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.

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.\(^2\) 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.\(^3\)

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\(^3\) 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 email: 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.”

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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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

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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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. 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:


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 21st 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 21st Century. [http://www.newmedialiteracies.org/files/working/NMLWhitePaper.pdf](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.
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.

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