skills for all Canadians.
  - There are concerns that a digital skills divide is emerging – this is of particular concern because effective participation in the labour market is increasingly linked to digital competence.
- *General challenges* (p. 30)
  - For Canada to become a leader in the digital economy, digital skills development must be fostered in all Canadians.
  - A significant challenge in determining if Canadians have the skills required for the digital economy is a lack of a precise understanding of what digital skills are and how Canada is faring compared to its competitors.
- *Challenge: Addressing skills shortages in the ICT sector* (p. 30)
  - Solving skills shortages will require a range of integrated, targeted efforts coordinated across government, industry, and education partners.
  - A digital strategy needs to seek opportunities to increase participation of under-represented groups, such as women and aboriginals, particularly by encouraging more post-secondary enrolment in ICT-related programs.
  - Permanent immigration will be key to the health of the ICT sector labour force.

- Other ideas: post-secondary programs that combine ICT and other fields, and strengthening opportunities for continuing professional development in the ICT sector.
- *Challenge: Improving digital skills in workplaces across the economy* (p. 31)
  - Distinct challenges are faced by SME's, large employers and institutions, and sectors undergoing economic restructuring.
- *Challenge: Narrowing the digital skills divide* (p. 32)
  - It is essential that all Canadians have the skills to be able to access, use, and interpret a growing and increasingly complex range of digital information.
  - Digital experience in Canada varies with income, education, and age – and essential skills are increasingly connected with digital abilities.
  - Technology advances, in particular social networking, have the ability to enhance learning through the use of new media.
- *Questions:* (p. 33)
  - What do you see as the most critical challenges in skills development for a digital economy?
  - What is the best way to address these challenges?
  - What can we do to ensure that labour market entrants have digital skills?
  - What is the best way to ensure the current workforce gets the continuous up-skilling required to remain competitive in the digital economy?
  - How will the digital economy impact the learning system in Canada? How we teach? How we learn?
  - What strategies could be employed to address the digital divide?
  - Should we set targets for our made-in-Canada digital strategy? If so, what should those targets be?
  - What should be the timelines to reach these targets?

### Other issues

In addition to identifying these contextual factors, challenges and questions, the consultation paper makes two other points that are germane to the Media Awareness Network paper:

- Training and learning is a complex area of shared federal and provincial/territorial jurisdiction (p. 33).
- Developing and implementing a digital economy strategy will require the active engagement of all stakeholders, including ICT producers, consumers, researchers, teachers and users. It will also require cooperation between governments.



## Annex B: Digital Literacy Initiatives in Other Countries

Over the past few years, a strategic focus on digital literacy policy has emerged in various international jurisdictions, notably in Europe and Australia, and most recently, in the United States.

The European Union Expert Group has stated that digital literacy is an essential life skill and that “the inability to access or use information communication technologies has effectively become a barrier to social integration and personal development.”<sup>57</sup>

The March 2010 report by the US Federal Communications Commission, *National Broadband Plan Connecting America*, calls for a major upgrade of US broadband infrastructure and a push to increase broadband usage. The report calls for significant digital literacy initiatives and identifying digital literacy as a necessary life skill on par with reading and writing.<sup>58</sup> In addition, it recommends the establishment of a federally funded national Digital Literacy Program, including the creation of a Digital Literacy Corps that will teach digital skills across the United States, the creation of an online digital literacy portal, and a commitment to building the capacity of local institutions that act as partners in building digital literacy.<sup>59</sup>

Britain and Australia, both of which have already embarked upon extensive national digital literacy initiatives, are two noteworthy benchmarks for Canada. Canada is comparable to the UK in Internet usage at 80 per cent<sup>60</sup> of the population, and to Australia in its physical and demographic makeup with large rural and indigenous populations. Both these countries are investing heavily in digital literacy programs supported by strong strategic policy support.

The landmark *Digital Britain* report catalyzed and galvanized UK policymakers to support a cohesive national digital strategy of which digital literacy is a primary focus. *Digital Britain’s* goals were, from the outset, patently clear: “we will need to ensure a population that is confident and empowered to access, use and create digital media.”<sup>61</sup> The working group tasked with implementing the policy identified a strategy where government acts as both the unifying and funding source for digital literacy programs in conjunction with in-kind contributions from private and public media organizations.

The working group clearly articulates the economic benefits of digital literacy: “digital engagement will drive demand for digital content, services, and devices and in turn drive the digital economy.”<sup>62</sup>

Australia has also invested significantly in the necessary infrastructure and resources to foster a digitally literate population. Most notable is the \$2 billion commitment over the next five years to what’s being called the *Digital Education Revolution*. Australia’s *Future Directions* report notes, “one marker of success in maximizing our participation in the digital economy will come when distinctions are no longer made between digital and

57. DG Information Society and Media Group. (2008), p. 4.

58. FCC National Broadband Plan, Connecting America. (March 2009), Section 9.3.

59. Ibid

60. Statistics Canada Internet Use Study (May 2010). <http://www.statcan.gc.ca/daily-quotidien/080612/dq080612b-eng.htm>

61. Digital Britain Final Report. (June 2009), p 66.

62. Report of the Digital Britain Media Literacy Working Group. (March 2009), Section 2.1.

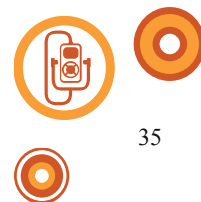


non-digital skills. Or when education and training programs seamlessly integrate instruction about how to engage with technology as part of the regular course of discussion.”<sup>63</sup>

It is beyond the scope of this paper to analyze in depth the various global digital literacy initiatives, but it is clear that a number of countries have embraced digital literacy as a core component of public policy in order to drive economic growth and competitiveness – as well as social well being for their citizenry.

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63. Australia’s Digital Economy: Future Directions. (2009), foot note 143.





## Annex C: Eight Benefits of Digital Literacy

The benefits of digital technology touch every aspect of society and the economy; at the same time, there is no denying that technologies offer challenges alongside opportunities. Two of the principles for digital literacy – the skills to *use* digital media tools and the capacity to *understand* media content – support the critical thinking that’s needed not only to maximize digital opportunities, but also to counter and manage digital risk.

The following topics or points outline some of these widely recognized benefits and assess where Canada stands in relation to them.

### 1. A digitally literate population is more innovative and creative.

The foundation of the new digital economy, or the knowledge economy, is creativity; and not surprisingly, the basic tools of creative individuals and businesses in this economy are digital. Economic benefit lies not only in the value of the products created but also in the jobs and vibrant culture that emerge from creative industries and creative people. Digital literacy is fundamental to the success of the new economy.<sup>64</sup>

Kevin Lynch, former Clerk of the Privy Council, observes “innovation is a driver of productivity growth, creating the new products and processes that will allow Canadian business and workers to move up the value-added chain and compete on quality, service and uniqueness, not merely on cost.” According to Lynch, adoption, production and development of ICT-related goods and services are the essential drivers of this evolution; and for both Canadian firms and citizens, digital literacy is the key to unlocking the productivity and innovation promised by ICT technologies.

One of the direct results of a proliferation of tools for digital media creation is the growth of a creative economy. “The Conference Board estimates that the economic footprint of Canada’s culture sector was \$84.6 billion in 2007, or 7.4 per cent of Canada’s total real GDP, including direct, indirect and induced contributions. Culture sector employment exceeded 1.1 million jobs in 2007.”<sup>65</sup> The creative industries are currently a significant part of our economy, and it is imperative for economic and cultural reasons that they remain so. A digitally literate population can take a global leadership role in creating the content and applications for this new economy and in creating a corresponding market. If digital literacy is not fostered and supported the likelihood of any new forms of media being produced in Canada will be severely hindered. Innovations such as Research in Motion’s (RIM) Blackberry were made possible as a result of a small group of inventors and a much larger group of consumers. The dual benefit of digital literacy ensures there will be both creators and consumers for Canada’s new economic reality.

While it is important for Canada to be proud of its past and present technology-industry success stories such as RIM, Newbridge and Open Text, it is also imperative to place economic value on creation beyond patent-centric or technology-driven invention. Many creative industries, such as film and interactive entertainment, do not produce new technologies or products but rather they produce content of real economic value.<sup>66</sup>

64. Report of the Digital British Media Literacy Working Group. Section 3.32

65. The Conference Board of Canada <http://www.conferenceboard.ca/documents.aspx?did=2671>

66. Department for Culture, Media and sport. *Creative Britain new Talents for the New Economy*, p. 37.

## 2. Digital literacy increases ICT infrastructure development and use.

The most recent research from the World Bank notes that for every 10 per cent increase in broadband Internet connections there is a 1.3 per cent increase in economic growth.<sup>67</sup> This research finding serves as support and justification for continued investments in ICT infrastructure. But investments in infrastructure alone are not sufficient.

Most recent Internet usage numbers report that 80 per cent of Canadians use the Internet, and 92 per cent of these individuals use a high-speed Internet connection.<sup>68</sup> The International Telecommunications Union<sup>69</sup> cites national broadband strategies as a key element of global development; yet even though most Canadians have access to a broadband connection, millions still choose not to use the Internet. The discrepancy between access and uptake needs to be examined in order to determine the social, economic and geographical factors contributing to this disparity.

The FCC's recent report to Congress, *Broadband Adoption and Use in America*, states that over 93 million Americans opt not to use broadband connections. The report observes that the majority of individuals who opted not to use broadband do not use the Internet at all and are at the higher age range. Twenty-two per cent of non-adopters cited digital literacy issues as the reason. Cost was the other major factor cited.<sup>70</sup>

From the uptake issues observed in both Canada and the US, it is clear that a lack of digital literacy is a significant contributing factor to non-usage. Individuals will be motivated to sign up for broadband services or seek out public Internet access sites, only if they understand the value of such services/sites in enhancing their quality of life. It naturally follows that for the Canadian government to fully realize its investment in broadband infrastructure, it must also invest in digital literacy initiatives. The maximal GDP growth from broadband usage as documented by the World Bank will only occur once uptake is fully realized by the population; digital literacy is the key to making this happen.

## 3. Digital literacy promotes smart ICT adoption and increased productivity.

There is clear evidence that ICT adoption results in productivity increases in a variety of ways.<sup>71</sup>

Robert Atkinson, in reference to the US economy, states, "IT has been the key factor responsible for reversing the 20 year productivity slowdown from the mid-1970's to the mid-1990's and in driving today's robust productivity growth."<sup>72</sup> Digital literacy, by extension, is an essential factor in realizing these increases in productivity.

The 2006 *Canadian Telecommunications Policy Review Panel, Final Report* concluded that while the weakness in ICT investment by Canadian businesses was a contributing factor to Canada's poor productivity performance and to the widening gap between our productivity and that of the United States, "investing in ICTs by itself is no guarantee of higher productivity." Referring to a growing body of microeconomics research in this area, the report

67. World Bank. Information and Communications Technology Issue Brief. (September 2009).

68. Statistics Canada Internet Usage Report (May 2010).

<http://www.statcan.gc.ca/daily-quotidien/100510/dq100510a-eng.htm>

69. <http://www.itu.int/en/broadband/Pages/default.aspx>

70. *Broadband Adoption and Use In America* p. 5, see also National Broadband Plan Connecting America Section 9.

71. *Ibid* p.2.

72. *Ibid* p. 10.



went on to note that productivity gains result when ICT investment is accompanied by complementary investments in “smart ICT adoption” – that is, investments in organizational and workflow redesign, process re-engineering, and digital skills development.

Recommending that smart ICT adoption become a national priority, the report states that “smart adoption of ICTs is important beyond the business sector. It is important for government, public sector institutions and organizations, as well as civil society. It matters for the quality of life for individual Canadians and the communities in which they live.”<sup>73</sup>

Digital literacy, which is a core component of “smart ICT adoption,” improves productivity in a very concrete way. A recent New Zealand Computer Society report estimates that increases in digital literacy result in increased worker efficiency of 1-3 hours per work week, depending on the type of work and the initial skill level. The authors of this report apply their findings to the population of New Zealand and conclude that digital literacy skills would result in a national productivity gain of \$1.7B. Based on the average hourly wage of \$20.16,<sup>74</sup> an application of these findings would suggest a very significant national productivity gain for Canada as well, amounting to an annual gain of nearly \$1,600 per worker.<sup>75</sup>

Canada is 8<sup>th</sup> in the world in worker productivity, and our productivity rate grew at a scant 0.8 per cent from 2000 – 2008.<sup>76</sup> Based on identifiable productivity gains resulting from smart ICT adoption, it is clear that digital literacy skill development must be a significant component of any initiative to increase Canada’s productivity level.

#### 4. A digitally literate population makes good organizational sense.

The value of understanding digital media content and applications goes beyond developing intellectual evaluation skills; it also extends to creating confidence in the market place. As the government and the corporate sector move more goods and services online, there are numerous reasons why it makes sense to support the development of digital literacy skills amongst citizens and consumers.

To start, responsible companies want to be associated with “best practices” regarding use of digital media, and support for digital literacy is evidence of corporate social responsibility. Government too, which is migrating many services online, stands equally to gain by ensuring that citizens can effectively access online services.

Unsophisticated and uninformed Internet users get themselves in all sorts of trouble that lands at the feet (or at the call centre) of the organization that the user perceives to be responsible. Digitally literate users know how to access services efficiently and conduct transactions effectively – and they know who to contact if problems arise and how to do so, resulting in reduced support costs.

Digitally literate consumers also know how to conduct business online in a secure manner and are more confident in using e-commerce, in downloading and sharing digital files, and in participating in online activities such as e-banking, e-government and e-health. With this in mind, part and parcel of developing informed and engaged

73. *Canadian Telecommunications Policy Review Panel, Final Report*. (2006), Chapter 7 pp 12 -13.

74. Statistics Canada <http://www40.statcan.ca/l01/cst01/labr74a-eng.htm>

75. Bunker, Beverly. *A Summary of International Reports, Research, and Case Studies of Digital Literacy*. (2010), p. 7.

76. Lynch, Kevin. “Canada’s Productivity Trap.” *The Global & Mail*. (January 2010). <http://www.theglobeandmail.com/news/opinions/canadas-productivity-trap/article1449944/>

e-consumers and users is helping them to manage and mitigate online risks such as viruses, spam, hoaxes, privacy invasions, and cyber-crime relating to identity theft or credit card fraud.

Recommendations from the 2005 report of the task force on spam, *Stopping Spam: Creating a Stronger Safer Internet*, recognized that one of the most effective ways to combat spam is through digital literacy skills development. The task force addressed the issue of 'spam literacy' with the *Stop Spam Here* campaign.

One more reason why digital literacy makes good organizational sense is that it supports quality digital media advertising. Responsible advertisers know that they have to maintain high standards to remain credible and they are hurt when consumers tune out or are turned off by advertising methods. Sophistication among Internet users as to source and trustworthiness of advertising has a direct bearing on digital media advertising, which in turn, has a direct bearing on maintaining freely accessible digital media undertakings that are supported by advertising dollars, resulting in increased advertising effectiveness.

And finally, a common argument from industry against consumer protection legislation is that consumers are able to look after themselves, but this depends on their having access to good information and the skills to use it to protect and advance their interests. Digital literacy therefore supports alternatives to regulation.

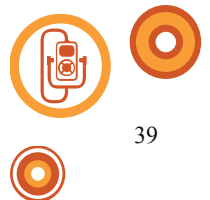
## 5. Digital literacy enables public participation.

The ability to create and distribute material rapidly and practically for free to almost anywhere in the world is the greatest innovation of the digital media era. In the past, media audiences were consumers only. Whatever was broadcast or published was what they received, with little opportunity to publicly respond to the authors or creators. With the advent of digital media, audiences have evolved to become active users who consume and create, receive and distribute. Ensuring that Canadians can contribute their perspectives, opinions and creative compositions in a variety of different media is becoming a social, democratic, and economic imperative.

The digitally literate citizen knows how to create and publish video and images, create and run a blog, share links to meaningful and innovative content, edit multimedia files and documents, build profiles appropriately on social networking sites and, most importantly, adapt and incorporate new communications technologies into daily life. The nature of technology is one of constant evolution, and it is the user who knows how to maximize the efficacy of digital tools that will be able to adapt.

Within the context of learning how to create digital media content and tools, we need to look beyond what is already here and turn our eyes to what is coming. Web 2.0 – the read/write, view/create Internet that is increasingly dominated by user-generated content – is now firmly established as a part of our lives. What will Web 3.0 bring?

We are clearly moving from a flat, two-dimensional Internet experience, whose basic metaphor is the “page” and whose most pervasive medium is text, to a progressively more immersive, three-dimensional experience of the web. As the Internet steadily evolves from a web of pages to a web of places and spaces, digital literacy programs will have to similarly evolve. We will need to develop the next-generational digital skills that will help us (and our avatars) navigate, communicate, evaluate and create within three-dimensional spaces and virtual realities. Moving from web pages to immersive multimedia and multi-sensory experiences, the digitally literate are comfortable with technological change and know how to adapt.





Closely related to participation, an understanding of digital media will also generate greater awareness of issues surrounding copyright.<sup>77</sup> A digitally literate individual has knowledge of copyright law, and a higher appreciation of how media content is produced. This knowledge provides individuals with the information to understand the impact of copyright infringement on the industry and artists and empowers them to make more informed decisions when it comes to intellectual property and copyright.

## 6. Digital literacy promotes economic and social inclusion.

There is no question that the demographic groups with the lowest levels of Internet usage are the ones that could potentially benefit the most from increased digital literacy.<sup>78</sup> Individuals with lower levels of education or the unemployed would greatly profit from the Internet as both a source of job listings and educational resources. Current gaps in digital literacy skills exist along socio-economic lines and efforts must be made to close these gaps in order to extend the benefits of digital media to these demographics.<sup>79</sup> This ensures that more individuals will have the confidence to use digital technologies and those that do use it will do so more effectively.

*“In 2009 graduate students and community activists from the Northwest Territories collaborated to develop *Our North/Our Future: Talking Change, Security and Sustainability with Northern Youth*, a project that provided young people with an opportunity to include their voice in discussions on the future of the North. As part of this program youth were trained on using video, photography and blogging to explore and share their thoughts on Northern life. Blogs created as part of this initiative continue to drive discussion and provide a forum for youth voices and perspectives.”*

Lack of digital skills increases the risk of furthering the isolation of those already dealing with issues of economic or social exclusion. This, in turn, has the potential to create a vicious cycle where digital exclusion perpetuates social and economic marginalization. For example, as digital media becomes an essential tool in job-hunting, lack of digital literacy itself becomes a driver of further exclusion.<sup>80</sup>

Digital literacy provides citizens with the ability and understanding to access e-government services, e-health resources, and other online public services – and communicate back to government through them. Governments and public institutions can invest the money into building these programs, but as with investments in broadband infrastructure, the investments in e-government will be wasted if Canadian citizens do not understand and are not able, or willing, to use these services. Again, it is important to appreciate that those who are most in need of public services are individuals with the lowest levels of digital skills.

77. Report of the digital Britain Media Literacy Working Group. (March 2009), Section G.1.

78. Statistics Canada. *Internet Usage Study*. (June 2008).

<http://www.statcan.gc.ca/daily-quotidien/080612/dq080612b-eng.htm>

79. Ibid.

80. Broadband Adoption in Low-Income Communities (March 2010), p. 6.

Digital media also provides new forms of accessibility for Canada’s physically disabled citizens. It allows this segment of our population to engage and interact more fully with society, and more easily take advantage of public programs and government services. Digital media has the potential to be a great leveller that provides all citizens with new opportunities for employment and social and cultural participation in the wider community.<sup>81</sup>

## 7. Digital literacy supports and promotes empowerment and engagement.

Canada is faced with a series of unique and challenging issues in supporting an advanced communications infrastructure that is accessible to our geographically and culturally diverse population. Canadians are spread out over a large landmass, we have two official languages, we have a rich multi-cultural heritage with a growing immigrant population, and we have many rural and indigenous communities.

By its nature, digital communications technology bridges physical distances, making it ideally suited for a country with the physical makeup of Canada. It makes knowledge transfer and social communications more affordable and efficient.

The most recent Statistics Canada *Internet Usage Study* observed a digital divide between rural and urban Canada: in communities with populations of 10,000 or less, 73 per cent of residents accessed the Internet, compared to 83 per cent of Canadians living in communities with more people. The Statistics Canada report suggests that the reasons for this discrepancy include socio-economic factors and broadband availability. Increasing broadband capacity and providing digital literacy resources in rural centers would help combat this divide and help to bridge the usage gap between rural and urban communities.<sup>82</sup>

Creating a cohesive cultural ecosystem faces many barriers. Much has been done to connect the country with telephone and TV access but the digital era affords us new opportunities to further the cultural exchange and communication. In contrast to traditional media and telecommunications technology, digital media supports both interactive communications and user-generated cultural content creation. As a result, these tools are uniquely suited to effectively confront and deal with the geographical, social, and cultural communications challenges.

*“Skwxwú7mesh-Kwakwaka’wakw blogger Dustin Rivers uses his blog to inform his community on events and news happening on a political level within his nation. Dustin’s blog fills an information gap in a community where no other form of media exists to share information or upcoming events or provide critique and analysis of local and national political decisions that affect them. He is also developing podcasts to help Squamish youth practice and maintain their language.”<sup>83</sup>*

81. Bunker, Beverly. *A Summary of International Reports, Research, Case Studies on Digital Literacy*. (2010), p. 34.

82. Statistics Canada Internet Usage Survey (2009). <http://www.statcan.gc.ca/daily-quotidien/100510/dq100510a-eng.htm>

83. <http://www.straight.com/article-241176/qa-indigenous-blogger-dustin-rivers-using-internet-technology> and <http://whereareyourkeys.org/2010/04/02/wayk-podcast-episode-12-dustin-rivers-squamish-language-night-3/>



With the development and evolution of Web 2.0 – the read/write interactive Internet that has turned passive consumers in to active contributors – a noticeable increase in Internet usage in French-speaking Quebec has been observed.<sup>84</sup> A suggested explanation is that with the increasing ability of our citizens to create and share content, Quebec Internet users have contributed an increase in French language content and locally relevant material to the web.<sup>85</sup>

Web 2.0 also helps sustain Canadian culture and content on the Internet. A digitally literate Canada will inevitably not only consume more media content, but also help to sustain a unique Canadian presence globally as citizens create cultural content on Canadian websites and in diverse Internet communities.

*In January 2009, just months before its 70<sup>th</sup> anniversary, the National Film Board of Canada (NFB) launched the NFB Screening Room – an online portal designed to make its films more readily accessible to Canadians and viewers around the world.*

*One year later, the numbers of views at NFB.ca and its iPhone App provide an impressive example of Canadian culture online:*

***Total Film Views on NFB.ca (January 2009-January 2010)***

- \* 3.7 million total online film views since we launched a year ago
- \* 2.2 million online film views in Canada (59% of views)
- \* 1.5 million views International (not including Canada) on the web
- \* Total international views: 1.45 million views
- \* Total views: 3 768 628

***Film Views on iPhone App (Since October 21, 2009)***

- \* 396, 190 views on iPhone in Canada
- \* 131, 332 views on iPhone outside Canada
- \* 527, 522 Total film views on iPhone
- \* Total number of apps downloaded: 171 271.<sup>86</sup>

84. Larry McKeown of Statistics Canada. Phone interview. January 14, 2010.

85. "Locally and personally relevant content can be a key driver to inspiring and empowering people to explore and enjoy the digital world." Report of the Digital Britain Media Literacy Working Group Section A.2.

86. Source: NFB Blog. <http://blog.nfb.ca/2010/01/21/online-video-stats/>



## 8. Digital literacy helps children and youth mitigate online risk.

Depth of understanding and awareness of potential online risks are the most effective ways to enhance e-safety. As user confidence increases with experience and understanding so does sensitivity toward privacy and other safety issues. Just as it's not possible to completely protect youth from dangers in the physical world, neither can we completely protect them in the digital world. Thus, in the same way that we teach youth how to recognize, deal with and mitigate offline threats, a similar approach can be taken in relation to digital threats. In a special report commissioned by the British Prime Minister's Office targeted at protecting children in a digital world, author Dr. Tanya Byron recommends that one of the strategies to promote the e-safety of children is to "broaden and deepen their skills, knowledge and understanding to use new technology."<sup>87</sup>

This sentiment also holds true for parents, many of whom feel ill-equipped to help their children in their online explorations. Digital literacy skills can bridge this generation gap by providing parents with a better understanding of their children's online activities so they can work with them to develop awareness guidelines – instead of attempting to stifle or censor them. Research indicates that young people whose parents are both *actively* and *positively* involved in their online activities exhibit the lowest levels of risky behaviour online.<sup>88</sup>

In addition to vulnerability to online scams, viruses and spam, young people face safety and privacy risks relating to social interactions on widely popular websites such as *Facebook*, *MySpace*, *LiveJournal* and *Twitter*. At a recent conference held by the McArthur Foundation's Digital Media and Learning Initiative, researchers noted that although much online activity on the part of young people is benign and prosocial – for the most part simple chatter – new forms of communicating between peers can at times be risky and risqué.<sup>89</sup> Attendees acknowledged that certain features of online communication may lower an individual's inhibitions, and because of the immediacy, uncontrollable viral dispersion, and permanence of digital imprints, there are significant risks of youth making lasting social mistakes.<sup>90</sup> Attendees agreed that in order to mitigate online risks, youth would benefit from greater support in helping them make responsible decisions online.<sup>91</sup>

A number of surveys of college students using social networking sites indicate that while young people are aware of privacy issues associated with using such online services, they generally do not take action to protect private information.<sup>92</sup> Indeed, most adults are concerned by the seemingly offhand attitude many young people take towards divulging potentially damaging personal information on the Internet.

Yet, despite this apparent cavalier approach towards online privacy, students do want to learn more about controlling who has access to their personal information. In *Young Canadians in a Wired World* research conducted by Media Awareness Network in 2005, two-thirds of students expressed a desire to learn how to protect

87. Safer Children In A Digital World, The Report of the Byron Review. (March 2008), p 110.

88. Rosen, L.D., (2008). "The association of parenting style and child age with parental limit setting and adolescent MySpace behavior." *Journal of Applied Developmental Psychology* 29, 459-471. Media Awareness Network, *Young Canadians in a Wired World: Phase II*, research study.

89. See, for example, Danah Boyd (2008) who argues that in social networking sites teens are mirroring dynamics of social-ability formerly confined to shopping malls and parking lots. <http://www.danah.org/papers/TakenOutOfContext.pdf>

90. Have the Digital Media Changed American Youth? Insights from a MacArthur-Sponsored Convening of Researchers. (December 2009), p. 2.

91. Ibid p. 3.

92. Govani, Tabreez and Pashley, Harrier. *Student Awareness of the Privacy Implications When Using Facebook*, Section 5.3.





their privacy online (66%) in school, with interest highest among children in Grades 4 to 6 (75%).<sup>93</sup>

A more recent study of 18-24-year-olds notes that, rather than a lack of concern; it is a lack of knowledge, coupled with an online environment that encourages people to share personal information that is at the heart of this problem.<sup>94</sup> These privacy risks argue strongly for digital literacy programs that go beyond teaching basic computer and Internet skills; only by instilling a depth of understanding and critical evaluation skills in students of all ages, will these risks be mitigated.<sup>95</sup>

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93. Media Awareness Network (2005). *Young Canadians in a Wired World: Phase II*.

94. Associated Press. April 15, 2010. "Study: Young adults do care about online privacy." <http://www.google.com/hostednews/ap/article/ALeqM5hTC6xGNe3KLeY7k1YGkTJxYt3QdwD9F3JLP81>

95. The FCC report on Broadband Adoption and Usage in America documents that non-adopters are 50 per cent more likely than broadband users to believe it is too easy for personal information to be stolen online. It is evident that with greater use comes greater understanding. p. 4.

## Annex D: Digital Literacy Attitudinal Archetypes

*The Report of the Digital Britain Media Literacy Working Group* identifies a series of attitudinal archetypes in relation to digital media and argues that understanding these different attitude types helps in developing strategies to strengthen literacy levels.<sup>96</sup> Different attitude types are identifiable at various stages of literacy and as such require resources suited to their needs. The attitudinal segments identified in the *Digital Britain* report include the following: Engaged, Economisers, Pragmatists, Hesitants and Resistors. In order to simplify this discussion, we will focus primarily on the three main segments: Engaged, Hesitants and Resistors.

The gaps in attitudes toward digital media are often related to age, with Resistors being the oldest segment of the population and Engaged, the youngest.



- **The Engaged** – especially adolescents and teens – have the strongest relationship with digital media: they are heavy users of the technology and are enthusiastic about how it fits into their lives. Engaged have the potential to add the most economic value, functioning comfortably as both creators and consumers of digital content, tools and interaction. This may be a more economically viable group to target with digital literacy initiatives, as they are easy to reach through school curriculum.

These users usually have basic “use” skills, but may lack life experience and maturity – making them vulnerable to potential risks and privacy issues. Increased literacy, in the form of critical evaluation, awareness of risks, and ability to create, is most important for this group.

- **The Hesitants** are in the mid-age range between Engaged and Resistors, with 53 per cent between the ages of 35 and 64. Hesitants are aware that they are not getting the most out of technology but at the same time tend to dismiss the potential benefits. A Hesitant could be characterized as someone who uses e-mail when necessary for work but is not comfortable experimenting with new forms of digital media beyond the bare minimum needed to complete a specific, practical task. This attitude is often due to a lack of confidence in using digital tools, and a lack of awareness of the benefits.

<sup>96</sup>. Section 5.6. An alternative attitudinal breakdown used by the FCC in the report on Broadband Adoption and Use in America (pg. 6) is Digitally Distant, Digital Hopefuls, Digitally Uncomfortable, Near Converts. The age and types of barriers to adoption are similar to the categories and analysis we use above.



Hesitants are the most likely to profit from digital literacy support. Literacy initiatives for this segment should focus on all three elements of digital literacy, from basic use through critical evaluation to creation.

Another important consideration with this group is that the younger range of Hesitants – ages 35-45 – is likely to include parents of children who may be outpacing them in Internet use. There is no doubt that adults want to be involved in guiding their children’s online explorations: in a 2005 survey conducted by Ipsos Reid for Media Awareness Network, 91 per cent of parents interviewed believed themselves to be most responsible for teaching young people to think critically and make good decisions about popular media including the Internet. If “Hesitant” parents are to successfully do this, they need digital literacy skills of their own and the confidence and proficiency in digital technology to effectively guide their children.<sup>97</sup>

- **The Resistors**, mainly those over the age of 65, display little or no interest in changing their relationship to technology and do not see the value of incorporating digital media into their lives. They believe that the risks, costs and nuisance factors far outweigh the benefits. A successful digital literacy campaign for this segment has first to provide a convincing value proposition that presents compelling reasons for them to become interested in using digital media technologies.

It is important to identify and differentiate Resistors who appear to be resisting technology adoption due to economic factors. Literacy initiatives for this segment must not only promote the benefits of digital literacy but also provide the public resources to make access to digital technologies more affordable.

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97. Media Awareness Network (2005). Survey of Parents.