Digital Canada

A Vision and Blueprint for a Canadian Digital Nation

DIGITAL CANADA.IO

Join the #DigitalCanada movement – Help Build a Next Generation Digital Supercluster

DigitalCanada.io is a web portal and community organized around a headline theme of defining a vision and blueprint for building a world leading Canadian Digital Nation.

Our ebook provides the first step, collating the key ideas and ambitions that will realize this ultimate goal, to then be implemented through a portfolio of collaborative projects.

A Next Generation Digital Supercluster

The purpose of these is to provide the tools to build a "Next Generation Digital Supercluster", a community platform to achieve the headline goal and itself a world first.

This concept is defined through fusing the research agenda of one of Canada's "Superclusters", notably the Digital Supercluster, with a technology platform that can scale it across the entire nation, an approach Cisco described in this 2010 white paper – Next Generation Clusters.

Although Canada's Superclusters program are regional in focus, they actually offer an R&D agenda that is ideal for the whole country, described in detail in their Capacity Building strategy.

In particular in line with the goals of DigitalCanada.io, the Digital Supercluster identifies an R&D framework ideal for chartering a network intended to develop Canada's digital economy, including:

- Develop Indigenous talent for future workforce and support Indigenous enterprises;
- Leverage work-integrated learning platforms;
- Develop diverse talent through relevant certification, work experience, education and training;
- Develop industry-relevant secondary, post-secondary and/or post-graduate expertise in digital innovation;
- Leverage access to Canada's pool of scientific, technical, engineering expertise and capabilities;
- Encourage and enable senior-level digital and business development talent to work and develop skills in Canada;
- Support workforce transformation for industries facing digitization and automation, including re-skilling of Canadians;
- Use online or technology-based methods to reach potential talent, both to encourage them to pursue a career in tech and to train relevant skills; and,

- Develop best practices of diversity and inclusion that enable organizations to be more inclusive of participation by women and other under represented groups.

Next Generation Cluster

Another excellent reference document to guide this ecosystem design is the Cisco white paper '*Next Generation Clusters – Creating Innovation Hubs to Boost Economic Growth*', defining a new paradigm which calls for three fundamental shifts:

- From geography-based to community-driven.
- From locally processed innovation to open, borderless innovation.
- From technology-driven to technology-enabled.

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A fundamental principle at the heart of Michael Porter's cluster model, upon which the Superclusters are based, is that they are centered geographically, typically organized around a university who provide the backbone of the R&D capacity.

The simple but transformative idea for Next Generation Clusters is that they are virtually organized, around subject matter not geography, with Cisco proposing this community is achieved through various social and video collaboration technologies, that make possible innovative new business models for the process of innovation itself, such as:

- **A social-video community** where contest participants can record, edit, and share videos; comment, rate, and tag interesting content.
- **An online meeting platform** for audio and web conferencing that enables users to share documents and desktops in real time.
- **A search platform** that dynamically tags content as it crosses the network, allowing contest participants to accurately locate and rapidly connect with the best experts and information on a particular topic.
- **"Virtual Tuesdays,"** when entrepreneurs make a series of pitches to potential investors around the world. Virtual Tuesdays are modeled after "First Tuesdays," a social movement focusing on technology, the Internet, and future innovation that started in 1999 in London's Soho district, eventually spreading across Europe.

- **The Startup Stop and Shop**, a web space where video recordings of all entrepreneurs' pitches are made available so that potential investors can search for opportunities at their own leisure. "Virtual Guardian Angels," a mentorship program that connects those seeking and offering best business practices and advice, could provide yet another virtual experience.
- **An idea market** that lets contest participants establish the value of their ideas through trades. Participants purchase shares of ideas with "virtual currency" awarded to them, based on the value of their
contributions to the platform.

Where the paper was written in 2010 and by a vendor, it proposes more traditional, proprietary collaboration technologies, and so our goal is to achieve the same system, using modern Cloud-based web applications.

We've established the capabilities that could enable all of these ideas, and so the next step is to now collaboratively explore and develop the specific models for implementing them.

Canadian Digital Industries - An Urgent Call To Action

This CBC interview from 2018 sets the scene for the purpose of this site – To ask and answer the question: What would it take for Canada to become the world's leading digital nation?

Reporting on the release of the government's Digital Industries report, CBC anchor Vassy Kapelos asks Shopify's CEO Tobias Lutke what actions should follow so that Canada can become a world leader in digital industries.

The report paints a picture of Canada's tech sector falling behind the rest of the world, and so a panel of Canada's leading tech CEOs and experts were polled to ask what steps the nation can take to redress the situation, and release the full potential of the country's wealth of digital innovators.

I've spent a lot of time with industry experts this past year thinking about how Canada can become a digital leader. Today, we published a report with recommendations to the federal government on how to get there. The full report: https://t.co/6RnSheOr6X. Here's the TLDR;

— Tobi Lutke 🌳🌲🛒🕹 (@tobi) September 25, 2018

In particular Lutke identifies the ambition of doubling the number of billion dollar revenue digital companies from 13 to 26 by 2025, those who can act as major anchors for growing the sector in key regions.

Hyper-growth Passport

He also identifies a key government mechanism for 'pushing from behind' this sweet spot of startups in between the phases of private through public growth. As the Financial Post reports a "hyper-growth passport".

"The Hypergrowth Passport would be an accredited designation for digital firms headquartered in Canada with more than 40 per cent year-over-year revenue growth (past $1 million in one year)" the document says. "The Canada Revenue Agency (CRA) should automatically determine if companies meet these criteria as part of its tax assessment, similar to how it detects individual benefit eligibility automatically."

Companies that meet the criteria, as part of a pilot project, would get special help from Ottawa in navigating government programs, set-aside access to some services, and they'd also get a powerful seal of approval from government that the business is on track for success."

Digital Action Plan

In their review article ITbusiness.ca provides a detail analysis of the government report, which defines four main recommendations:

1. Own the podium: Scale up Canadian businesses.
2. Attract, retain and support skilled talent.
3. Transform Canada into a digital society.
4. Leverage IP and promote the value of data.

The Blueprint for Canada's Digital Economy

The keynote theme for DigitalCanada.io is most powerfully conveyed through this Star article by Alex Benay – The Blueprint for Canada's Digital Economy.

Alex stipulates five digitally driven assets that Canada needs in order to fully compete, protect, and thrive in this century — a blueprint for a Canadian digital economy:

A National Digital Identity Program:

Appoint a minister who is held accountable to deliver on a national digital identity program.

Digital Rights for the Digital Age:

Privacy and copyright laws should be re-examined, and basic internet access needs to be equally available throughout Canada.

Basic Connectivity for Canadians:

Invest an equivalent amount in basic internet connectivity for all Canadians for every dollar we invest in roads or bridges.

Machine-Enabled Infrastructure:

To increase economic productivity, Canada needs a national digital exchange platform in order to move data securely and swiftly across and between sectors.

Increased Computing-Power:

Increase investments in 5G, in supercomputing and other upcoming computing infrastructures. If we don't, we risk putting our global competitiveness on the line.

A New Social Contract

Also writing for the Star digital economy luminary Don Tapscott suggests the broader social transformation such a strategy would catalyze.

He describes how the early excitement of the potential for the Internet to change the world took a wrong turn and instead concentrated many ills rather than addressing them, such as the hording of vast wealth, and our personal data, by the new tech giants.

Through harnessing technologies like the Blockchain Don proposes that Canada modernizes itself root to branch, not just in IT terms, but a wholesale transformation of all the policies and institutions that govern how society works, engendering an entirely new model for social democracy.

It's also time for business leaders to participate responsibly — for their own long-term survival and the health of the economy overall. Even — or especially — in a time of exploding information online, we need scientists, researchers and a professional Fourth Estate of journalists to seek the truth, examine options and inform the ongoing public discourse. We each have new responsibilities to inform ourselves in a world where the old ways are failing.

TECHNATION urges bold public sector policy to fuel economic growth and drive digital economy

In their September press release industry body Technation captures the zeitgeist defining the stark challenge facing Canada's digital economy right now.

Canada's digital economy generates over 1 million jobs, contributes over $120 billion annually to GDP, invests $7.5 billion annually in R&D, and has taken over as the biggest sector driving Canadian economic growth.

Innovation Laggard

In the first of their 'Back on Track' series of videos, from 3m:30s Angela Mondou, CEO of Technation, and Kevin Peesker, President of Microsoft Canada, explore the most fundamental of challenges the Canadian economy faces.

Canada ranks 22nd on the 2020 Bloomberg Innovation Index and 21st on the World Economic Forums ranking of technology adopters.

It's a puzzling challenge for Canada. Peesker summarizes the massive ecosystem Canada boasts in terms of technology innovation, from the universities through the many startup clusters. However, quite simply, Canada's competitors are doing more to adopt technology to drive competitiveness. For example Canada ranks 3rd for creating AI but 9th for adopting it.

Recovering from Covid

From 7m:40s Angela zooms in on the specific gap of SMEs not scaling up as fast as they might, a challenge she believes can be addressed through the government enabling more agile procurement. Technation has presented its Innovation Adoption Program (IAP), which addresses this challenge, to Ministers of the Crown and opposition parties over the past few months, and they explain the program in detail in this Globe and Mail opinion piece.

TECHNATION urges bold public sector policy to fuel economic growth and drive digital economy

Kevin responds by identifying digital skills as the most fundamental advance needed to achieve this, highlighting a report stating 85% of Canadian CEOs are placing more technology capital investments, versus 67% at a global level, however when it comes to skills development, while 33% of global CEOs are investing into tomorrow's workforce skills, in Canada this is only 16%.

Microsoft is setting out to address this gap through:

1. Providing young people and future leaders with the skills they'll need.
2. Upskilling those currently in the workforce.
3. Reskilling job seekers.

Top Trends

From 11m:05s Angela asks what the biggest tech trends and opportunities are Kevin foresees for the next 12-18 months for Canada, that would achieve the most impact on these challenges.

Kevin answers that through his experiences of interacting with the nation's top executive leaders these are adopting Cloud computing, the second is Data, harnessing the platform the Cloud provides to make use of powerful tools like AI and Data Analytics, and third the major trend he sees is 'The Virtualization of Everything', such as greatly improving and modernizing Canada's Healthcare industry.

Nova Scotia's 'Ivany Report' detailed a microcosm of the challenges facing Canada as a whole, indeed for many nations around the world.

It tells a story of economic policy failing to adapt to modern times, of chronic underemployment for Nova Scotians, of a base of traditional resource industries no longer relevant to a global economy and of a crippling dynamic of an aging population not being refreshed through adequate levels of immigration and thus simply dying out.

"In 2014, a provincial report revealed that Nova Scotia had the oldest age profile of any province except Newfoundland and Labrador and had more people retiring than entering the labour force.

The outflow of people 20 to 34, the report warned, was leaving a wake of wreckage: "When they leave, to a serious extent, they take the future of their communities with them."

It's not unique to Nova Scotia or even Canada.

As the Scotsman reported in 2018 Scotland's rural communities face losing up to a third of their working age population by 2046, losing more than a quarter of their population within the next thirty years, with Western Isles, Argyll and the Southern Uplands among the worst affected.

"A report by the James Hutton Institute found that "sparsely populated areas" – defined as those where fewer than 10,000 people can be reached within 30 minutes of travel – account for almost half of Scotland, but just 2.6 per cent of the population live there."

In Spain they are selling off whole 'ghost villages'.

Nova Scotia Startup to Pioneer the Future of Work: "Cluster Employment"

Workers on Tap – Tapping into the Gig Economy

The answer is the 'Gig Economy', referring to the overall trend of employment shifting more to contracting self-employed freelancers, a trend that the Economist described as Workers on Tap.

The Cloud is enabling the 'On Demand Economy', exemplified by ventures like Uber taxis and Airbnb. These ventures disrupt traditional industries by overlaying a 'digital mesh' across cities to better harness their idling resources, like available accommodation for rent or freelance taxi drivers looking for work.

"Every week, new services launch that aggregate and organizes freelancer labor (those with excess time) to help those who have money but not time."

On Forbes.com Abdullahi Muhammed writes how by 2020 half of all American workers will be freelancers. NACo provides a detailed report on the same trend. Sites like Freelancer.com, Abodoo, Peopleperhour and Fiverr, among many others, all offer marketplaces where you can hire workers on tap.

For some sectors like tech it's increasingly becoming seen as the norm for an employed engagement; many leaders recognizing simple ideals like how remote workers outperform office workers.

The Future of Work

It's not a new idea, also back in 2004 Thomas Malone wrote about the coming Future of Work, and long before that the original visionary Charles Handy described how our employment will evolve to become 'portfolio working'. Malone said:

"Imagine organizations where most workers aren't employees at all, but electronically connected freelancers living wherever they want to."

Handy offers a blueprint for how to practically structure such a virtual team that we will implement, describing a 'Shamrock organization'.

Cluster Employment

Nova Scotian startup P4G is pioneering a new venture to make Portfolio Working possible and accessible for businesses and individuals.

The principle challenge with this trend is that while the technology to enable it has progressed at pace, other enabling aspects like the legal framework, taxes et al have not. The dark side of the Gig Economy has seen large corporates abuse it simply as a mechanism to avoid their employer responsibilities.

This is what P4G are setting out to address. As Entrevestor reports they've leveraged technology to enable the structures of Portfolio Working, launching a platform ClusterEmployment.com where employers can pool their part-time role requirements and thus create the liquidity such that they can attract candidates who can work across multiple organizations, fulfilling the shared requirements each has without them having to take on all the burden of a full-time employee. Similarly for Portfolio Workers the toughest challenge is finding new clients, and so it meets their needs too.

Digital Enterprise Centers

This would be an extremely powerful economic model when combined with 'Digital Enterprise Centers'.

Interestingly the trend does not dictate entirely individualized, work-from-home scenarios, indeed the key point for rural communities looking to attract this work force is that it works best with some office facilities, provided very locally.

Digital Enterprise Centres are 'Co-working' places of work, simply offices rented in small units to one person or more at a time, so that they can enjoy the benefits of those facilities but without having to pay for the entire place. The same shared service model as Portfolio Working.

Their role as economy enabling hubs is key – While the Gig Economy is inherently about individuals working alone as freelancers, often via online virtual tools and booking methods, there is still considerable value in facilitating physical collaboration.

This is one of the key recommendations made by the Scottish Rural College for tackling the same root issues in Scotland, unlocking £2.5 billion in growth for the nation through better digitally enabling their rural communities, where they describe them as "Digital Enterprise Centres", with the recommended action being:

"Establishing hubs in rural towns which businesses can use or visit for better connectivity, start-up workspace, hot-desk space and training."

A key dynamic is of course connecting to the Digital Economy – These work spaces provide the 'tools of the trade', enabling new micro-businesses to participate in a variety of online digital markets.

We can see them as essential foundations for the Gig Economy, when you consider factors such as the challenges for employers looking to utilize them on a large scale, challenges such as helping to create belonging, through a better program of support for how managers can best support a gig economy workforce remote workers.

Coworking centres can contribute towards these goals as shared office environments are ideal for cultivating mentorship and support environments, and is also a sound business model in it's own right – The gig economy has been driving an explosion in demand for coworking office space.

Conclusion – Quality of Life

For Canada's rural towns seeking to retain and attract young workers and their families, rather than watching them leave for the cities never to return, this is how to do it. It marries the most modern of industry trends with the biggest asset they offer: A quality of life.

This Sharemyoffice article suggests Rural Coworking hubs are the future of the rural economy, and they're right, and in their Medium article describe why:

"Also if you work in a small team, the bonds made in rural coworking spaces tend to be stronger, since in these situations you normally live and work from the same place. Whether that includes, hikes and bike rides, swimming or surfing, skiing or rock climbing, living outside of the cites allows us to reconnect with the nature —which is what most of us need from time to time."

Thousands are moving out of the cities to enjoy a better quality of life, and Canada's rural communities are ideally placed to cater for this new lifestyle. There is a uniquely powerful perfect storm of opportunity to promote Canada as the best nation in the world for digital living and working, and through Cluster Employment it is Canadian entrepreneurs like P4G that are making it possible.

Columbia Lake Technology Center: Exemplar Blueprint for a 'Digital Enterprise Center'

In the previous blog we describe the theory of 'Digital Enterprise Centers', co-working office communities at the heart of the Digital Economy.

Located in the stunning village Canal Flats BC, the Columbia Lake Technology Center offers an exemplar blueprint of this theory in action.

It really is testimony to the process of adapting to the transition from Canada's traditional resource dominated industry to one of the new world of Internet technologies.

As they describe:

"At the Columbia Lake Technology Center (CLTC) we see an incredible opportunity to support small communities in preparing for a successful future as economic drivers shift. For us, Future Proofing has two pillars. Firstly, by developing, encouraging and supporting sustainable, value-added businesses, we can help to drive an economy that provides meaningful work for many different skill-sets and talents. Secondly, by creating and collaborating on educational opportunities, we can support a shift in skills and mindsets to prepare our community and region to thrive for generations to come."

Columbia Lake Technology Center: Exemplar Blueprint for a 'Digital Enterprise Center'

The Star writes how the center was created by converting an old saw mill, when the remote town of 800 people in southeastern B.C. began evolving from a forestry-dependent economy. It's housed inside the skeleton of a century-old mill — once the town's main employer, but closed at the expense of 75 jobs and leaving the community at risk of becoming one more of rural Canada's ghost towns.

The CBC describes how the idea was conceptualized by Brian Fehr and Brian Fry, entrepreneurs from the forestry and data center industries respectively, developing a partnership that addressed this painful event for the region by combining their extensive expertise of building successful businesses to create a world class technology center.

Fry had a powerful vision for how state of the art IT facilities could be ideally situated in a place that exploits the already present requirements like power, creating a resource usually only possible in big cities in Vancouver, but is located in an idyllic rural setting.

Now the buildings that once housed log sorters and giant saws are now home to high-tech electrical equipment and cranes for lifting shipping containers filled with hundreds of data servers, providing a home to initiatives such as Virtual Reality learning for school children.

On the BC government site they explain the background of how the project came about and importantly the collaboration with different levels of government to realize a strategy that benefited multiple local economic development needs.