ACCC's Response to Industry Canada's Consultation on Improving Canada's Digital Advantage

Association of Canadian Community Colleges

July 2010

Executive Summary

As the national and international voice representing over 150 publicly-funded colleges, institutes, polytechnics, cégeps, university colleges and universities with a college mandate, the Association of Canadian Community Colleges (ACCC) welcomes the opportunity to provide input to Industry Canada's consultation on a Digital Economy Strategy for Canada.

Colleges ensure that Canadians have the advanced skills to remain productive, deliver industry and community-based services and foster applied research and innovation. Digital technology plays a critical role in the provision of learning opportunities. With campuses in more than 1,000 rural and urban communities across Canada, colleges are uniquely positioned to respond to the government's goal of improving Canada's position in the digital economy.

The Association's submission to the consultation process provides a series of recommendations under three key themes: the capacity to innovate using digital technologies; building a world -class digital infrastructure; and, building digital skills for tomorrow.

ACCC recommends that federal research and development funding be increased by five percent, with the additional amount dedicated to innovation, applied research, product development, technology transfer, and commercialization projects of colleges with their private sector partners.

ACCC recommends that the government enhance Copyright Legislation to facilitate the reproduction of digital materials for colleges and designate proprietary frequencies for educational purposes.

The government should also establish a college infrastructure and equipment fund adequate to secure the supply of advanced skills required to support a digital economy, and allocate more resources to ensure that digital learning is accessible to disadvantaged groups.

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ACCC is the national and international voice representing over 150 publicly-funded colleges, institutes, polytechnics, cégeps, university colleges and universities with a college mandate[1]. Colleges ensure that Canadians have the advanced skills to remain productive, deliver industry and community-based services and foster applied research and innovation.

Digital technology plays a critical role in the provision of learning opportunities. With campuses in more than 1,000 rural and urban communities across Canada, colleges are uniquely positioned to respond to the government's goal of improving Canada's position in the digital economy. These institutions provide flexible and adaptable community learning resources and are the catalysts for industry – education interaction, addressing the relationship between advanced skills and local economic development.

The Association's submission to the consultation process provides a series of recommendations under three of five key themes:

A. Capacity to Innovate Using Digital Technologies;
B. Building a World Class Digital Infrastructure; and,
C. Building Digital Skills for Tomorrow.

A. Capacity to Innovate Using Digital Technologies

Applied Research in Colleges

The federal government recognizes that Canadian industry sectors, and in particular small and medium-sized enterprises (SMEs), need to adopt, use and update the use of digital technologies in order to sustain a strategic competitive advantage.

Colleges work with SMEs to innovate and strengthen the economy. They help businesses start, develop and grow. They conduct, and engage students in applied research and development that enable businesses to improve and develop new or improved products, processes and services and adopt new digital skills, thereby advancing commercialization, technology transfer and opportunity.

Working with both private and public organizations to nurture and foster growth in the Information and Communications Technology (ICT) sector, colleges are key players in producing the advanced skills critical to Canada's success in a global, digital economy.

[1] This document will hereinafter refer to colleges, institutes, polytechnics, cégeps, university colleges and universities with a college mandate as colleges.

The Digital Centre for Real-Time Production at Sheridan College Institute of Technology and Advanced Learning is a clear example of how a collaborative approach between a college and its industry partners contributes to improved technology, and provides more cost effective avenues and better-trained professionals.

Colleges are also a valuable health research resource in Canada. They conduct clinical trials, develop prototypes, conduct simulations and visualizations, develop new processes, with a focus on knowledge transfer and diffusion into the health sector. As future employers and employees in the health sector, college students are given the opportunity to participate robustly in innovation and research tied to the needs of the community and the private sector. Incubating a balance between creative and practical talent and educating highly-qualified people with innovative instincts is key to the college mandate.

Budget 2010 was a major step in recognizing the contribution of colleges in supporting the private sector's need for applied research, product and process innovation, commercialization and technology transfer. The federal government doubled the College and Community Innovation (CCI) Program to $30 million per year to support additional collaborative applied research projects in colleges. While the increase to CCI was a step in the right direction, the investment is minimal in comparison to total federal research expenditures estimated at $2.9 million per year.

The Government of Canada must continue to invest on a larger scale in innovation for the marketplace and the diffusion of new technologies.

Recommendation:

Increase federal research and development funding by five percent, dedicating the additional amount to innovation, applied research, product development, technology transfer, and commercialization projects of colleges with their private sector partners. This could support initiatives such as the creation of Centres of Excellence in Digital Technologies.

Digital Reproduction and Copyright

Traditional classroom-based and distance learning are increasingly being supplemented by the use of web-based services, cloud computing and other emerging technologies dependent on the Internet. In a digital world, colleges must allow students and instructors to access information and knowledge that is available primarily in a digital format.

Copyright legislation must therefore seek to balance the rights of copyright owners with the unique role and needs of the educational community. The reproduction of on-line works for colleges is essential to their ability to provide graduates with the advanced skills to support an innovative, global and digital economy.

Recommendation:

Enhance Copyright Legislation to facilitate the reproduction of digital materials for colleges.

B. Building World Class Infrastructure

Access to Spectrum and the Education Sector

Over the past ten years, access to radio Spectrum has been a valuable resource for colleges in providing support for the development of multimedia and interactive online learning content not only in urban areas but also in underserved communities. This was the result of a licence requirement by Industry Canada and wireless broadband networks such as Inukshuk Wireless, to contribute through Provincial Learning Plans, four percent of their net profits to support educational access/use of broadband. College educators and students have benefited enormously from projects funded by these Learning Plans and have set up wireless networks allowing students and faculty to connect on campus and access on-line learning content.

Colleges are increasingly offering programs in a digital format, incorporating new technologies into the learning landscape and making use of tools and applications such as Sharepoint, Podcasts, Twitter, Blogs and many more. These, as well as devices such as iPhones and Blackberries, require networks that can handle more and more data.

Unfortunately, Industry Canada intends to re-designate the frequencies for mobile/radio broadband (4G wireless services) for next generation wireless use solely to the private sector. This will likely mean the end of institutionally-controlled wireless networks, as the frequencies will only be available through commercial carriers.

In a time when education budgets continue to shrink, colleges are increasingly grappling with ever-escalating needs for more wireless broadband access at reasonable rates. Moreover, the requirement for a portion of revenues to be set aside for educational benefit has already been eliminated. Yet, the commercial revenue potential of 4G network services is immense.

How can colleges continue to provide the advanced skills needed for Canada to become more productive and innovative in a digital economy? **Excluding education is shortsighted from a public policy perspective.**

Recommendations:

Designate proprietary frequencies for educational purposes similar to the U.S., where next generation campus wireless networks are primarily controlled by the education sector.

Initiate a national dialogue with educational organizations to explore how the education community can develop and manage a part of the radio Spectrum on their own.

Rural and Remote Communities

Growing labour market shortages, low adult education levels, the educational needs of a rapidly-expanding aboriginal population and the shift towards a knowledge-based digital economy will require that rural communities have access to more sophisticated education and training programs, including the expansion of distance and digital technology enhanced opportunities. Inadequate resources for technology enabled/delivered education and limited broadband access are significant barriers to reaching Canadians from rural areas. Canada's broadband penetration (2Mhz) pales in comparison to other countries such as Japan (62Mhz) and Korea (49Mhz). In addition, many rural Canadians do not have the skill sets to use such technologies, or the access to technology-based learning materials and technological infrastructure.

Colleges are firmly rooted in the rural and remote communities they serve and are seen as the hub of community response and local socio-economic well being. These institutions are a valuable resource in providing training and equitable access to digital on-line learning tools.

While the recently-launched *Broadband Canada: Connecting Rural Canadians Program* is a step in the right direction, building college capacity in rural and remote communities is critical to ensuring that all Canadians have the necessary advanced skills to be productive in a digital economy.

Recommendations:

Establish a college infrastructure and equipment fund which rural and remote colleges can access to enhance their technology-based learning materials and broadband access.

Explore the potential of a shared infrastructure model which would provide sufficient resource capacity for shared applications, multi-learner user groups, shared strategies to overcome distances, and shared infrastructure-technologies, communication pathways and resources. This model would alleviate multiple underperforming ones.

C. Building Digital Skills for Tomorrow

Developing the knowledge, skills and capacity of Canadians across the country to work in a digital environment will be key to positioning Canada as a leader in a global economy. This includes ensuring access to advanced skills for all Canadians, including designated at risk groups such as adult learners with basic/low essential skills, aboriginal peoples, immigrants, older displaced workers and people living in remote and isolated communities.

With digital skills in high demand across all sectors of the employment market, colleges across Canada offer training programs that prepare graduates for careers in the digital world. For example, colleges are producing digital graphic producers, web designers, electronic animation specialists and gaming technicians. Colleges are ensuring that the next generation of digital professionals is both technologically adept and able to respond to the changing needs of industry.

Long waiting lists, aging infrastructure, deferred maintenance, antiquated teaching equipment, space shortages and an impeding shortage of faculty will require that existing college capacity be secured and new capacity developed.

Improving Canada's digital advantage will require colleges to have the infrastructure to support increased integration of digital technology into curriculum and provide retraining for faculty. Bandwidth, wireless technology and servers to support that integration are prohibitively expensive. The limited capacity of colleges to support these necessary changes remains an unfortunate reality.

Recommendations:

Establish a college infrastructure and equipment fund adequate to secure the supply of advanced skills required to support a digital economy.

Allocate more resources to ensure that digital learning is accessible to disadvantaged groups.