Athabasca University
CANADA'S OPEN UNIVERSITY

Digital Economy Strategy Consultation
Athabasca University - July 9, 2010
A Paper to review the overarching strategic issues

Executive Summary

Athabasca University, Canada's Open University, welcomes the opportunity to engage in the dialogue regarding our national digital economic strategy. Our primary contribution consists of two documents; the attached Response document that directly addresses the *Consultation Paper* questions that most closely related to Athabasca's mandate and mission, and this Paper, which seeks to provide an overarching response to the relevant issues.

The main points reviewed in this document are summarized below for ready reference;

- The digital economy is based on the creation, transmission and dissemination of knowledge.
- E-learning is an essential component of a modern learning and research infrastructure.
- Government should not pick winners; fair dealing is as important as the IP economy.
- Every Canadian needs to be proficient in digital economy skills; e-learning supports this.
- Accessibility to quality content is an economic driver. Rural citizens should be able to access this content online.
- Policy should not create silos but support all innovation, including non-traditional "outside the box" initiatives.
- Portability of credentials and accreditation among provinces should be national, supporting economies of scale.
- Supporting Open Educational Resources can be a cost-effective means of supporting learning and training.
- A national "cloud" network to support e-learning would demonstrate Canadian leadership.

Introduction

As a Canadian university that teaches more than 40,000 students online from all provinces and territories, Athabasca University has a special capability and interest in promoting the digital economic strategy. We start from the premise that the digital economy is based on knowledge, and as such it is often referred to as a "knowledge economy". Many people use this term without understanding its real significance, which is that **the overwhelming majority of economic activity and value generated no longer depends on physical goods but rather on knowledge. Knowledge does not enable the digital economy; it IS the digital economy**, which is based on the creation, transmission and dissemination of knowledge. This knowledge value can stand alone as in the banking and information economic sectors, or it can be embedded in physical objects. For example, when you buy a finished good like an automobile the real value rests not in the metals, plastic and rubber, but in the knowledge that has been harnessed to create it. The Alberta oil sands would just be sticky mud if not for the educated engineers, trained workers and other professionals who know how to extract the oil, transport, distribute and market it.

This knowledge economy is increasingly being led by countries with no natural resources such as Singapore, Taiwan, South Korea and Hong Kong. Their successful economies rest squarely on the back of their educated population. These countries recognize learning - and particularly online, or e-learning - as being central to their economic prosperity, especially in an international context. Australia too is focusing on an enabling strategy that supports the export of e-learning products and services by providing international opportunities for their e-learning companies to demonstrate market leadership. Its national economic policy focuses on profiling Australia as a leader in quality, innovative e-learning solutions and sustaining its international reputation in this sector. Canada needs to move in similar directions.

"Fair Use" Economy

The Canadian government has a unique opportunity to create a policy framework in which business can be competitive. In the digital economy, these policies should not be seen as favouring one economic sector over another, but rather they should create an environment in which various businesses can be competitive. To date there has been little understanding of the crucial role being played in the Canadian economy by the "fair dealing" economy. In essence, we need to recognize that while the government has a duty to help protect the "intellectual property" economy, **it should not discriminate by supporting older companies' IP over the new emerging companies that need fair dealing in order to operate**. These new companies include internet information, web hosting, software development, and digital device businesses. A recent report about the US economy shows that this sector is almost as large as the IP sector itself, and is growing much faster. Fair dealing is crucial, but in Canada it is in danger of being severely impacted by overbroad copyright legislation. The report (available at http://www.ccianet.org/CCIA/files/ccLibraryFiles/Filename/000000000354/fair-use-study-final.pdf) estimates that the US "fair use" economy has generated more than $4.4 trillion in wealth, equal to one sixth of its entire economy, and employs more than 17 million workers.

Universities also depend on fair dealing and their impact on the economy should not be underestimated. Universities act both as creators and transmitters of the knowledge that underpins the economy and also as economic drivers in their own right, generating substantial dollars in teaching foreign students. With e-learning, this role can be greatly expanded to allow Canada to compete with other countries such as Australia, the UK and the USA, all of whom have been expanding their e-learning capacities internationally. The support for digital locks in recent national legislation will be used to prevent fair dealing businesses from operating effectively and as a result will heavily skew the economy against this emergent sector. Government policy should not pick favourites, but rather facilitate the development of a legal environment that paves the way for all legitimate enterprises.

The Digital Divide

The present policy framework has also been heavily skewed in favour of the big cities to the detriment of rural and isolated communities. This digital divide makes it difficult for smaller communities to prosper – and is not just about bandwidth, but also about access to knowledge databases. At present, small businesses and professionals working in outlying regions do not have the same access to quality digital content as do those in the cities; for example, business men and women in cities can access proprietary knowledge databases by visiting their local university libraries. However, while this information could be made easily available to businesses in rural areas over the internet, government policy prevents this - again limiting fair dealing and thereby creating a disadvantage for rural communities. Opening up access to knowledge to all Canadians regardless of their geography is essential if Canada wishes to be a leader in the digital economy. Economies like Brazil, China, India, and Russia are positioned to overtake Canada and other countries by making such information readily accessible.

We need **every educated person in Canada to be highly proficient in using digital media** - accessing information and making effective use of it by using a wide variety of knowledge engines and devices including the latest learning object repositories, mobile devices, and tablets. The idea that learning with technology is an "add-on" must be dispelled. Technology is an intrinsic part of the modern economy, society and culture and should be viewed as central to education.

Telework and Online Skills for Life Long Learning

A good example of the importance of technology in the economy is the growth of telework in many industries. A large gulf remains between the desire of employees to telework and their ability to do so. In support of their education and training, lessons should be offered using online knowledge repositories and digital media applications and devices including social networking tools, online educational resources, and telecommunications. Online learning should play a greater role in the lifelong education and training of all our citizens. The skills required to learn online are necessary to be an active participant in the digital economy, as well as for becoming a proficient learner.

Mass personalization of learning using social networking tools, multimedia displays, and web conferencing is now possible. Personal learning environments can be used to ensure that each and every learner gets the education or training that is relevant to his or her needs. All full-time students should take at least one course online so that they can learn how to learn in the e-world, a skill that will serve them well throughout their lives and careers. We will then be able to **ensure that labour market entrants have the digital skills needed for participation in the knowledge economy by having e-learning become a part of everyone's educational and/or training** experience - we cannot have a robust economy if our schools and other learning/training institutions are not participating. We also need to develop ways of testing minimal digital competencies for students who are leaving our high schools, colleges, universities and other training centres. This will motivate all institutions to increase the online components of their courses and programs.

Digital Literacy

The primary national strategy should be to **ensure that all Canadians have open access to learning by making effective use of broadband and wireless networks**. With e-learning we can ensure national parity in education and training, meeting diverse needs and bridging the digital literacy gap to create digital citizens. We need to ensure that all our citizens reach a basic level of numeracy, linguistic, and digital literacy so that they have the ability to make effective use of the advanced infrastructure that is available. A focus on the development of basic literacy skills in our two official languages would be an effective means of encouraging the creation of digital media and content among our minority and Aboriginal communities, whose low participation rates can be explained in large part by their lack of access to educational opportunities in our two official languages. Any national solutions to illiteracy simply must include broadband wireless access to e-learning.

Canada has a responsibility to ensure that First Nations communities have access to learning. **E-learning can be an efficient and cost-effective means of reaching the widely distributed Aboriginal communities**, while at the same time training learners in the digital skills that are essential. Moreover, if the current population boom of First Nations youth is not workforce-ready, our First Nations people will remain caught in the "low-to-no-wage/skill" poverty trap.

Innovation Infrastructure

Governments can play an important role in the innovation ecosystem. Providing the foundations for innovation is more important than trying to pick winners by favouring one sector or discipline over another, something that governments historically have not been strong at – including supporting research that overlaps between different disciplines - arts, social sciences, medicine and science. The overemphasis on "Science & Technology" tends to compartmentalize research into specific categories and marginalizes a great deal of really innovative research that, through technology, lies on the cusp of arts and science. The value of research today rests on the ability to effectively access, manipulate, visualize and analyze vast amounts of research data often contrasting information from widely disparate fields; these new approaches are essential components of a digital research environment.

To illustrate the point further - is the economic value of television in the technology or the art? Is the monetary value of the Internet in the software or in the social and other human activities that occur there? Government can augment its existing investment in research by **funding for innovation in whatever form it takes**, in the arts, sciences, social sciences or technology. Canadian companies and researchers working on innovations in social sciences, education or training are currently forced to minimize the social, pedagogical and psychological aspects of their work, however important and innovative, and retrofit their proposals with scientific or technological terms like "software" "applications", "database" development or "human-computer interfaces".

Credit Recognition

Federal support is required to help overcome the isolationist mentality of different provinces and create a national agenda for skills training and learning. This support is particularly important with regard to overcoming interprovincial barriers such as academic credit recognition and transferability. A national initiative supporting digital learning would go a long way in overcoming provincialism and help focus efforts on education and training using digital technologies – online learning. Such an initiative should provide support for e-learning research into how we can best train and retrain employees in the workforce from coast to coast. This would be one way of creating the conditions for the adoption of new ICTs as they become available. The provincial regulations currently blocking interprovincial e-learning and open educational resource initiatives must be addressed; current funding and other transfer mechanisms are now based on the assumption that the learner's residence is the same province as the learner's university or college, but **on-line learning is nationally based and does not fit this model**. The most innovative e-learning institutions and their students, who are often faced with resulting technology deficits or out-of-province fees, are paying the price – and our separate provincial e-learning markets are too small to support major post-secondary undertakings. A federal policy review would also highlight the policies in different departments that inhibit the growth of e-learning.

In support of the digital economy, Canada must increase its labour force and the proportion of workers who are well trained and highly skilled. To do so we must modify our post-secondary educational systems to **allow immigrants and part-time learners in the workplace to become credentialed anytime, anyplace** - without sacrificing the quality of their education or training, so that they can enter the labour force more quickly. The typical 'all or nothing approach' employed by too many credentialing authorities and institutions is becoming ineffective in face of the future of education, in which students will experience a blend of traditional and technology-enhanced learning, at a distance or in the classroom. In addition, both formal and informal learning can be assessed and credentials awarded, using Prior Learning Assessment and Recognition (PLAR). Athabasca University is a Canadian leader in PLAR.

Economies of Scale

Canada needs to develop a **federal/provincial approach that achieves an economy of scale** through the support of national high quality online offerings so that all under-represented

students can bridge the digital divide in either official language. Taxpayers would have a better return on their investment if resources were shared across provincial boundaries and governments would then be well-placed to address emerging challenges in technological literacy and student funding, effectively breaking the barriers to post-secondary learning.

Open Educational Resources represent another way that governments can save money by pooling resources. Educational institutions could develop the world's "best" courses online, and by sharing content we would not have to keep buying and re-buying resources, often from outside the country.   The federal government can stimulate inter-provincial and inter-institutional sharing of learning resources by promoting the development of open lessons, learning applications, and courses. With the imposition of digital locks by publishers, this may be the only cost-effective way that innovative e-learning initiatives can move forward.

The Knowledge Cloud

A Canada-wide distributed collaborative co-ordinating network to support knowledge building for the digital economy would be one way of promoting Canada's leadership by maximizing a digital infrastructure that is built to defined, high quality interoperable specifications. Cloud computing, in which services and storage are provided and shared over the Internet, is becoming more widely used. Such a Knowledge Cloud would take full advantage of Canada's advanced network infrastructure and could serve as a platform to support pan-Canadian initiatives in the creation, transmission and dissemination of knowledge. The Knowledge Cloud could:

- promote the innovative use of technologies to improve learning, workforce productivity and global competitiveness;
- provide inter-provincial co-ordination for e-learning collaborations and development;
- actively seek out and respond to international (tender) requests and enquiries, refer these to appropriate companies or institutions;
- maintain a database of information on Canadian research in e-learning;
- serve as a centre for contacts with visitors from abroad and for organizing visits abroad (conferences, expositions);
- support blended learning, distance education, and hybrids of both, either asynchronously or synchronously;
- independently support French and English language initiatives;
- support the development, adaptation and sharing of open educational resources;
- provide a range of social networking educational tools;
- maintain high quality standards and avoid duplication;
- provide information, training, and support for staff and students in the use of e-learning tools and facilities in collaboration with businesses, universities and provinces;
- promote the use of appropriate international standards and specifications in e-learning;
- promote the use of accessibility guidelines and standards;

- provide support to companies and institutions in their evaluations of e-learning initiatives and, where appropriate, conduct evaluations on request;
- establish baselines to serve as standards for courseware development;
- establish a national credit bank to enable the free movement of students among provinces and public post-secondary educational institutions;
- support the inter-provincial and inter-institutional acceptance of Prior Learning Assessment and Recognition of skills and knowledge gained in the workplace;
- provide an international window to Canadian e-learning companies and institutions for marketing; and
- work with companies and institutions to encourage the export of Canadian e-learning products and services.