9TH REPORT

JANUARY, 2007

Skilled Technology Workforce

World Class Technology Industry

Leader in e-Health, e-Education & e-Government

Global Technology Hub

Connected Communities

Computer Literate Population
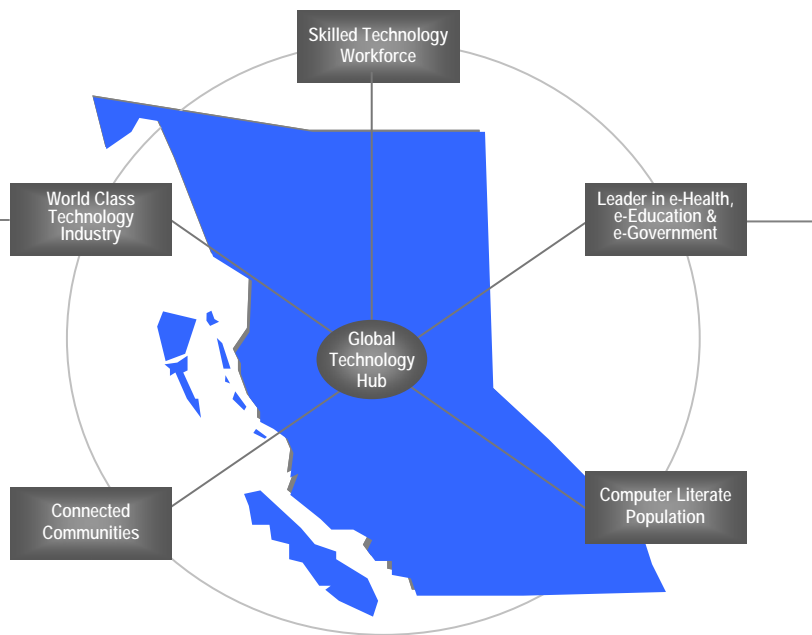
We believe that with strong cooperation between the provincial government and private enterprise, British Columbia will be one of the world's top ten technology centres

Every effort has been made to consider all information obtained and to be as accurate and consistent as possible in our use and analysis of all research materials. However, errors or omissions may have occurred. Please notify the Premier's Technology Council of any significant inaccuracies by e-mail at:

Premiers.TechnologyCouncil@gov.bc.ca

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Foreword

The Premier's Technology Council (PTC) was created in August 2001 to provide advice to the Premier on technology-related issues. The mission of the Council is to help make British Columbia one of the world's top ten technology centres.

The Honourable Gordon Campbell is Chair of the Council, a position shared with the Co-Chair, Greg Peet, formerly Chairman, President and CEO of ALI Technologies Inc. (acquired by McKesson Corp in 2002). The Council is fortunate to draw its membership from twenty-one other leaders of BC's technology industry and from senior levels of the academic sector.

This is the 9th report, the second of the government's renewed mandate and the first in my tenure as President. In it, we congratulate the government on its tremendous success in addressing the digital divide. We recommend that the Province follow up on its success by initiating changes to service delivery to make better use of this broadband network. We also recommend the expansion of the government's electronic exam system at the secondary school level. In terms of the private sector, the PTC investigated and supports a proposal to develop a wireless innovation laboratory in British Columbia.

As the new President, I am very excited by the opportunity to work with the Premier's Technology Council. I would like to recognize the efforts of Mr. Jim Mutter, the previous President. The PTC achieved an enviable record of results during his tenure. Jim is held in high regard both in government and in the broader technology community and the PTC benefited greatly from his leadership and expertise. These solid foundations have made my transition into the position an easy one and we are already working on future projects in e-learning strategies, innovation and commercialization, clean technologies and leveraging the opportunity provided by the 2010 Olympics in British Columbia.

Finally, we thank all members of the Premier's Technology Council who volunteered their time, energy, and experience toward achieving the PTC's mission. We would also like to express our appreciation to the Premier and to government officials for their willingness to work with us, listen to our ideas and act on our recommendations.

Cheryl Slusarchuk
President, Premier's Technology Council

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Executive Summary

The focus of the Premier's Technology Council (PTC) in this 9th report is on government services. The appropriate platform to deliver citizen-centred government services is critical to achieving the five great goals that the Premier set out in his second mandate. Additionally, in this report, the PTC presents recommendations on electronic assessments in schools; provides an update on the ongoing projects on innovation, commercialization, and the Digital Divide; and investigates and supports the WINLAB proposal.

Broadband and the Digital Divide - Update

To begin with, the PTC would like to congratulate the government for the work it has completed on delivering broadband to British Columbia communities. In 2003, the provincial government formed Network BC to deliver broadband to 366 priority communities that the PTC identified. Through Network BC's Connecting Communities agreement with Telus, all but four of these communities will be connected by the end of 2006. Network BC and the provincial government are also to be commended for their continued work in addressing the issues of "last mile."

The PTC recognizes the continuing commitment to deliver broadband to First Nations. The Ministry of Aboriginal Relations and Reconciliation has resolved to work with Network BC to deliver broadband to 100 First Nations. This commitment includes not only the broadband connection but also an ISP as well as capacity building within the communities.

The PTC regards the Network BC initiative to deliver broadband throughout the province to be a resounding success.

Citizen-Centered Services

The concept of five Great Goals presents significant challenges that will require changes across the provincial public sector. The goals cut across several Ministries, necessitating greater collaboration among them. Government must now focus on the citizen rather than the program and consider an enterprise model that ensures that the citizen can access the full basket of services in a variety of ways. This represents a significant **transformation** in how government operates both in its use of technology and its human resources.

The PTC believes this transformation can only be achieved by using technology to enable the Ministries and agencies throughout the vast organization of government to collaborate more

closely. Technology can provide the means to communicate for the purposes of sharing information. Responsible sharing of information allows government and its service providers to accurately ascertain the needs of the citizen and then meet those needs rapidly and efficiently. Indeed, the recent review of BC's child protection system by the Honourable Ted Hughes clearly underscores the need for Ministries to better access and share information. To be most effective, only an enterprise-wide commitment to using all information to deliver citizen-centred services will enable the benefits of investment in technology to be fully realized.

Data sharing does not mean creating one big database but instead establishing a system whereby the individual program databases that already exist within each ministry of the provincial government are connected in   an overall architecture that allows data sharing wherever it is both needed and appropriate for the delivery of a program. As individual Ministries and programs make already planned upgrades and investments in new technology, they would have to meet certain standards set forth by this overall architecture. This architecture can then be used to support a service delivery system that focuses on quality, easy access, and efficiency.

In order to implement this technological integration, the PTC believes that Ministries should be directed to share data. Furthermore, the role of the Chief Information Officer (CIO) should be enhanced with authority and resources to develop the architecture and to set the standards and policies for IT purchases. Government should then focus on some important key projects to generate early success and grow confidence both with the citizens of BC and within the public service. Investments are already being made in systems serving the health care sector and in systems to service clients of the Ministry of Children and Families and Ministry of Income Assistance. These are good potential first projects.

E-learning - Assessment

One of the benefits of a province wide broadband system is that it gives BC an advantage developing programs that can use technology to improve educational opportunities for all students in BC. Plans are already underway in the Ministry of Education to develop virtual schools. There will be greater support for home schooling, and eventually most courses could be made available in all locations whether in person or over the internet. However, there are technical and administrative capabilities that need to be met to create a system that effectively uses technology to take full advantage of the e-learning's potential benefits. One such area is using technology to improve and expand access to the provincial exam system.

The provincial exams at the secondary school level are administered in Grades 10, 11, and 12. During this time, over 20 courses are provincially examinable. They lead to requirements for graduation, admission to post secondary institutions, and scholarships.

Technology provides potential improvements to this system in two areas. The first is in improved service to the student. Expanding the limited e-exam system, both in number of sessions and number of subjects available, would assist not only students who are in circumstances that limit their access to the exam system, but all students who take exams. The second area is in administrative streamlining. The savings in time, printing, and distribution are tremendous.

The PTC believes the provincial government should consider dedicating the time and resources needed to expanding this system with the long-term goal of making e-examinations the norm. Our recommendations in respect to province wide assessment are simply a "first step".

Innovation and Commercialization - Update

In its 8th report, the PTC highlighted six key issues that previous consultations had identified as critical to the innovation and commercialization process in British Columbia. These six issues are: attracting more senior management executives; enhancing sales and product management capabilities; expanding the number of highly qualified personnel (HQP); strengthening links between academia and industry; strengthening science and technology governance; and improving the availability of early and later stage funding. Subsequently, the PTC held two roundtables to discuss solutions to the issues. One was held on September 26, 2006 and the other on November 29, 2006.

The roundtables provided forums for senior stakeholders in the province to discuss possible solutions and recommendations for the provincial government. The first targeted two of the issues - HQP and linkages between industry and academia (technology/knowledge transfer). The second roundtable investigated companies' need for senior talent and sales and product management capabilities. These roundtables made it clear that the development of solutions to the challenges of commercialization and innovation will require ongoing effort. The key themes and potential solutions necessitate continued research prior to developing any recommendations. The first of these recommendations will be included in the PTC's 10th report.

WINLAB

The small- and medium-sized enterprises that make up our local wireless industry need access to world-class, cutting-edge equipment to test their products and to demonstrate their facility to potential buyers. There are no such wireless facilities in British Columbia. To close this gap, The Wireless Innovation Network (WINBC) is collaborating with Bell Canada, industry, and other private and public organizations to create WINLAB.

The WINLAB facility will be adjacent to the Bell Innovation Centre. It will be designed to facilitate WINLAB activities such as technology showcases, wireless workshops, mentoring, useability, and

focus group activities, as well as a broad range of technical tasks such as mobile application and device testing. The facility will have state of the art wireless equipment including a mobile messaging and multimedia platform, a location-based services platform, and connectivity to a live production network, a private 3G network, and Bell's development network.

The PTC supports this initiative because the wireless lab is an important addition to the provincial technology infrastructure for a leading industry segment with the potential to be globally competitive. The business plan for the wireless lab is credible with a strong and measurable objective in economic development and a sound plan to become financially self-sustaining. The wireless lab initiative also has over-whelming consensus support within the industry sector backed by private sector contributions in cash and in-kind for 50% of the total cost.

Broadband and the Digital Divide- Update

The Premier's Technology Council (PTC) would like to congratulate the government for the work it has completed on delivering broadband to British Columbia communities. In 2003, the provincial government formed Network BC to deliver broadband to 366 priority communities the PTC identified. Through Network BC's Connecting Communities agreement with Telus, all but four of these communities will be connected by the end of 2006. For those four, delivery has been delayed by dependencies, such as access to hydro poles or right-of-way issues with First Nations, and they will not be connected by the end of the year. There is another group of 10 very remote communities where broadband is not available for which Network BC has provided a high-speed satellite connection capable of delivering broadband.

As a result of this project, over 91% of British Columbians will have access to a broadband connection. This makes BC the most connected province in Canada, and one of the most connected jurisdictions in North America. The achievements of Network BC have not gone unnoticed. The Network BC project has received international recognition for its use of information technology to benefit society. On June 5, 2006, Network BC was named a Laureate of the Computerworld Honours Program in the Government and Non-Profit Organizations category at a ceremony in Washington, DC.

Network BC and the provincial government are also to be commended for the work they have done in addressing the issues of "last mile." The Connecting Communities project only delivers a broadband band connection to a community. From there, an Internet Service Provider (ISP) is needed to deliver the service to homes and businesses. Network BC estimates the cost of delivering last mile to a community to be approximately $75,000, and it has worked hard to help communities bridge this last cost. In some cases, it has facilitated discussions with nearby regional or commercial Internet service providers. In most instances, however, the communities are either too remote or not large enough to make commercial delivery viable.

Another option that Network BC has promoted is community-based not-for-profit ISP. More than 60% of small ISPs in B.C. that are taking advantage of the Connecting Communities agreement are community-based non-profit service providers. Network BC has supported the development of non-profit ISPs by funding the BC Community Connectivity Cooperative (BC3) and the First Nations

Technology Council (FNTC) to provide advice and by offering $1 million in infrastructure grants to communities that are creating their own ISPs.

Finally, the provincial government is to be recognized for its continuing commitment to First Nations. The Ministry of Aboriginal Relations and Reconciliation has undertaken to work with Network BC to deliver broadband to 118 First Nations. This commitment includes not only the broadband connection but also an ISP as well as capacity building within the communities.

It should be noted that some 8% of British Columbians are still without broadband access. For many of them, delivery will be cost prohibitive for the foreseeable future. For others, however, there are other options and opportunities that continue to arise. Those still without access are encouraged to contact Network BC to learn more about these options.

The PTC regards the Network BC initiative to deliver broadband to British Columbia to be a resounding success.

Government Operations

Citizen-Centered Services

A key aspect of the PTC's mandate is to make recommendations on how government can use technology to better deliver services. The broadband platform that has spread through the majority of the province is one result of such work. To take advantage of the opportunity this platform presents, government needs to significantly shift how its programs and systems operate. The different Ministries and programs need to collaborate to ensure that one avenue, be it Internet, telephone, or in-person, can provide access to the information and services that citizens need.

Such collaboration would enable citizens to get better and faster service. It would also enable civil servants to access to the kind of information they require to assist those in need. Technology now provides government with the ability to focus services on the overall needs of the citizen instead of the specific goals of each program. In the PTC's vision of the future, this would create not only greater convenience for citizens accessing the system but would also save lives.

A. The Vision for the Future

The PTC's vision for citizen centred services is a system that allows the "front office", where government meets the citizen, to integrate seamlessly with the more complex "back office" where programs are developed and managed. By ensuring those who actively deliver the services can access the information they need, public services can be rendered more accessible, easier to deal with, and more responsive. To demonstrate how such a system might improve services the PTC has prepared two case studies.

1. Small Business Case Study

Front Counter BC represents a significant improvement in service as it provides businesses with one point of access and a guide or file manager to assist the business in dealing with the various government agencies and bodies. However, because none of the information sharing is automated, the Customer Service Specialists have to deal with multiple information sharing and permitting challenges. They must often act as go-betweens on behalf of the client with a number of different Ministries and may be unsure of the specific timelines for approvals. The fictional scenario below demonstrates the potential for improvement through service integration.

JJ Enterprises, a U.S. company specializing in exclusive wilderness recreational resorts, is considering developing a high-end sport fishing and eco-tourism lodge in BC. On the BC Government Website home page, JJ selects a link for setting up businesses in BC, which takes the firm to an "Electronic Front Counter" (e-FCBC). JJ enters information about the type of business, location, and construction plans and is presented with a process map identifying the permits and authorizations needed, and the prerequisites for each. This includes the full spectrum of permits and authorizations from all involved agencies from all levels of government. The cost of all required permits and licenses is totaled and JJ is able to make a single payment via credit card online.

JJ is presented with a "customer information" page on which it enters baseline information, (i.e. name, address phone, birth date), required for all the applications. The company is informed of and provides its consent to share this information across the agencies for the purposes of its applications.

JJ is able to call up a map of the area on its computer and identify the area in which it is interested. The interactive map shows that there are no encumbrances on the site, so the company submits the map link with its area of interest highlighted to the Crown Land Administration Division of the Ministry of Agriculture and Lands along with the application for use.

At the Front Counter BC support centre in Kamloops, the Customer Services Specialist receives an e-mail notification that an application process has been initiated by JJ Enterprises with contact information provided. The Specialist follows up with a phone call to make sure that JJ is getting what it needs from the e-FCBC system.

Shortly after submission, JJ receives an e-mail request from the Waste Management Branch for additional information which JJ was able provide electronically the same day. Any overdue responses are highlighted, enabling the Specialist to follow up with the agency responsible. JJ also has access to the status of its application package online, including the projected completion date for all approvals. This allows the company to line up financing and staffing at the appropriate times to minimize overhead costs.

JJ Enterprises receives all the required permits within the scheduled timeframe and proceeds to build the floating fishing lodge. Within two years, the company has established a reputation as an exclusive destination resort. JJ has hired 15 people from the local area, including 6 guides from the local First Nation.

2. Child at Risk Case Study

There are several social service Ministries that contribute to our social safety net. Often they have clients in common and information on these clients needs to be shared. However, because the Ministries are focused on their own programs and their IT systems are separate, it is not always clear to them what information needs to be shared with those who require it and are authorized to have it. This fictional scenario demonstrates how these systems might work together in the future.

Brittany is a 6 year-old girl who is in foster care as a ward of Ministry of Children and Family Development (MCFD). The natural parents are involved in various levels and types of counseling, and intend to prove to

MCFD that they will be competent as parents, following their counseling and rehabilitation. They have convinced MCFD to move Brittany from her current foster home in Prince George to a foster home in Chilliwack where they currently reside.

June 8: The case worker (Jennifer) arrives in her Abbotsford office and logs onto her portal, and is authenticated by the MCFD, allowing her access to the information regarding cases to which she is assigned. She sees that she has a new case for Brittany.

Based on her case ownership, she is able to retrieve all Ministry records related to Brittany that were previously stored at the MCFD's Northern Authority in Prince George. Because she is authorized to access relevant information from other Ministries, including Employment and Income Assistance (MEIA) and the Attorney General (AG), Jennifer is able to get a picture of Brittany's situation. She notices that Brittany was brought into the care of the Ministry in April 2005 as a protective move after relatives of the family informed the Ministry of their observations of abuse. The father (Henry) was convicted of assault in March 2005. As a result, Henry needs to report to his parole officer every week for 6 months through September 2005. Jennifer notes that the move to Chilliwack was predicated on Henry participating in a subsidized training program under the auspices of MEIA.

June 10: The family has moved to Chilliwack. Jennifer notes that her case file was updated with information regarding Brittany's local school, which was sent from the BCeSIS system when Brittany enrolled there. Brittany's new teacher was automatically notified that one of her new students (Brittany) was temporarily living at a foster home due to non-disclosed issues at home.

Oct 1: Based on MCFD's policy of trying to reintegrate children into the home as soon as possible, Jennifer realizes that Brittany is a candidate to be returned home, on the condition that her father has completed his parole period without incident. Based on Jennifer's role and her ownership of Brittany's case, she is authorized for access to certain Attorney General files, in which she finds that Henry has completed his probation period, including the mandated anger counseling. Based on this and on her own assessment during monthly visits, Jennifer provides authorization to release Brittany back to her parents, and sends a secure e-form to her current foster parents to this effect.

Nov 1: Jennifer's computer provides her with new information from the Ministry of Education, via MCFD, stating that they are concerned with Jennifer's current state. Jennifer meets with the teacher and learns that while Brittany's focus, grades, and attitude have been quickly deteriorating over the past two months, there is no obvious evidence of abuse.

Nov 10: Jennifer's computer provides a low-level alert from MEIA regarding Henry. After six weeks of reasonable progress in the three-month retraining program, Henry has been absent for more than a week. There has been no contact from Henry, and the MEIA has been unable to reach him. Jennifer plans to address this during her next planned visit with Henry in late November.

Nov 15: *As Jennifer is between client visits in her geography, she receives an urgent alert on her secure PDA. The notice from the Ministry of the Attorney General is regarding a "watch" status she had put on Henry's AG file, indicating that there was a warrant for his arrest for his participation in an assault incident earlier that day (RCMP source). Concerned that Brittany would be in danger if she returns home, Jennifer accesses the contact information for Brittany's school on her PDA, and calls the school, where she is connected to Brittany's teacher. She asks that Brittany be kept after class until Jennifer is able to arrive, and that Brittany not be released to anyone but Jennifer. Jennifer says that she will provide further information for the teacher once she is at the school in person, and/or has access to a secure communication channel.*

Jennifer initiates the process to have Brittany brought back into the care of the Ministry. She confirms that a bed is available at the Chilliwack foster home Brittany previously enjoyed, and puts a hold on a space there. By 9 pm, Brittany is safely in bed until Henry's case is resolved.

The PTC believes this vision of the future is both feasible and desirable. To help realize it, the Province must grapple with the challenges and take advantage of the opportunities.

B. The Challenges: Strategic Level

During the **Speech from the Throne** in 2005, the Government of British Columbia announced the five Great Goals. These goals are to:

1. *Make BC the best-educated, most literate jurisdiction on the continent*
2. *Lead the way in North America in healthy living and physical fitness*
3. *Build the best system of support in Canada for persons with disabilities, those with special needs, children at risk and seniors*
4. *Lead the world in sustainable environmental management, with the best air and water quality, and the best fisheries management, bar none*
5. *Create more jobs per capita than anywhere else in Canada*

The overall concept of five Great Goals for the government enterprise presents three significant strategic challenges that will require changes across government. The first is that, although there are five goals, there are seventeen Ministries to deliver on them. Consequently, the goals cut across several Ministries and will require greater collaboration among them. The second is that they represent a change in the focus of government. In the past, government has used a federated model to deliver a variety of programs to the citizen. It focused on each individual program and how best to deliver it. The new model will require government to focus on the citizen rather than the program. Government must now consider an enterprise model that ensures the citizen can access the full basket of services in a variety of ways. This represents a significant **transformation** in how government operates both in its use of technology and in its use of people, and the challenge cannot be underestimated. The third challenge is how to pay for the better and new services the government will need to offer to achieve

the expected results. Without making appropriate use of technology, these new offerings would require additional staff at a time when they are both expensive and difficult to find.

The Premier's Technology Council believes that technology is more than just a facilitator in the transformative process. Without using technology appropriately, the five Great Goals will be very difficult to achieve. Technology is a necessary component to enable the Ministries and agencies throughout the vast organization of government to collaborate more closely in delivering world class programs and services.

However, technology itself is only a part of the solution. It will only provide the means communicate for the purposes of sharing information. Without tying this new technological infrastructure to an implementation plan that ensures those who design and deliver services focus on the overall needs of the citizen instead of just the effective delivery of one program, this integration effort will fail to achieve its goals.

A key to success is information sharing. Responsible sharing of information enhances the services that the BC government can provide and generates significant benefits for citizens. It allows government and its service providers to accurately ascertain the needs of the citizen and then meet those needs rapidly and efficiently. It permits citizens to be informed rapidly and efficiently of those government services in which they are most likely to be interested. Technology allows this sharing of information but only government-wide commitment to using all information to deliver citizen-centred services will enable the benefits of investment in technology to be fully realized.

C. The Challenges: Operational Level

In terms of the operational dimension, there are two aspects to the technological challenge facing government in the achievement of the five Great Goals. The "back office" challenge is to share data across programs, Ministries and systems, enabling complex programs to work together more seamlessly. This will provide data to front-line staff in a way that causes a significant increase in service quality to residents of BC. The "front office" challenge is to ensure that the variety of programs can be delivered together through a minimum of comprehensive channels that meet the single point of contact needs of residents of BC. For example, "211" is a project to develop a single phone number that can provide one point of contact for all government services.

Illustrative of the issues surrounding the imperative need to share data across programs is the recent Hughes report. Although it focused on the mandate of one Ministry, it clearly delineated the need for better access and use of information from other Ministries. It made a host of recommendations endorsed unanimously by the Legislature. To put in place a majority of these recommendations, better integrated technology and data systems must be properly implemented.   Some of the recommendations are even more direct and specifically endorse sharing of data and delivery systems. Key among them are:

24. Recommendation: The Ministry should continue its work with other BC ministries to establish common measures and linked data sets.
Reason: Combining the information available from a variety of sources will give the Ministry and the public a richer understanding of the children and families being served and the impact on their lives of wide range of government programs and services.

25. Recommendation: Once collected and analyzed, data must be used as a tool to support operational and management decision making, and program evaluation and policy development.
Reason: When programs and policies are introduced, the Ministry and the public need to understand the expected results for children; and after implementation, they need to be able to tell whether those results are being achieved.

60. Recommendation: That the Ministry of Children and Family Development review the statutes that govern it to ensure that there are no statutory barriers to disclosure of information among program areas.
Reason: Many children are served by more than one program within the Ministry of Children and Family Development and their best interests often require that personal information about them be shared between programs. Ministry staff should be confident that they have the authority to share that information.

The recommendations in the Hughes report are directly related to Great Goal number three – building the best system of support in Canada for persons with disabilities, those with special needs, children at risk, and seniors. In addition, there are many other public policy priorities that cut across the "silos" of various Ministries and create similar challenges to those addressed in the Hughes report.

D. Solutions

In order to address the challenges currently being faced in the delivery of all government programs and aligning program delivery to the five great goals, the government needs to move towards service and data integration across all Ministries and agencies. This will require a change to organizational processes, structures, and governance.

At the strategic level, Ministry leadership should recognize the transformation necessitates a commitment to work collaboratively and should explain their vision of an integrated approach to using technology to attain the five great goals to program staff. In turn, program staff need to understand this transformation and how this will help them provide better service. Once the big picture is established, the government agency tasked with implementing the operational aspects of the IT and IM integration will be able to put systems into place effectively.

1. INTERNAL DATA SHARING

In recommending the sharing of data to better deliver services, the Council does not believe it is either necessary or appropriate to create one massive data base to be shared among the Ministries. There are three key reasons for this. Firstly, much of the information within the individual program databases is proprietary and should not be shared more widely. Secondly, the information required by other programs and Ministries is usually only a small percentage of what any individual Ministry possesses. Thirdly, such massive restructuring is cost prohibitive.

Instead, the Province needs to create a system whereby the individual program databases are accessible from a web services architecture that allows data sharing wherever it is both needed and appropriate for the delivery of a program. As Ministries and programs make already planned upgrades and investments in new technology, they would have to meet certain standards set forth by this overall architecture. These standards would generate extra costs, but the increased expense would be incremental to necessary investments and far less than the development of a completely new and independent database system.

The necessary components are:

a. Overall architecture
   • An ubiquitous communications channel for all Ministries that would offer program staff the ability to connect to information using any means of secure networking
   • A User Authentication system that would accurately record the identity of those entering the system, ensure access to only those with proper authorization, and include associated audit capabilities

b. Standards
   • Credentials, roles, and permissions tied to the authentication that will provide the ability to control what information and functions a person is authorized to use
   • Maintenance of appropriate security
   • Standards of interoperability
   • Policy processes that both ensure and yet control the sharing of information. This is particularly key in relation to privacy.

2. ACCESS TO SERVICE

Access is where the government meets the citizen. If the leadership is enshrined in each Ministry and the "back office" information sharing systems are properly integrated, this enables government to provide the best possible service. Public services need to be easier to deal with and more accessible. Proper data sharing can enable this, but it cannot accomplish it alone.

As emphasized throughout this report, government should reform how it delivers services and focus on the overall needs of the citizen rather on the specific goals of particular programs. Elements of reform to service delivery include:

a. Quality – This can be enhanced through surveying and understanding the needs of the citizens and training staff to meet them.

b. Easy Access – All of the different service points need to be linked and coordinated. The provision of phone, web, front counter, and print services can all be improved when Ministries share data appropriately.

c. Efficiency – Through sharing resources, data, delivery channels, and integrating forms and business processes across government, better service can be provided at lower cost.

E. Critical Success Factors

1. GOVERNANCE

After extensive deliberation, the PTC has concluded that the most critical aspect of ensuring that integrated IT/IM investment fully realizes its potential is the development of a governance model for delivery. The model must encourage change across a variety of Ministries, and that requires leadership.

The Council believes the most effective way to drive change is to assign responsibilities for governance of IM and IT to the Government of British Columbia's Chief Information Officer (CIO). By vesting in the CIO an authority similar to that of the Comptroller General, s/he could act as an authority over the information management and information technology systems across government. This should include access to all systems of government to conduct the necessary oversight. The enhanced CIO model should include:

- Strategic Planning – Conducting a strategic planning process, ensuring Ministry plans are aligned with it, and advising senior government officials on all aspects of information technology, information management, security, and privacy;
- Opportunity Analysis – Promoting the development of cross-government initiatives, actively identifying such opportunities, and approving all IM/IT projects;
- Policy Governance – Developing corporate IT/IM polices and standards and ensuring compliance with such policies;
- Infrastructure Development – Establishing the actual infrastructure the system runs on;
- Security and Privacy – Ensuring all government systems are interoperable yet still secure. Equally important is the management of privacy. Ensuring privacy is adequately protected

without making it an undue hindrance to appropriate sharing of information is seen as one of the key challenges of developing integrated systems.

2. PRIVACY

To ensure the proper balance between the protection of privacy and the effectiveness of integrated information systems, the BC government's Directors or Managers of Information and Privacy (DMIPs) need clearer policies and guidelines on sharing information on an enterprise basis. The PTC highlighted these challenges in its 8th report.

Recommendation 8.10 – That Government revisit the responsibility structure for privacy management and ensure the authority is appropriately delegated and that there are sufficient resources available for the development, implementation, and monitoring of policies and procedures.

The current reporting structure of DMIPs is internal. Each addresses the privacy issues related to specific programs in its Ministry. This leads to inconsistent application of policies and hinders the development of collaborative programs. The PTC's continued investigation emphasized the critical nature of this issue. We believe that the Province would be well served by establishing a process for a consistent approach to this issue across all ministries.

3. RESOURCES

Resources are needed in two areas. The first is for the office of the CIO, which should be charged with developing the overall architecture. The resources required are not significant but ensuring that the CIO has the ability to undertake enhanced duties in a timely fashion is critical. The PTC recognizes the resources required over the next three years would represent an increase to the CIO budget. Nevertheless, this increase is warranted given overall government expenditures on IM and IT.

The second area where extra resources may be required is in the investment made by Ministries in systems. When they make their new investments, there may be some incremental increase in costs that result from the need to meet the standards required for the new systems sharing program.

4. KEY FIRST PROJECTS

Government must identify key areas where collaborative work is not only critical but where it is already under way. One such area is related to Great Goal 3: *Build[ing] the best system of support in Canada for persons with disabilities, those with special needs, children at risk and seniors.*

Driven by the Hughes report, government is already working on a way to support integrated, coherent delivery of social services. This includes both operational, front-line information and aggregate information for decision-makers at the program, ministry, and sector levels.

The first target within this broader goal is the investments being made in case management systems by the Ministries of Employment and Investment and Children and Family Development. They share common clients and work with similar kinds of data so it is logical for them to cooperate more closely.

These ministries need to collaborate both on joint procurement issues and on information sharing, so that front-line workers get the right information at the right time to make better decisions for their clients. The aggregation of information without personal identifiers will also enable those who develop policy to make holistic citizen-centred decisions about resource allocation and program delivery.

Another area of collaboration is in health. Great Goal number two is to "lead the way in North America in healthy living and physical fitness." This will require leadership from the Ministry of Health and also input and cooperation from several other ministries. In terms of the technological system needed to support the achievement of this goal, the considerable investments now being made in the Ministry of Health, for instance in electronic health delivery, should support broader cooperation among the Ministry "silos."

If government is to truly realize the benefits of citizen-centred service delivery, then information must be able to flow seamlessly across the arbitrary boundaries of Ministries. The two critical first projects outlined above are areas where government can adopt the principles of reusing and leveraging its infrastructure investments, both to enable information sharing and to reduce costs.

F. Success

Concrete measures of success are essential elements of government-wide IT/IM cooperation and are still to be developed. Detailed success measures that relate to each step of the transformation will serve two key purposes. Firstly, they will allow the public service to celebrate each achievement and allow its employees to clearly understand that efforts are leading to results. Secondly, measures will serve to hold the CIO accountable and to promote change if the targets are not being met.

In general, the PTC believes that success measures can be determined for:

- Citizen – Reduced risks to those clients of critical government programs and increased satisfaction with the government services; and
- Government – Demonstrable savings in the use of resources and increased job satisfaction for staff

G. Recommendations

The Premier's Technology Council recommends:

9.1 That Ministries should be directed to share data collaboratively with programs outside their own Ministry and actively seek such opportunities in order to deliver seamless coordinated services to the citizens.

9.2 That the role of the Chief Information Officer (CIO) should be enhanced with the authority to set standards, architecture, and policy for IT purchases and development across government, and to monitor compliance with those standards. The precedent for this model is in the Office of the Comptroller General. Furthermore, for the CIO to assist the government in achieving its goals the office should be:
    a. **Resourced appropriately to complete the integration of government systems; and**
    b. **Given responsibility for managing privacy considerations on a government-wide basis. A Chief Privacy Officer (CPO) should be established in the CIO's office to set guidelines and procedures that protect privacy without unnecessarily hindering data sharing.**

9.3 That the Province should focus on selected important key projects to generate early success and grow confidence both with the citizens of BC and within the public service.

Technology and Education- Assessment

A. Continuum to e-Learning

Great Goal number one is to make British Columbia the most literate jurisdiction on the continent. In order to continue progressing towards that goal, BC will have to take full advantage of technology to deliver its educational programs. BC already has an advantage in this area because by the end of 2006 it will have established a broadband network across the province that will ensure that every school, indeed every community, has full access to broadband.

This network will allow the development of comprehensive e-learning. Plans are already underway in the Ministry of Education to develop virtual schools. There will be greater support for home schooling, and courses could be made available in all locations whether in-person or over the Internet. However, there are technical and administrative capabilities that need to be met to create a system that effectively uses technology to take full advantage of the potential benefits of e-learning.

In anticipation of this, the PTC recommended in its 8th report that the Province continue to support and develop BCeSIS, the common student information system currently being rolled out by the Ministry of Education. In this, the 9th report, the PTC is looking at the next step on the continuum to e-learning: using technology to improve and expand access to the provincial exam system.

It must be stressed, however, that upgrading assessment systems through greater application of technology is a tactical rather than strategic target. The PTC will examine more strategic, long-term goals in a future report. Our recommendations in respect to province-wide assessment are simply the "first step".

B. Current Provincial Assessment Systems

Currently, there are two major province-wide assessment initiatives, the Foundation Skills Assessment (FSA) and the Provincial Examination System. The FSA is a once a year assessment at the Grade 4 and 7 level. The provincial exam system measures performance in specific subjects for secondary school students.

The FSA provides a snapshot of how well BC students are learning the foundation skills of Reading Comprehension, Writing, and Numeracy. Results are used by schools to improve their programs. The FSA is not a diagnostic test designed to guide the instruction of individual students. It is administered in the spring and its results are released to schools at the beginning of the school year when schools and school districts are doing their annual planning. Given that the FSA already effectively fulfills its designated purpose, the opportunities to improve it through the use of technology are limited.

The provincial exams at the secondary school level are administered in Grades 10, 11, and 12. During this time, over 20 courses are examined at the provincial level. These exams are much more important for the individual student than the FSA. They lead to requirements for graduation, admission to post secondary institutions, and scholarships. The system is evolving to address distance (distributed) learning, virtual schools, offshore schools, and the advent of BCeSIS. (See PTC 8th report, pp. 16-17.) E-exams have also been used quite successfully in a limited fashion.

With the exam system already evolving in the direction of e-exams and with a need to provide greater opportunity to and flexibility for students, there are great opportunities to use technology to improve service and generate significant cost savings. Furthermore, technology provides an effective tool to measure progress towards the first of the Great Goals.

C. Opportunities for Improvement

In terms of improved services to students, increasing access to e-exams would result in benefits not only for those who are in circumstances that limit their access to the exam system, but to all those who take exams. In terms of cost savings, the reduced expenses in time, printing, and distribution are tremendous.

The more important of the two benefits arises from improving service to the students by expanding the limited e-exam system, both in the number of sessions and number of subjects available. Provincial exams can only be taken at certain times of the year. Using e-exams allows the Ministry to open up more windows of opportunity. At the same time, the number of subjects available via e-exams should also be expanded. Currently, the opportunity to sit e-exams is limited to certain courses.

Increased access will be a significant benefit for those in special circumstances - those students whose ability to attend exams in a certain time and place is limited. For example, students participating in virtual and offshore schools, and those who have special needs would gain from an increase in the number of subjects and sessions for e-examination. But the advantages are not limited to these students. Greater access to e-examinations would allow all students to learn at their own pace and take the exams when they feel they are prepared. This will provide students with much greater choice and flexibility without sacrificing high academic expectations and standards.

A key to making this system work is developing more exam questions. Having an extensive bank of exam questions allows the development of multiple forms with different blocks of questions. In sharp contrast, this is not feasible for paper exams. The expense of generating new exams, printing them in hard copy, distributing them in a secure fashion, and then collecting the results afterwards renders it impractical to provide multiple opportunities to sit exams with a pen and paper.

D. Meeting the Opportunity

To move forward on e-exams, the Province will need to devote certain resources and enhance communications. In terms of resources, given the significance of the opportunity provided by applying technology to the exam system, the investment required is relatively modest. Intelligent contracting and acquisition of expertise would be far more beneficial than the application of large sums of money. The capacity of examination branch staff to push forward the e-exam agenda is limited because their top priority is to ensure the present systems and processes operate. However, this kind of initiative should not require more than the addition of a few FTEs, likely on a temporary basis.

In terms of communications, time and money could be dedicated to a "teach the teachers" program. Many teachers already participate in e-marking, the development of exam questions, and the preparation of the online Assessment Tools for Teachers. Contracting these teachers to provide demonstrations, workshops, or coaching for other teachers would help to demystify e-exams and provide a trusted resource for those concerned about them.

E. Recommendations

In order to exploit the full advantages of technology in the examination system and help to achieve the Government of BC's first great goal (To "Make BC the best-educated, most literate jurisdiction on the continent"), the PTC recommends:

9.4 That the provincial government consider dedicating the time and resources needed to expand the limited e-examination system with a long-term goal of making e-examinations the norm

9.5 That the provincial government consider developing a "teach the teachers" program on e-examinations

Industry Development

Innovation and Commercialization

In its 8th report, the Premier's Technology Council (PTC) highlighted six key issues that previous consultations had identified as critical to the innovation and commercialization process in British Columbia. Subsequently, the PTC held two roundtables to discuss solutions to those issues. One was held on September 26, 2006 and the other on November 29, 2006.

The roundtables provided forums for senior stakeholders in the province to discuss possible solutions and recommendations for the provincial government. The first targeted two of the issues – highly-qualified personnel (HQP) and linkages between industry and academia (technology/knowledge transfer) and sought recommendations to ensure that:

- a sufficient number of HQP are produced and retained in BC;
- the province's HQP possesses skills sets that will advance the growth of BC's industries; and
- technology developed in universities is shared effectively with the marketplace

The second roundtable investigated companies' need for senior talent and sales and product management capabilities. It sought recommendations to help BC companies:
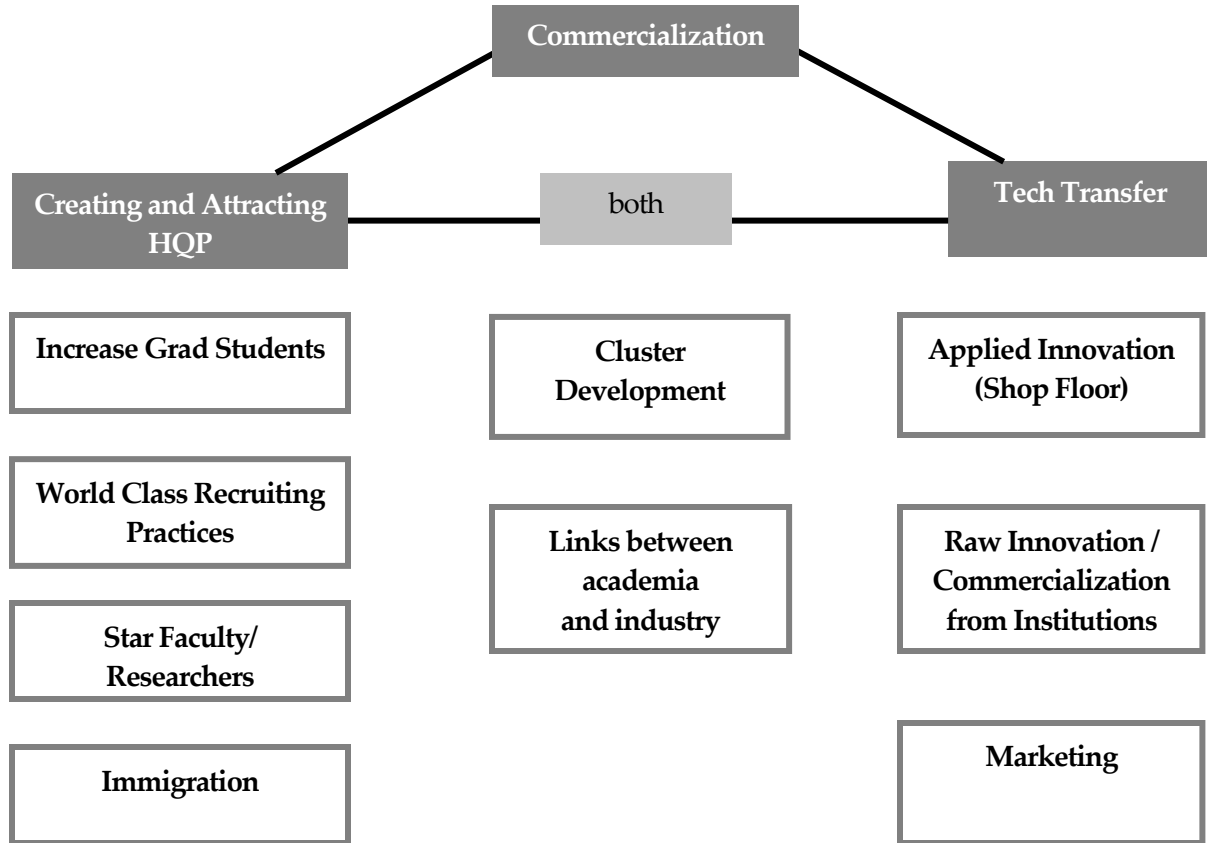
- Attract and retain senior management talent;
- Develop the next generation of senior business managers from the local talent pool; and
- Build stronger (a) sales/marketing and (b) product management capabilities.

Transcripts from the second roundtable have not been completed but those from the first have highlighted a number of key themes. It is clear that the development of solutions to the challenges of commercialization and innovation will require ongoing effort. Furthermore, additional research is a prerequisite to developing any recommendations.

The chart below indicates areas identified at the first roundtable and which the PTC is currently investigating. They will be addressed in PTC's 10th report and include:
- Increasing numbers of graduate students
- Attracting star faculty and researchers
- Promoting world class recruiting
- Applying innovation
- Linking universities and industry

Themes from the Commercialization and Innovation Roundtable
September 26, 2006

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│ Creating and Attracting│  │   both   │  │     Tech Transfer    │
│         HQP            │  └──────────┘  └──────────────────────┘
└──────────────────────┘
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Creating and Attracting HQP	both	Tech Transfer
Increase Grad Students	Cluster Development	Applied Innovation (Shop Floor)
World Class Recruiting Practices	Links between academia and industry	Raw Innovation / Commercialization from Institutions
Star Faculty/ Researchers		Marketing
Immigration		

WINLAB

A. Introduction

The Wireless Innovation Network (WINBC) is collaborating with Bell Canada, industry, and other private and public organizations to create WINLAB -- a world-class technology facility adjacent to the Bell Innovation Centre. This initiative will provide a component that is clearly missing in BC's wireless technology landscape and will benefit all sectors of the BC wireless technology community. The Premier's Technology Council believes this lab represents infrastructure that is necessary to foster the development of the wireless technology sector.

B. The Challenge

The obstacles confronting wireless in BC companies are directly related to product commercialization; access to international markets and sales channels; technology acceleration and adoption; access to quality mentoring; best practice methodologies; introductions to investment opportunities; and access to testing, technical development, and product evaluation programs.

Extensive industry consultation and several WINBC surveys show that local companies need access to:

- Live production systems and 3rd generation wireless data networks for testing, technical development, product evaluation, and technical showcase environments for customers;
- Local infrastructure projects like city WiFi and 2010 Olympic opportunities; and
- International markets and contacts and access to new sales and distribution channels

In short, the small- and medium-sized enterprises that make up BC's local wireless industry need access to world-class, cutting-edge equipment to test their products and to demonstrate their facility to potential buyers. There are no such wireless facilities in British Columbia and yet they are available in every other region in Canada.

C. The Solution

The mission of the proposed WINLAB is to develop the infrastructure facility and supporting resources to maximize BC wireless companies' probability of commercial success. It will not only provide technical facilities but also a wide range of strategic resources to support BC's wireless industry and to assist with successful commercialization.

The WINLAB facility will be adjacent to the Bell Innovation Centre that is currently in the design phase. It will be designed to facilitate WINLAB activities such as technology showcases, wireless

workshops, mentoring, useability, and focus group activities, as well as a broad range of technical tasks, such as mobile application and device testing.

The facility will have state of the art wireless equipment including:

- a mobile messaging and multimedia platform,
- a location-based services platform, and
- connectivity to a live production network, a private 3G network, and Bell's development network.

WINBC, its members, and the local wireless community will be able to utilize WINLAB's extensive technology, lab resources, equipment, and connectivity to wireless platforms for operational real-world, real-time product demonstrations, showcases, industry forums, hands-on workshops, mentoring, and other programs.

D. Funding Commitments

The financial request from the proponents of WINLAB is very well leveraged with support from the private sector. Furthermore, through its association with the Bell Innovation Centre, WINLAB will allow BC to garner further benefits from that $10 million Olympic 2010 commitment.

The proceeds will be divided between one-time capital expenditures and the execution of the operational business plan. It is expected that income generated from WINLAB service fees will be enough to cover the ongoing annual operational expenditures. As a result, this is a one-time only funding commitment.

E. Results

WINBC, through collaboration with the private sector, industry associations, and government, will plan, design, administer, and establish the centre opening in Q1 of 2007. It is anticipated that the WINLAB centre will be sustainable within three to four years.

The immediate and long-term benefits are clear and substantial. Small- and medium-sized companies will gain from business development opportunities, new sales and marketing channels, and new investment. They will also be able to showcase their technology and engage in partnering programs. Large companies will gain access to innovation, new solutions, new companies and technology, international business development opportunities, an improved talent pool, and a healthier wireless ecosystem. In sum, government and the community benefit from new economic opportunities and growth, retention and attraction of world-class talent, and integration and advancement of traditional industry sectors with wireless technology.

With the support of the BC provincial government, WINLAB will be a catalyst to achieve the following results:

WINLAB Results:	2006	2010
Wireless Industry Revenue	$1 billion	$1.5 billion
Wireless Industry Employment	5,000	8,000
Wireless Companies in BC	250	350
Overall Wireless Industry Growth	15%	23%

F. Conclusion

The Premier's Technology Council believes that WINLAB's projected goals for industry growth are both measurable and credible. The PTC's investigations have also confirmed that WINLAB has very strong support in the sector as its most important project. Numerous wireless companies in BC have already expressed a strong desire to utilize the WINLAB facility. This project meets a number of criteria important to the PTC. It leverages the existing investment of Bell's innovation lab, strengthens the industry by providing facilities for testing, demonstration and marketing that it can not currently access, strengthens links between the wireless industry and other important sectors such as new media, provides impressive returns for both the industry and the provincial economy and will not require ongoing government funding. Finally, the PTC has also determined that this proposal does not represent a subsidy to any one company and constitutes infrastructure funding that would provide benefits on a sector-wide basis.

G. Recommendation

Following careful research and consultation, the PTC recommends:

9.6 That the government support and invest in the WINLAB project

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Appendix A. List of Roundtable Participants

Greg Aasen, Chief Strategy Officer
PMC-Sierra

Lori Ackerman, Executive Director
Sci-Tech North

Diane Akelaitis, Partner
PriceWaterHouseCoopers

Scott Anderson, Client Executive
Microsoft Canada Co.

Don Avison, President
The University Presidents' Council of BC

Max Blouw, Vice President Research
UNBC

Jeremy Boyd, Senior Manager
BC Ministry of Economic Development

Jim Brookes, COO
MITACS

Lynda Brown, President
New Media BC

Dennis Bruchet, Manager
Western Economic Diversification Canada

Jim Charlton, Senior Vice President
Growthworks Capital Ltd.

Bruce Clayman, President & CEO
Great Northern Way Campus

Colleen Collins-Dodd, Program Chair
SFU Business

Greg Conner, VP Human Resources
EDS Advanced Solutions

Rob Cruickshank, President
BCTIA

Dan Cvitanovich, Board Chair
Mid-Island Science, Technology & Innovation
Council

Bruce Deacon, Manager
Ministry of Advanced Education

Rolf Dekleer, VP Investments
Growthworks Capital Corp.

David Dolphin, CEO
BC Innovation Council

Bruce Drake, Executive Director
Industry Canada

Karimah Es Sabar, Executive Director
BC Biotech

Kevin Falk, CTO and COO
Vivonet

Philippe Favreau, General Manager
KODAK

Don Ference, President
Ference Weicker & Company

Mark Grambart, CEO
Contech Electronics

Steve Grundy, Acting Vice President
Royal Roads University

Dan Gunn, Executive Director
Vancouver Island Advanced Technology
Centre

Arvind Gupta, Scientific Director
MITACS

David Hall, CCO
Angiotech Pharmaceuticals

Peter Haubrich, Executive Director
Okanagan Research & Innovation Centre

Kathryn Hayashi, CFO
Centre for Drug Research and Development

Colin Heartwell, Director
Canadian Manufacturers and Exporters

John Hepburn, Vice President Research
UBC

Brent Holliday, Partner
Greenstone Venture Partners

Dawn House, PhD Candidate
UBC

Lauren Hunter, Vice President
UBC Graduate Student Society

Christine Slanz Ignas, Executive Director
Northwest Science and Innovation Society

Sandy Innes, Vice President
TELUS

Brenda Irwin, Director
Business Development Bank

Marlene Jan, Principal
Think Relocation Consulting

Barry Jinks, President & CEO
Colligo Networks, Inc.

Victor Jones, President
Cast Ventures Corporation

Richard Juren, Director of Engineering
MacDonald, Dettwiler and Associates Ltd.

Richard Keeler, Associate Vice President
Research
University of Victoria

Tony Knowles, President & CEO
BCIT

Chris Laird, Vice President
Ventures West Management Inc.

Patrick Lauzon, Manager
Merck Frosst Canada Ltd.

Ann Levi-Lloyd, President & CEO
JALANN Enterprises Inc.

Julia Levy, Executive Chairman
QLT Inc.

Angus Livingstone, Managing Director
UBC UILO

John Lorenz, Manager
Industry Canada

Marco Marra, Director
BC Cancer Agency

John McEwen, Co-CEO
Discovery Capital

David McIntyre, VP
Ventures West Management Inc.

Stuart McLaughlin, President
Grouse Mountain Resorts

Bill McQuarrie, Executive Director
Interior Science Innovation Council

Bert Miles, Chair
Investment Agriculture Foundation of BC

Michael Miller, Dean of Engineering
University of Victoria

Reg Nordman, Managing Partner
Rocket Builders

Amy Ogawa, Manager
Pfizer Canada Inc.

Patrick Payne, Director
Wireless Industry Partnership

Charles Perrin, Special Advisor
Service Canada

Mario Pinto, Vice President Research
SFU

S Poon, Program Manager
Ministry of Economic Development

Don Prior, Managing Partner
The Caldwell Partners International

Moura Quayle, Deputy Minister
Ministry of Advanced Education

Irfhan Rajani, President & CEO
Apparent Networks

Jim Reichert, Vice President
BCIT

Glenn Rousseau, Executive Director
BC BioProducts Association

Allison Rutherford, Executive Director
BCTIA

Christopher Ryan, Executive Director
National Research Council

Kelvin Saldern, Executive Director
Kootenay Association for Science and
Technology

Bruce Sampson, Vice President
BC Hydro

Bijan Sanii, President & CEO
Inetco

John Savage, President
Interior Science Innovation Council

Bruce Schmidt, Corporate Secretary
Genome BC

Glen Scobie, Manager
Ministry of Economic Development

Alan Shotter, Director
TRIUMF

Greg Smith, Director
Business Development Bank

Stephen Smith, Project Director
Flintbox

Roy Spooner, Executive Director
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Paul Swinwood, President
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Carolyn Tatton, Executive Director
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Todd Tessier, Director
International Capital Markets

John Thompson, Vice President
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Kirsten Tisdale, Senior Client Partner
Korn/Ferry International

Jean Trask, Associate Director
SFU UILO

Stuart Turnbull, Client Executive
TELUS

Shauna Turner, Director
BC Biotech

Serge Vanasse, Vice President
Modelsoft Consulting Corporation

Tim Walzak, President & CEO
UVic Innovation & Development Corporation

Justin Webb, VP Olympic Services
Bell Canada

Jenny Yang, Director
Business Development Bank

Appendix B. Summary of Recommendations

This is a list of recommendations made by the PTC in this and all preceding reports. They are numbered in the order in which they appear in the original report.

9th Report

Citizen Centred Services

In order to implement the technological integration required to achieve the five great goals the PTC believes that:

9.1 Ministries should be directed to share data collaboratively with programs outside their own Ministry and actively seek such opportunities in order to deliver seamless coordinated services to the citizens.

9.2 The role of the Chief Information Officer (CIO) should be enhanced with the authority to set standards, architecture and policy for IT purchases and development across government, and to monitor compliance with those standards. Precedent for this model is in the Office of the Comptroller General. Furthermore, for this CIO to assist the government in achieving its goals it should:

  a. be adequately resourced to complete the integration of government systems.

WINLAB

9.6 That the government support and invest in the WINLAB project.

  b. be given responsibility for managing privacy considerations on a government wide basis. A Chief Privacy Officer (CPO) should be established in the CIO offices to set guidelines and procedures that protect privacy without unnecessarily hindering data sharing.

9.3 Government should focus on some important key projects to generate early success and grow confidence both with the citizens of BC and within the public service.

e-Learning - Assessment

9.4 That the provincial government consider dedicating the time and resources needed to expand the limited e-examination system with a long term goal of e-examinations as the norm.

9.5 That the provincial government consider developing a 'teach the teachers' program on e-examinations

8th Report

DIGITAL DIVIDE

8.1   That the government commit further funds to addressing "last mile" issues inherent to the Digital Divide. The funds would add value by preparing communities for the arrival of broadband and by equipping them to benefit from its introduction.

FIRST NATIONS

8.2   That the Joint Task Force be constituted as soon as possible and tasked to develop and resource an action plan to bring broadband to First Nations communities in BC.

8.3   That the Premier and government Ministers continue to support the Transformative Change Accord, urge their federal counterparts to support the connection of broadband to First Nations communities in British Columbia, and enter into a partnership with British Columbia and First Nations in this province to accomplish this task.

IDENTITY MANAGEMENT AND SECURITY

8.4   That government define an architecture and an implementation/delivery strategy for service integration and information sharing that spans the public service; that recognizes the diversity and mandates of the organizations that participate in delivering public service; and that recognizes the complexities of the service integration and information sharing.

8.5   That government ensure a budget and process exist to accommodate the major investments in corporate government infrastructure needed to provide identity management, privacy and security capabilities.

8.6   That government expand its notion of identity management to include the broader public sector (i.e., important registries such as client registries, master patient indexes, health care provider registries, student registries, and social service provider registries). The strategy identified in 8.4 also needs to address how the registries will be cooperatively

managed (for example, which one will be the authoritative source).

8.7   That government ensure public sector investment in better information security technologies is done in a way that provides open connectivity for all users that arrive at any public facility or location. This is especially important as organizations look to extend their current wired networks with wireless capabilities.

8.8   That government approach federally sponsored initiatives in an organized fashion. For example, the Ministry of Health and the health authorities are working cooperatively to secure funding from Canada Health Infoway. This will ensure that BC does not build infrastructure to support health solutions in stand-alone silos that increase costs and complexities in integrating these sources into the government's electronic service delivery environment.

8.9   That government pursue these issues and recommendations through stakeholders

across the broader public and private sector by utilizing a model similar to the NetWork BC project, with the aim of optimizing the amount of investment required and increasing the quality of the result for the entire public sector.

PRIVACY

8.10 That government revisit the responsibility structure for privacy management and ensure the authority is appropriately delegated and that there are sufficient resources available for the development, implementation and monitoring of policies and procedures.

8.11 That government clearly communicate to the public how it manages privacy and educate public service employees on privacy management in an electronic environment.

8.12 That government ensure all ministries deliver on their legislative requirement to conduct privacy impact assessments.

These privacy impact assessments must be conducted at the onset of new e-government initiatives and be reviewed periodically to ensure that the privacy considerations have been addressed in the design and continue to be addressed successfully in production.

8.13 That government periodically review privacy and program legislation to ensure that it anticipates technological advances and is not rendered obsolete by them.

8.14 That government ensure a secure electronic infrastructure to protect privacy.

TECHNOLOGY AND EDUCATION

8.15 That government ensure the investment in the BCeSIS system to finalize its installation and provide as rapid implementation as possible.

CAPITAL AND INVESTMENT

8.16 That the provincial government expand the SR&ED program to provide the provincial refundable tax credit to all companies in BC.

8.17 That the provincial government work with the federal government to remove any administrative and fiscal constraints that hinder foreign capital investment into BC's companies and venture capital pools.

8.18 That the provincial government work with the federal government to recognize tax-exempt corporations under the Canada/US Income Tax Convention to encourage foreign capital investment into BC, and Canada in general.

POWER TECHNOLOGY

8.19 That the government support and implement the initiatives outlined by the Alternative Energy and Power Technology Task Force.

NEW MEDIA

8.20 That government support and invest in the development of the Master of Digital Media program and the World Centre for Digital Media located at the Great Northern Way Campus.

7th Report

DIGITAL DIVIDE

7.1   That the provincial government work with the federal government to create a Joint Task Force with the expertise, authority and resources to provide broadband and related services to First Nations communities in British Columbia wherever reasonably possible. The Task Force must also have First Nations representation.

e-HEALTH

7.2   Define a provincial strategy and architecture for the Electronic Health Record and commit to its implementation. The PTC recommends that the provincial government:

- Give the highest priority to establishing architecture for the Electronic Health Record, giving consideration to the best industry practice using Internet technology. A defined EHR solution that aggregates existing information in the healthcare system will determine the appropriate standards and interface to ensure that the evolution of systems are properly directed.

- Ensure that the EHR strategy incorporates features to empower patients to better manage their own health and to interact with the health care system electronically.

7.3   Create a business model and data exchange standard to integrate the EHR with private practice physicians' internal Electronic Medical Records (EMR). To do this, the Council recommends:

- That a task force be established to determine a single business model and data exchange standard that will allow electronic information exchange with private practice physicians and their internal EMR while respecting patient privacy rights. Priority should be given to the electronic delivery of information to private practice physicians (for example, to improve chronic disease management), and the collection of private practice physician information should be deferred until a definitive plan is determined.

- That this strategy and business model incorporate a method to encourage private practice physicians to acquire broadband network connections for their offices, principally via demand for the "content" made available from the health authorities EHR.

7.4   Establish preferred standards for the regional implementation of clinical systems and give priority to optimizing clinical workflow on an enterprise basis across regions, as distinct from workflow bounded at each facility. To do this the Council recommends:

- That the eHSC and its working committees establish a policy for the preferred architecture for the deployment of clinical systems, as a basis for making future investments and joint procurement purposes.

- That the health authorities give priority to adopting the preferred architecture and undertake projects to optimize workflow within the next three years.

7.5   Continue infrastructure investment. The PTC recommends that the provincial government:

- Complete broadband network services to acute care facilities, expand the

network to all government-managed care facilities, and consider a network platform that connects service provider groups within the health authorities.

- Invest to execute on the strategy for a client registry with the ability to uniquely identify each client. This will provide a critical resource for the establishment of the Electronic Health Record. Furthermore, collaboration managed through the eHSC should establish operational methods to add new persons to the client registry and to manage identity records efficiently. The client registry should be considered as a resource for the potential integration of client identity for other social services.

- Continue to invest in the execution of its implementation plan for the provider registry, in consultation with the College of Physicians.

- Invest in the continuing development of a detailed architecture and operational plan built on the common "active directory" security access standard. This would be used to develop a comprehensive system access standard that will be inter-operable (single sign-on) across regional systems. It would also meet national security and privacy standards. Preference should be given to the harmonization of regulations with the standards

primarily adopted by major software systems.

7.6 Continue to develop telehealth initiatives. The PTC recommends that:
- The relevant agencies move expeditiously to expand fee codes to cover all billing categories, except where there is a specific medical reason where they should not apply.

- Under the guidance of the eHSC, there be continuing evaluation of opportunities to implement specific telehealth services that achieve positive clinical and economic outcomes.

7.7 Governance and management. The PTC recommends that the leadership of health authorities and Ministry of Health Services collectively:
- Place priority on collaboration to achieve significant progress in the development of the e-health system.

- Ensure that development of the e-health architecture is within the context of best industry practice, and also establish a process of independent evaluation of the effectiveness of all e-health technology deployed.

- Invest in resources to effectively lead the process of change management of a system required to successfully implement technology that will automate the delivery of healthcare in the province.

IT PROCUREMENT

7.8 That the provincial government continue its procurement reform initiative in cooperation with industry to ensure the most effective process possible. It should consider the issues and the suggested solutions identified at the procurement symposium and further examine those that did not receive due attention.

CAPITAL AND INVESTMENT

7.9   The PTC recommends that government continue its existing programs under the *SBVC Act* and work with federal government to secure federal funding for the program.

HUMAN RESOURCES

7.10   That the provincial government work with industry to develop an accurate inventory of the province's current and projected technology sector skills and then execute on strategies designed to close critical skills gaps that impair growth of designated technology clusters.

7.11   That the provincial government work with industry to develop immigration policy recommendations to the federal government targeted at attracting the senior management required to grow BC's technology sector.

7.12   That the provincial government work with industry and the federal government to define modifications to the *Income Tax Act* that would improve industry's ability to attract top senior talent to BC's technology sector.

POWER TECHNOLOGY

7.13   The PTC recommends that the government pursue the strategies outlined in the report (*A Vision for Growing a World-Class Power Technology Cluster in a Smart, Sustainable British Columbia*) to advance the power technology industry and secure BC's position as a world leader.

NEW MEDIA

7.14   That the government work with industry to extend the DAVE tax credit to include the new media sector.

7.15   That the government establish a world class, graduate-level program in digital entertainment technology.

6th Report

DIGITAL DIVIDE

6.1   The PTC recommends that government:
- Keep up the momentum to extend broadband to the remaining communities as quickly as possible.
- Work with communities to identify last mile solutions.

INDUSTRY DEVELOPMENT

6.2   The PTC recommends that government:
- Recognize and support the important role that regional technology councils play in fostering innovation and small business development within their region.
- Support the formation of a regional technology council in the Northwest.
- Provide incentives to encourage growth and development of technology companies in the regions.

- Market the technology innovations and opportunities for the province as a whole through Leading Edge British Columbia.

e-Learning

6.3 The PTC supports the PLNet initiative and recommends that its installation and capacity review continue to receive top priority to ensure it has the ability to meet ever-expanding needs.

6.4 The PTC recommends that government, through the Ministry of Education, in cooperation with industry and the school districts, support the goals and financing needs of BCEd Online, and that the Ministry continue to monitor and promote the expansion of its activities to all school districts in the province.

6.5 The PTC recommends that the Ministry of Education:

- Continue research in e-learning for K-12 to include funding for school districts to use IP video and other telecommunications technology delivery systems.
- Conduct education programs for teachers to provide them with the skills necessary to utilize e-learning technology.
- Promote the use of technology in school districts.
- Continue to work with other provinces to research, evaluate and test, and cost-share in the implementation of e-learning strategies in the provinces K-12 system.

e-Health

6.10 The PTC recommends that government support the adoption of a fee code structure that allows health care providers to bill for e-health procedures.

6.6 The PTC recommends that the Ministry of Education investigate providing a capability to encourage and assist students to enter high-tech careers. The Australian Skills Hub distance learning program, located on the web at www.itskillshub.com.au, is a good example of a resource that has been very successful.

6.7 The PTC recommends that government, through the Ministry of Advanced Education, continue to encourage and support the BCcampus initiative as the leading organization to promote e-learning concepts at the post-secondary education level.

6.8 The PTC recommends that government, through NetWork BC, in cooperation with other ministries, lead a process whereby a comprehensive and focused team (possibly federal/provincial) work with First Nations to address digital divide issues and government services such as e-learning and e-health.

6.9 The PTC recommends that the government work with BC universities, both the federal and provincial governments and large and small business to promote the establishment of an R&D facility to advance the e-learning industry in BC.

6.11 The PTC recommends that the government establish a governance structure dedicated to the development and implementation of the EHR. Its

structure and accountabilities would involve the following:

- A pre-determined term (24-36 months, for example) be set, and clear, reasonable success criteria developed.
- A team leader who is a member of the ministry executive reporting to the deputy minister.
- Positioning so that it is acceptable to the entire community (the health ministries, health authorities and practitioners).
- A direct link between the success of the team and the success of the EHR implementation.

- A funding model utilizing resources from other bodies such as Canada Health Infoway. The model must allow for central decision making on the common or province-wide EHR infrastructure but also provide continued funding for specific health authority equipment and software.
- An advisory group with members from the ministry, health authorities and practitioners to guide development activities.

CAPITAL AND INVESTMENT

6.12 The PTC recommends that government expand the tax credits under the *SBVC Act*. Further, government should change appropriate regulations so that the tax credits exist as a total allocation over multiple years and unused credits can be transferred between programs.

HUMAN RESOURCES

6.13 The PTC recommends that government, through Leading Edge British Columbia, undertake special marketing initiatives to assist in recruiting talent for high-tech companies throughout the province.

ALTERNATIVE ENERGY: FUEL CELL

6.14 The PTC recommends that government build on the record of success and work with the energy technology sector to complete the "Hydrogen Highway™" prior to the 2010 Olympics and to further develop the sector.

5th Report

CAPITAL AND INVESTMENT

5.1 That the provincial government extend the British Columbia SR&ED tax credit program beyond its current expiration date (September 1, 2004) and make it an ongoing program with periodic reviews.

5.2 That the provincial government initiate an advocacy program with the federal government to:
- Review and modify the rules within the SR&ED program that restrict tax credits to companies having investment from public companies and/or non-residents. This would ensure that firms that have obtained capital from legitimate sources are not being excluded from other important and appropriate financing sources.
- Review and modify restrictions in the program, mandated at a federal level, with respect to differences in the treatment of public (20% tax benefit carry forward) and private (35% tax credit carry forward) companies.

5.3 That the provincial government develop and implement an equity participation incentive to attract technology companies, senior management, key employees and head offices to British Columbia. The incentive must lower and/or eliminate the provincial tax payable on the exercise or disposition of stock options. The incentive would be applicable to:
- All employees who are residents of BC at the end of the calendar year and file for a BC tax return,
- All forms of equity compensation such as stock options and restricted stock, and

- The gain in value between the fair market value on the date of grant and the price on disposition.

The incentive would provide a tax credit equal to 50% of the provincial tax payable if the option is held for greater than 1 year but less than 2 years and a tax credit equal to the provincial tax payable if the option is held for more than 2 years.

5.4 That the provincial government work with the federal government to explore the issue of double taxation by nations whose citizens are working in Canada and ensure that all parties honour both the intention and letter of the appropriate treaties, and that the federal government, when acting upon new tax treaties, pay particular attention to double taxation clauses.

5.5 That the provincial government work with the federal government to extend the loss carry-forward provision from the existing 7 year period to 20 years (the newly enacted US limit).

5.6 That a thorough review of all regulations and taxation involved with foreign pension and investment fund investment in venture capital and entrepreneurial growth business be undertaken by the province in cooperation with the federal government.

5.7 That the provincial government undertake a study to investigate the under-investment of pension funds and other investment portfolios in venture capital, determine the key drivers (particularly educational and training) that would enhance such investment, and work with

the venture capital industry and appropriate industry associations to encourage and/or secure further investments by such portfolios in venture capital funds within the province.

5.8   That the provincial government remove the individual annual limit in the provincial *Income Tax Act* for angel investors in eligible small businesses under the *Small Business Venture Capital Act.*

5.9   That the provincial government develop programs to focus on attracting and/or building 2 to 3 new, venture capital funds per year, staffed with experienced venture capital players, in British Columbia. The new funds would be required to:
   - Be associated with a top tier world class venture capital player that is establishing a new fund in BC,
   - Be a new fund primarily directed at investment in BC which counts among the principals in the new fund individuals with extensive venture capital experience.

   Any new funds must:
   - Establish their funds locally: a BC office and general partners in BC,
   - Target its investments in BC companies, and
   - Raise private capital before accessing the BC programs.

5.10   That immediate steps be taken to identify an appropriate and targeted campaign for creating greater awareness of

British Columbia as a high technology jurisdiction and to make clear the entrepreneurial opportunity that lies within it. The campaign should be designed to be undertaken with existing provincial high technology and biotech players so that it benefits both the companies and the region.

5.11   That the provincial government work with the venture capital industry, successful high technology and biotech businesses, and appropriate trade associations to host small group meetings in the key investment centres of New York, London, Boston, Frankfurt and San Francisco.

5.12   That the provincial government work with industry and the financial and academic communities to invite the management teams of the top 20 global venture capital and private equity funds to visit the province on fact-finding tours. This should be executed within the year, in an effort to build momentum in the venture community.

5.13   That the provincial government work with the universities and institutes to ensure that British Columbia is receiving its fair share of federal funding for innovation, as well as any available industry funding. In addition, the PTC recommends the province work with industry and the academic sector to ensure that BC-based companies, or those having significant satellite plants in the province, are actively investing in innovation in the province.

HUMAN CAPITAL FOR AN INNOVATION ECONOMY

5.14   That the provincial government work with industry to develop a means to raise awareness of the opportunities available in an information-based economy and assist citizens to enter technology-related careers.

5.15   That the Ministry of Education continue to develop its K-12 e-learning strategy through the BCEd Online initiative to ensure that consistent, province-wide

standards and content are developed and maintained.

5.16 That the provincial government fully implement the BCcampus initiative.

5.17 That the provincial government revise the definition of a "high technology professional" to provide:

- Enhanced clarity for employees and employers to minimize disputes and costly resolution processes.
- Greater clarity as to what occupational activities are included as opposed to defining specific occupational titles that limit interpretation.
- Inclusion of all occupational activities related to the full product and service life cycle, including sales and marketing.
- Clear inclusion of other high technology sectors such as new media, alternative energy (fuel cells), and biotechnology. The definition should also leave room to include new technologies as they emerge.

4th Report

THE PTC PRIORITY RECOMMENDATIONS

4.1 Continue to work to implement all previous PTC recommendations with priority consideration of the following by government in the coming year:

a. Broadband

Provide broadband services to all British Columbia communities. Work with the federal government to accomplish this in the next three years.

b. Government Operations - Telehealth

Make telehealth a top priority and continue work to adopt and implement common health information technology infrastructure and standards, and establish an e-Health Task Force.

c. Industry Development

1) Venture Capital -
Work to pass the PTC's previously recommended amendments to the *Small Business Venture Capital Act* (*SBVC Act*).

2) Promoting British Columbia -
Develop a provincial marketing strategy and take every opportunity possible to promote the province. This includes:

a) Marketing and promotion missions led by the Premier

b) A marketing and promotion plan developed from government analyses of the five key emerging industry sectors in British Columbia – information technology, life sciences, new media, alternative energy and wireless. The plan would provide for a sustained marketing effort of the province's technology industry and business climate. Among other things, it would include:

   i. Developing and executing a branding strategy and marketing plan for the British Columbia technology community.

   ii. Creating an inward-bound information centre for prospective corporate recruits to the province.

ALTERNATIVE ENERGY

4.2 Combine the strengths of the provincial and federal governments, industry and academia to develop and implement an aggressive British Columbia Fuel Cell Strategy that parallels and builds on a similar National Fuel Cells Strategy. Activities in the provincial strategy should include:

a) Enhanced support for research and development carried out by the private sector and in public institutions (in collaboration with industry).

b) Support for market focused demonstration projects in both public and private sector applications. This should include real life situations that validate product reliability and output, "ruggedize" the product, provide quality assurance data, and help manufacturers make the necessary alterations to earn commercial success.

c) The British Columbia government becoming an early adopter of fuel cell products. Government departments and crown corporations being real customers raises the profile and supports the development of markets.

d) Accelerate the development of harmonized codes and standards. Government and industry collaboration is necessary to remove regulatory obstacles to the introduction of fuel cell products and systems.

e) Incentives that support and reward growth and investment such as:

   1) Encourage the early adoption of fuel cell and related products and systems by providing fiscally neutral tax based incentives, such as the income tax payback approaches used in Michigan.

   2) Consider programs having an initial cost but longer term substantial savings to the treasury.

f) Development of infrastructure which includes building upon investments already made by BC Hydro and others.

g) Ensure the availability of a highly skilled, well-trained workforce. This involves conducting industry and government collaboration with secondary and post-secondary institutions to define and implement appropriate education and training at all levels in the post-secondary system.

REWARDING INNOVATORS IN THE PUBLIC SERVICE

4.3   Accelerate and reinforce desirable change in the public sector by adopting the Premier's Awards in all the proposed categories (leadership, service excellence, innovation and partnership), especially the innovation category.

3rd Report

IT PROCUREMENT

3.1   Examine the scope of its current procurement reform initiative to ensure it adequately addresses the unique nature of IT procurement and permits adoption of a benefits-driven procurement model based, above all, on the business objectives rather than the technology requirements of government.

3.2   Identify a senior government official to drive both a strategy and implementation process around IT procurement reform. This official will also be responsible for fostering development and adoption of new IT procurement tools and models; facilitating government-wide and industry education; and championing support throughout government.

3.3   Create a joint government and industry task group to address the wide range of issues associated with IT procurement reform, with particular attention to the prioritized list of issues and proposed solutions emanating from the Procurement Symposium as well as the larger list of tactical and strategic issues identified by the PTC during its consultative process.

3.4   Continue the momentum. Hold a follow-up IT procurement symposium within 120 days. The joint industry/government event should include a progress report from government outlining its response to the set of recommendations contained within this report, as well as future plans, deliverables, and timelines.

e-HEALTH

3.5.   Establish an e-Health Task Force composed of both government representatives and health care professionals to address the recommendations arising from the e-Health Roundtable. In addition, the mandate of the e-Health Task Force would include:

- coordinating and leveraging current e-health initiatives, including clinical and educational telehealth projects;
- the implementation of an Electronic Health Record (EHR), in conjunction with other levels of government and across ministries. This standard EHR would be adopted by all Health Authorities, institutions and businesses providing health care services in the province;

- address the licensure, liability and billing issues and the resulting changes required to existing policy or legislation to enable health care givers to participate in telehealth; and
- conduct a community consultation
- process to identify specific telehealth applications that will address critical needs in each community.

VENTURE CAPITAL

3.6. To meet the acute need for seed and early stage venture capital within the province, the PTC strongly recommends that the proposed amendments to the *SBVC Act* be passed by the legislature prior to the beginning of 2003. Failure to do so will discourage and inhibit the facilitation of more early stage capital within British Columbia, and will put us further behind other jurisdictions.

Second Quarter Report

UTILIZING SPAN/BC NETWORKS

2.1   Upgrade and extend SPAN/BC so it is capable of delivering advanced broadband network infrastructure to the communities of British Columbia.

2.5   Find ways to open up SPAN/BC to allow communities to take advantage of the government's broadband infrastructure in those communities where the private sector is unlikely to provide high speed Internet access to citizens and businesses.

PRIVATE SERVICE PROVIDERS' NETWORKS

2.4   Investigate all potential levers including – but not limited to – aggregating public demand, so that it can prompt service providers to extend and update their current telecommunications network infrastructure.

2.6   Reform procurement policy to allow for flexible, creative and competitive procurement models that will stimulate the private sector to upgrade and expand their broadband network infrastructure, as well as encourage the entry of local service providers, such as community-based networks, into the marketplace. To this end, two or three communities should be identified as pilot sites for further detailed planning, and implementation.

2.7   Conduct a Request for Information that solicits vendor and community stakeholder reaction to these recommendations, and taps into the innovative and creative potential for public-private partnerships that exists in the marketplace.

BROADBAND - DEMAND AGGREGATION

2.2   Aggregate total public sector demand (including core government, health authorities, schools, etc) where feasible to upgrade and expand SPAN/BC so that it will be capable of providing next-generation broadband infrastructure to the communities of British Columbia.

2.3   Investigate fully the economics as well as the potential benefits or obstacles inherent in aggregating public sector demand.

PUBLIC ACCESS AVAILABILITY

2.8   Make sure that there is public access to the Internet in every community in British Columbia.

2.11   Develop a complete map-based inventory of all public access sites by community to

determine if the levels of public access and location of sites are appropriate for the size and demographics of the population.

PUBLIC ACCESS SUSTAINABILITY

2.9 Work closely with the federal government to coordinate the allocation of scarce public dollars for public access.

2.10 Find ways to sustain existing public access sites in the province and meet the growing public demand by increasing, where necessary (based on demographics and usage patterns), the number of sites, the number of public access terminals, the

IMPROVE AWARENESS ON PUBLIC ACCESS

2.12 Improve awareness and visibility of public access.

PROVINCE-WIDE HEALTH IT STANDARD

2.16 Continue meetings between the executive of the new Health Authorities and the Ministry of Health Services and Ministry of Health Planning to discuss province-wide health information and information technology standards that will apply to all six Health Authorities as they move to restructure and consolidate.

2.14 Work with the First Nations of British Columbia and the federal government to bring information technology, including public Internet access, to remote First Nations communities in British Columbia.

2.15 Determine if the province's 58 sCAT locations and if existing PLNet facilities could be used by the public to access the Internet.

available bandwidth, and the hours of operation.

2.13 Increase staffing levels at public access sites through programs like Youth@BC, through partnering with Industry Canada's CAP Youth program, or through use of the Labour Force Development Agreement with the federal government to train unemployed individuals to work at access sites

2.17 Ensure each of the Health Authorities appoints a person to be responsible for information management and technology with the task of implementing the appropriate standards in collaboration with the Ministry of Health Services and the other health authorities.

2.26 Extend its standards beyond just ministries to its agencies and other government service providers.

Ensure that the designated chief information and technology officers of each authority work with the Ministry of Health Services and Ministry of Health Planning and other appropriate ministries to establish integrated technology standards province-wide. At a minimum these information and technology officers should:

2.18 Establish a consolidated provincial strategy for Health Information Management and Information Technology (IM/IT).

2.19 Adopt and implement common health information technology infrastructure and standards.

2.20 Evaluate and seize opportunities for moving towards shared services where practical and cost-effective.

2.22 Identify policy changes needed to support the electronic delivery and management of health services.

2.23 Recognize information technology development as a strategic investment.

E-HEALTH AND TELEHEALTH STRATEGY

Ensure that the designated chief information and technology officers of each authority work with the Ministry of Health Services and Ministry of Health Planning and other appropriate ministries to establish integrated technology standards province-wide. At a minimum these information and technology officers should:

2.21 Develop a provincial strategy to facilitate Telehealth and electronic health record initiatives in consultation with medical and continuing education units of the colleges and universities.

2.24 Facilitate the advancement of key e-health and Electronic Health Record initiatives.

2.25 Establish a British Columbia e-Health Think Tank composed of e-health visionaries, not senior IT staff, who will examine the applications side of e-health, since it will be compelling applications that drive down costs and improve the delivery of health services to the remote and rural regions of the province.

IT PROCUREMENT

2.39 The provincial government should expedite its efforts to rewrite its Policy and Legislative Framework around Procurement Reform so as to result in more streamlined, flexible, and cost-effective processes for both government and the British Columbia supplier community, ensuring fair and open procurement throughout the province. The government should also develop procurement policies and educational programs for both ministries and the supplier community which will provide British Columbia-based technology companies with the tools and skills required to compete more effectively for government contracts.

VENTURE CAPITAL - CHANGES TO *SBVC ACT*

Accelerating 'Early Stage' Technology Investment

The provincial government should proceed promptly with the following streamlining amendments to the *SBVC Act* to address the need for early stage capital investment in technology companies:

2.27 Expand the tax credit budget legislated under the *SBVC Act* from $50 million to $100 million annually.

2.28 Introduce an investment model under the *SBVC Act* that does not require the registration of a separate VCC to facilitate

investment and tax credits under the programs in order to allow direct investment, cut red tape and reduce program registration costs.

2.29 Increase the total amount of capital one business may receive under the program (beyond the current $3 million) to better reflect the capital needs of many early stage technology companies.

2.30 Increase the employee threshold limit for a small business from 75 to at least 150.

2.31 Allow approval for common investment regimen, such as multi-tranche investments over multiple years based on attainment of established milestones.

Leveling the Playing Field for Tax Credit Investment in British Columbia

The provincial government should enable small businesses and venture capital managers participating under the *SBVC Act* to raise and invest venture capital, with the assistance of tax credits, under the same conditions that are presently offered to the one Labour Sponsored Venture Capital Corporation (LSVCC) operating in British Columbia and other LSVCCs operating throughout Canada.
To achieve parity with labour sponsored funds, the task group recommends the following amendments be made to the *SBVC Act*:

2.32 Allow program investors the option to invest directly from their self-directed retirement savings plans.

2.33 Make the tax credit incentives available for program investment within 60 days after the calendar year.

2.34 Increase program flexibility in program capital investment beyond simple common or preferred shares.

2.35 Provide VCC investors up to 24 months to complete investments.

2.36 Open up the tax credits provided to the sole LSVCC to competition by allowing other venture capital firms to enter the market to create a more dynamic venture capital community.

RESEARCH AND DEVELOPMENT

2.37 The provincial government should take steps to create an e-learning chair at one of BC's universities.

ATTRACTING TALENT TO BRITISH COLUMBIA (RECRUITMENT)

2.38 The provincial government should work with the federal government to change immigration rules so that spouses of employees moving to British Columbia can work here automatically.

BRITISH COLUMBIA PROVINCIAL BRANDING

2.40 Develop a provincial branding and marketing strategy that feature technology and innovation as key drivers supporting British Columbia's image as a place with a sustainable and vibrant economy, including resource and knowledge-based industries, and an unparalleled quality of life.

2.41 Develop a strong macro-image positioning British Columbia as a desirable technology destination for investors, employees and site selectors.

2.42 Develop and execute its provincial branding strategy in consultation with the technology community.

MARKETING BRITISH COLUMBIA

2.43 Target its technology industry marketing effort at key audiences that include decision makers in technology investment, site selection and highly skilled workers.

2.44 Focus its technology industry marketing strategy initially on four sectors known as areas of strength within the province: biotechnology, wireless, alternative energy and new media.

2.45 Focus its marketing strategy to attract highly skilled workers or those individuals that may be predisposed to move to Canada such as expatriate Canadian and British Columbia technology workers and members of communities that are already represented in British Columbia.

First Quarter Report

PUBLIC AWARENESS ON THE BENEFITS OF E-GOVERNMENT

1.8 Educate British Columbians about the benefits of being fully connected, including access to relevant Internet-based applications and information, and increasing e-government services.

RESEARCH AND DEVELOPMENT

1.1 Double the number of computer science and electrical engineering graduates from British Columbia post-secondary institutions.

1.2 Establish 20 British Columbia Research Chairs in the fields of medical, social, environmental, and technological research.

ATTRACTING TALENT TO BRITISH COLUMBIA (RECRUITMENT)

Attract senior professionals to accelerate industry growth by:

1.3 Making changes to immigration policy.

1.4 Establishing an Info-Office to aid in the recruitment of out of province technology workers and relocation of technology companies to British Columbia.

1.5 Implementation of a competitive provincial stock option program for British Columbia workers.

1.6 Resolution of cross-boarder security issues with the US.

MARKETING BRITISH COLUMBIA

1.7 Establish a domestic and international campaign to promote British Columbia's quality of life, superior infrastructure, education system, technology community and business-friendly environment.

Appendix C. PTC Members, Staff & Acknowledgements

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