The Canada Cloud Business Plan

A Technology Roadmap for Cloud Computing in Canada

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## Contents

Executive Overview......................................................................................................................... 3

Canada’s Cloud Economic Action Plan............................................................................................ 3

Innovation Best Practices - Building Canada’s Digital Advantage................................................... 3

High Growth Entrepreneurship........................................................................................................ 4

Next Generation Cluster – Virtual Innovation Hubs ........................................................................... 4

Introducing Procurement Commercialization .................................................................................... 5

The Canada Cloud – Template for a Technology Roadmap.............................................................. 6

Budget................................................................................................................................................ 6

1. Introduction and background .......................................................................................................... 7

2. Technical needs and capabilities.................................................................................................... 7

3. Technology development strategy .................................................................................................. 7

4. Skills development strategy........................................................................................................... 7

5. Decision points and schedule ........................................................................................................ 7

6. Conclusion....................................................................................................................................... 7

7. Appendices...................................................................................................................................... 7

Follow-up .......................................................................................................................................... 7
Executive Overview

Canada's Cloud Economic Action Plan

The objective of this document is to detail an ongoing business plan to develop a Cloud Computing industry in Canada, one so successful it grows to become a global world leader.

This is the big audacious goal that will underpin a major contribution to the economic revival of Canada’s technology sector outputs, ability to attract inward investment, and more. Our Canada Cloud business plan can be thought of as ‘Canada’s Cloud Economic Action Plan’. A vibrant tech industry will contribute significantly to economic growth, jobs and international expansion.

Check out our ongoing ‘Industry Leadership Profiles’ for a Who’s Who of the Canadian Cloud industry leading this important initiative.

Innovation Best Practices - Building Canada's Digital Advantage

Our business plan is based on analyzing and implementing the key recommendations from various Innovation Best Practices documents. This includes academic reports, white papers from IT vendors like Cisco and Microsoft and also the Government’s own recommendations like ‘Building Canada’s Digital Advantage’.

Canada has a notorious and dreaded ‘Innovation Gap’, principally characterized by a lower `Multi-Factor Productivity` measurement, a statistic that has been in decline since its peak in 1984, which has now dropped to a 25-30% lesser level than USA counterparts.

MFP is the multiplication of the two foundations that define economic impact: 1) Labor input, the people employed into jobs, and 2) Capital input, the money that is used to employ them. MFP represents 3) and is determined by how intelligently 1) and 2) are combined.

It’s believed that fundamentally this is Canada’s Innovation Gap, this difference in MFP performance levels, and often this is accredited to Canada’s inherent nature of being a harvester of natural resources rather than a pioneer of business and IT innovations, which can result in lower levels of ambition and investment in the innovation required to boost MFP.

The reports also identify other compounding factors such as weak public policy related to the development of the ICT sector. However equally as this collection of best practices themselves demonstrate is there is also no shortage of other alternative documents that can form the missing digital ICT industry strategy, furthermore growth markets like Cloud Computing are the ideal way to implement and thereby demonstrate their recommendations.
High Growth Entrepreneurship

For example one of the programs is ‘A National Strategy for High-Growth Entrepreneurship’, which describes the need for more ‘Gazelle’ type start-ups, as these account for job creation and economic development in disproportionately high numbers.

Perfect examples include Rypple and Radian6, two Canadian start-ups acquired by Salesforce.com, for $270m in the case of Radian6. Such a large return on investment so quickly is only possible through these high-growth organizations, which in this case is due to the ongoing explosive demand for ‘Cloud 2.0’ services. This is an enormous market still only at the embryonic phase and so there are further M&A opportunities of this nature.

Therefore the role of an industry-led cluster like the Canada Cloud Network can be seen as primarily to help build the conditions for incubating and re-creating more similar start-up growth and M&A success.

To support this, as described in their own best practice materials the purpose of an industry-level product Roadmap is then to enable a shared services approach to this R&D innovation, enabling academia, government and the IT industry to develop a common vision for the technological evolution and customer requirements of Cloud Computing services, and then commit R&D resource to it.

The cluster also develops and provides other support resources like training materials. The Digital Advantage report highlights a lack of managerial skills to quantify and adopt these technologies, and as such are being out-paced by other nations like the USA who has a considerably higher rate of technology-led innovation. The cluster can address these gaps.

Next Generation Cluster – Virtual Innovation Hubs

Naturally one of the best demonstrations of the market opportunity that Cloud Computing represents is to apply the benefits to this process of innovation itself.

This is the main point of the thought leadership piece from Cisco: Next Generation Clusters, which advocates the use of new social collaboration tools, like Telepresence and social software, for better collaborative innovation, via virtualized ‘Innovation Hubs’.

In their white paper they describe how their ‘Cloud 2.0’ technologies can be used for enhancing the original cluster model, developed by Michael Porter, by virtualizing it into a global community.
Introducing Procurement Commercialization

A critically important recommendation that the NGC document makes, that all the others do too, is the opportunity and need for government themselves to play a more proactive role in innovation, especially through more use of their massive procurement volumes as a stimulus for local start-up innovation.

This is a consistent theme across all of the reports. For example in the Innovation Canada: A Call To Action report led by OpenText’s Tom Jenkins, they call for:

“Recommendation 3: To this end, public sector procurement and related programming should be used to create opportunity and demand for leading-edge goods, services and technologies from Canadian suppliers.

3.1 Innovation as an objective – Make the encouragement of innovation in the Canadian economy a stated objective of procurement policies and programs.”

The Government themselves also describe the need for the same catalyst process. In their own Digital Advantage white paper, they identify:

“Governments can play an important role in promoting private sector innovation and driving ICT uptake by acting as model users and leading by example, by being an early adopter and demanding purchaser of emerging and next generation technologies like Green IT and Cloud computing.”

Cisco’s Next Generation Cluster paper also repeats this key role for Government, describing a range of ideas that can enhance the traditional cluster model, and in particular highlight this key 'anchor' role that government can play:

“The potential for the hub population to co-create products and services with local entrepreneurs cannot be underestimated. Involving the local community in proof-of-concept market tests for products and services developed by hub entrepreneurs not only creates a potential market, but also can shorten product development cycles and provide proof points for attracting new investment.”

Government also can be a catalyst by using a similar co-creation and market-test approach to develop and deliver new public services. The procurement function allows government to play a prominent role in local and national testing of new technologies, and helps smooth the entire innovation chain—from research to go-to-market. Taken together, these stimuli allow start-ups to create more sophisticated products based on trial and error at the local level.

Procurement Commercialization is the process we have defined to formalize this relationship, providing a channel specifically for linking government procurement to an innovation process. This is achieved simply through copying key parts of procurements, like RFP bids, directly into product innovation activities such as this Roadmap.
The Canada Cloud – Template for a Technology Roadmap

The Roadmapping best practice document states that the Roadmap is produced through a process of gathering “market pull” requirements, which means ‘the technological innovations needed if companies are to serve anticipated future markets’.

Hence linking this roadmapping input to the government procurement output, a ‘closed loop’ is established that achieves Procurement Commercialization. The Government produces many forms of this procurement, from direct contracting through RFP and also through to publishing various technical standards too. To begin the Roadmap and provide a first example, here is the GovCloud (Government Cloud Computing) best practice guide from the Canadian Federal Government, published in 2010 as a roadmap framework.

In June 2010 the Canadian Federal Government Public Works CIO delivered [this 18-page PDF presentation](#), which describes a roadmap plan for their adoption of Cloud Computing, acting as a template blueprint for an overall enterprise architecture and strategy for Cloud computing.

- **Hybrid SaaS** – A multi-tenant application environment for their breadth of enterprise applications, like Oracle, SAP and Microsoft, used for their core business processes like PAY, and also their common IT requirements, like email and collaboration.
- **Virtual Office** - A set of shared applications for automating modern office working including Cloud Desktop, Document Management, Web 2.0 collaboration both internally with staff & partners, and externally with citizens via a multitude of social media channels.
- **Cloud Security Zones** – A logical architecture for segregating ‘Cloud Security Zones’, linking each Cloud area (IaaS, PaaS, SaaS) to a security infrastructure component, and describing how the computing environments will be integrated with their wide area networks and access control systems, through a Cloud Services Access Layer and a Cloud Peering Layer.
- **Trusted Cloud Identity** - Authorization and Authentication Services, Federated Identity Management

**Budget**

The Roadmapping guide stipulates a set up cost of around $170k services fees for the Roadmap project, with a view that under certain conditions it would be government funded while industry-led, on the basis: “Government provides the majority of the funding for the development of the roadmaps. Industry contributes knowledge and expertise.”

Our Roadmap starts with using the Suggested Template supplied on page 29 of the guide.
Appendix I - Suggested Template for a Technology Roadmap

1. Introduction and background
   • Mission and vision
   • Project objectives, goals, and intended results
   • Scope and boundary conditions of the roadmapping effort
   • The current industry: its products, customers, suppliers and manufacturing processes
   • Market trends and projections
   • Relevant constraint (regulatory, stakeholder, budget, etc.)

2. Technical needs and capabilities
   • Targeted products
   • Functional and performance requirements
   • Current science and technology capabilities
   • Gaps and barriers
   • Development strategy and targets

3. Technology development strategy
   • Evaluation and prioritization of technologies
   • Recommended technologies

4. Skills development strategy
   • Evaluation of skills needs at present, and for recommended technologies
   • Recommended skills and program enhancements to affect those changes

5. Decision points and schedule
   • Budget summary

6. Conclusion
   • Recommendations
   • Implement recommendations

7. Appendices
   • Roadmapping process
   • Participants

Follow-up

The group of experts who develop and draft the Technology Roadmap will be relatively small. To ensure the roadmap is accepted and acted upon, it must be critiqued, validated and accepted by a much larger group.