british columbia technology industry association

2006 ADVOCACY INITIATIVES

March 2006

Message from the President

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This document outlines the recommendations and activities the BC Technology Industries Association believes government and industry need to undertake in order to enhance the competitive strength of British Columbia's technology industry, a vibrant and rapidly growing sector with world-class potential.

Despite its small size compared to other jurisdictions around the world, our outstanding technology sector has the capacity to flourish, putting British Columbia on the map as a centre for innovation.

The overall industry is dominated by relatively small companies that form a diverse group of clusters, including:

- Information Technology
- Alternative Energy
- Biotechnology
- New Media
- Wireless
- Sustainability Technologies

The importance of encouraging innovation is reflected in all reporting sectors, where the development of innovative products and services and new production and delivery efficiencies relies consistently on the development and utilization of new technologies.

This document has been generated through the support of a group of high-tech CEOs, representing companies of varying sizes and core technologies, and representatives from two burgeoning technology clusters – wireless and alternative energy – to ensure diverse input and a broader perspective.

The recommendations and actions outlined represent the culmination of many recent studies, most notably, the Integrated Technology Initiative (ITI), a cross-industry initiative that encompassed all of the technology sectors and included nearly 400 participants.

The BCTIA has presented our recommendations to a number of Industry and Government representatives and over the coming months will continue to work with these key stakeholders to further examine the issues and push forward the initiatives we believe will facilitate the growth and prosperity of BC's technology industry as a whole.

Sincerely,

Rob Cruickshank
President - British Columbia Technology Industries Association

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Executive Summary

The technology industry in BC, while relatively small compared to other jurisdictions, offers a strong foundation for future growth and prosperity in the province. British Columbia has many of the seeds of success that, if properly nurtured, will grow into a prosperous and dynamic innovation-based economy. The province's leading technology sectors are characterized by rising employment and concentration, and new supportive government policies and investments are giving BC a leading edge in innovation.

Over the past decade, the innovation-driven industries – life sciences, information and communications technology, wireless, new media, alternative energy, and sustainability technologies – have dramatically outpaced the rest of the province's economy. Total employment in these clusters now exceeds 45,000 technology workers and over 78,000 employees of all job descriptions.

While British Columbia is rich in natural resources, it is also blessed with many factors that can enable the growth of an enviable technology industry. The importance of BC's proximity to the enormous U.S. market, and the large West Coast market in particular, should not be underestimated. In addition, with our large immigrant populations that understand the culture and have market connections, BC has a natural affinity with the rising markets of India and China.

BC is widely recognized as an emerging global player in high technology, with an impressive record for creating new start-ups over the past 10 years. Unfortunately, many of these new start-up companies are acquired by larger players. While acquisition events can create wealth for a company's founders and investors, the company's intellectual property, research and development activities, and the jobs associated with it often leave BC in the months following an acquisition.

As its technology clusters begin to mature, BC's technology reputation is growing. Delivering a comprehensive strategy will positively influence the marketplace as BC's technology community moves beyond entrepreneurship to tackle the challenges of competing in global markets.

Despite the advancements made to date, a number of other North American jurisdictions are outpacing BC. For this reason, it is imperative that industry and all levels of government work collaboratively to address the issues identified as critical barriers to the future advancement and success of BC's technology industry.

The Integrated Technology Initiative (ITI), a recent collaborative study undertaken by the technology community, found that the following critical barriers to success need to be addressed:

- While overall growth in R&D expenditures is strong and suggests a more progressive outlook, on a per-capita basis, funding for academic and industrial R&D is lower than in other North American jurisdictions. Our relative lack of R&D spending limits the development and commercialization of new technologies.

- The level of investment from both public and private sources remains low compared to other jurisdictions with which BC is competing. Because our start-up companies are undercapitalized, in most cases significantly, many are doomed to mediocrity. As a result, many of our innovative companies are acquired by larger firms, and their intellectual property is lost to other jurisdictions. To end this cycle, BC needs to escalate its level of investment from both public and private sources.

- To produce world-class innovations requires the attraction and retention of world-class human capital. BC currently lacks key talent in several areas, particularly graduate-level researchers and senior business talent, which is hurting our ability to compete with other jurisdictions. An initiative focused on attracting and retaining the skilled professionals required to meet the needs of our technology companies is paramount.

As with virtually all business sectors, the technology industry needs the following ingredients to grow, attract, and retain businesses in BC:

An Investment-Friendly Climate

- solid governance that provides the stability of economy necessary to attract long-term investment
- a balanced tax structure between corporate and personal tax rates to attract and retain companies, as well as the individual talent required to ensure their success

Market Access

- strong vibrant ports and efficient transportation systems to reliably convey goods and services between markets
- convenient air transportation between BC and the major U.S. and Asian markets

Strong Infrastructure

- an adequate supply of affordable commercial real estate
- a dependable supply of affordable power and telecommunications
- a strong education system to develop tomorrow's leaders

A Healthy Community

- a solid health care system to look after our employees, families, and friends
- a clean environment in which to live
- safe neighbourhoods

However, in addition to these overarching requirements, to develop a healthy and vibrant technology community will require a number of multifaceted policies and initiatives. To determine an optimal strategy for policy formation, the government must balance several important considerations, including:

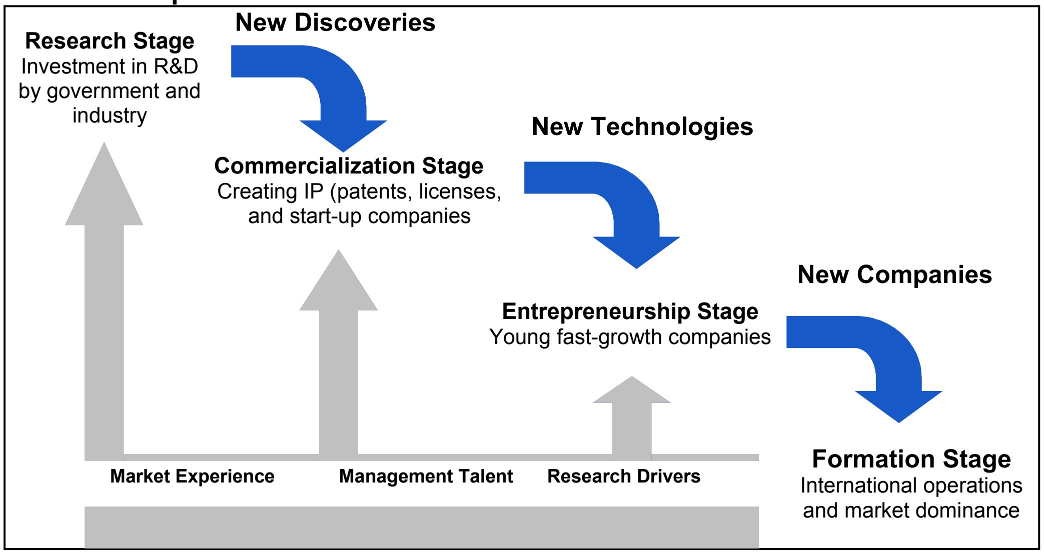
- **The innovation pipeline** – the various unique life stages of technologies and the companies that commercialize them

- **The innovation ecosystem** – the availability of partners and resources within each life stage, including key participants such as academia, venture capitalists, industry anchor companies, the overall labour talent pool, support companies, support associations, and even government itself

The continuous process of producing mature technology companies is often referred to as the innovation pipeline. Depending on the technology and the company involved, this process can take anywhere from a few years from start to finish (in the case of software solutions) to over a decade (in the case of technologies such as fuel cells).

The innovation pipeline consists of 4 closely linked stages of development – research, commercialization, entrepreneurship, and global company formation. These 4 stages form a pipeline that channels the flow of inputs from each stage into the next, having a significant impact on the overall efficiency of technology development.

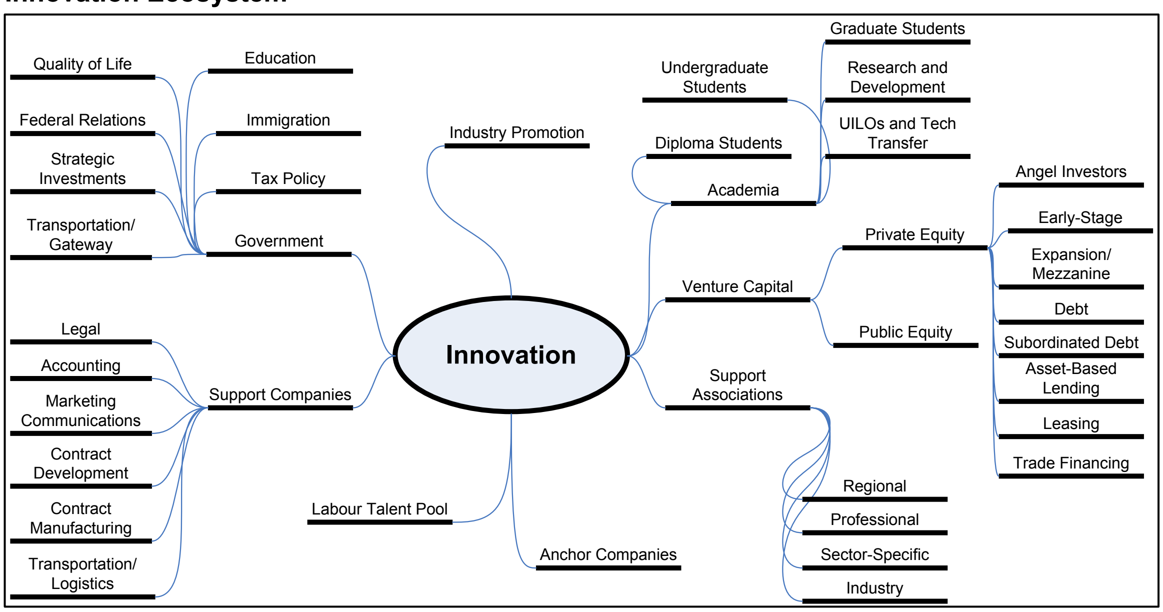
Innovation Pipeline



Without a proper balance of inputs at each stage of the innovation pipeline, the industry will begin to wane over time, or will fail to reach sustainable critical mass.

To be effective and sustainable, the innovation industry also needs to have the proper ecosystem of partners with all resources working collaboratively to ensure the essential synergies necessary to support companies through all stages of the innovation pipeline.

Innovation Ecosystem



With such a large number of players and variables, it is imperative to have a proper game plan for success. For that reason, the BCTIA's ***number one recommendation is that industry and government work together to create a strategy for the technology sector***.

In the recent Throne Speech to Open the Second Session of the 38th Parliament, the government recognized the need for a comprehensive strategy to support the growth of the technology industry in BC and made a high-level commitment to deliver that goal.

We recommend that the government begin creating a strategy for the technology industry immediately and that the recommendations within this report be given due consideration in the development of that strategy.

As with any solid corporate strategy, the BCTIA recommends that the provincial technology strategy have:

1. a clearly articulated vision for the technology industry for the next 5 years, such as:
    a. doubling industry revenue from 2005 levels by 2010 and/or
    b. doubling industry headcount from 2005 levels by 2010
2. a set of objectives to leverage the strengths of the industry that are unique to British Columbia
3. a set of objectives that address a prioritized list of weaknesses, opportunities, and threats
4. a set of strategies that commit time, resources, and money to ensure success

Specifically, the provincial technology strategy needs to be centred on attracting, developing, and retaining outstanding people. More generally, the key elements that should be incorporated into the strategy to create a world-class technology centre in BC are:

- access to capital
- adequate research and development (both private and public)
- efficient technology transfer and commercialization processes
- competitive personal and corporate taxation rates
- adequate industry promotion to attract talented people and investment capital

We recognize that the strategy needs to have considerable buy-in from both industry and government, and must encompass, as a minimum, the 6 major technology clusters: information and communications technology, wireless, new media, life sciences, sustainability technologies, and alternative energy technology while still providing for other new clusters to emerge and grow within the province.

The strategy also needs to address the various stages of the innovation pipeline, as well as the key parties and resources within the innovation ecosystem, particularly the innovation economy triumvirate of academia, industry, and government.

With respect to specific recommendations in this submission, the BCTIA is making a number of recommendations that address the following areas:

Access to Capital

- ***Strategic Investment*** by the government to increase the size of the venture capital industry to meet and ideally exceed the targets set within the 2006 service plan for the Ministry of Economic Development: this strategic $150 million investment in a fund of funds would be used to attract matching funds, particularly foreign venture capital, in a fashion similar to that which has been successful in jurisdictions such as Israel and New Zealand.

- ***Addressing the short-term lending needs*** of companies in transitional periods of their lifecycles when they do not clearly fall into solutions offered by financing providers: such transitional situations include organizations engaged in the development of prototypes and business plans in order to become investment-ready and companies on the cusp of first revenue that require short-term capital infusions for activities that will quickly generate sustaining revenue, such as sales and marketing activities.

Brain Gain, Train, and Retain

- ***People are the most important resource*** for an innovation economy. As such, the BCTIA has made a number of recommendations to help the Province of BC develop, attract, and retain talented individuals whose participation will ensure the energetic growth of the technology sector.

Taxation

- ***Taxation programs should be harmonized*** to ensure that all companies undertaking private research and development within BC are equally rewarded for their efforts, particularly where such activities lead to revenue generation through exports. The BCTIA recognizes that organizations undertaking research and development activities should not be penalized or rewarded based on their ownership structures.

Procurement

- ***The government is a large consumer of technology-oriented goods and services***. As such, the BCTIA recommends that the government use its buying power to assist fledgling technology organizations by encouraging partnerships between smaller organizations and the larger organizations that typically service the government.

Technology Transfer

- **Technology transfer processes at provincial post-secondary institutions need to be streamlined** to improve time to market for commercialized technologies **and promoted** to assist smaller organizations to better engage academia with privately-funded research initiatives.

Infrastructure, Demographics, and Environment

- ***The various sectors of the technology industry, government, and academia need to come together*** to create a natural hub for technology to facilitate cross-pollination of technologies and ideas and to grow new initiatives. Specifically, the BCTIA recommends that the government work with industry to review recommendations such as the BC Hub proposal from Discovery Parks, Genome BC, and Merck Frosst Canada Ltd. to develop joint facilities.

Final Note

The government needs to stay the course of developing and promoting British Columbia as a desirable place to live, work, and invest. A business-friendly environment, coupled with the natural innovativeness and problem-solving capacities of the technology sector, will ensure that the Province of British Columbia always has a strong foundation from which to accelerate the growth and development of the technology industry.

Overview of the Technology Sector in British Columbia

Over the past 10 years, BC's technology industry has established its reputation as a burgeoning sector and significant contributor to BC's economy. This emerging technology sector is characterized by rising employment and a continued concentration of unique clusters.

The chart below provides a snapshot of BC's emerging technology clusters today, summarizing areas of expertise, numbers of companies, employees, and annual revenue. This chart reflects only companies reporting full-time employees and does not include the approximate 13,522 solely owned companies or self-employed contractors that contribute significantly to BC's technology industry. Additionally, it is important to note that many technology companies operate within multiple clusters and therefore run the risk of being included in multiple-cluster-association stats.

Cluster	Sub-clusters	Companies (#)	Employees (#)	Annual Revenue ($M)
Biotech/Life Sciences	• Therapeutics and diagnostics • Pharmaceuticals • Medical devices • Agriculture, marine, & forestry • Environmental	91	2,173	779
Energy Technologies	• Alternative engine fuels • Biofuels, biomass, & waste-to-energy • Earth & geothermal energy • Fuel cell producers/others • Hydroelectric energy • Power electronics & smart energy • Solar, wind, & ocean energy	60	3,000	600
Information & Communications Technology (ICT)	• ICT services • ICT manufacturing • Telecommunications services	6,000	46,000	9,000
New Media	• Games • Animation • E-learning • Web services	700	14,000	1,000
Sustainability Technologies	• Wastewater treatment • Power technologies (including fuel cells and smart energy applications) • Geographic information systems for forestry & mining • Site remediation • Environmental instrumentation • Waste-to-energy	1,300	18,000	1,900
Wireless	• Components, infrastructure, & devices • Data carriers & operators • Enabling software & services • Carrier-class solutions • Enterprise-class solutions • Content & WAP portals • M-commerce	220	5,153	>1,000

Data compiled from Leading Edge BC (2005), Griffiths & Crucil (2003), ICT Sector Regional Report (2004), Wireless in BC (2005), Profile of the BC High Technology Sector (2005)

BC's high-tech industry has dramatically outpaced the overall economy in terms of GDP growth over the past several years. In 2004, high-tech activity accounted for approximately 5.3% of BC's GDP – comparable to the education and construction industries in the province.

Overall growth in R&D expenditures has been strong, although R&D per capita in BC lags most of the jurisdictions with which we compete. This lack of expenditure directly affects our ability to attract companies, investment, and knowledge workers to the province.

Compared to other Canadian jurisdictions, BC does have a reputation for doing very well with the limited resources that it has. For instance, UBC holds an impressive record for leading all other Canadian G-10 universities in terms of gross income from technology licences and in the number of U.S. patents awarded.

The increasing penetration of high technology into all facets of life and business, including many traditional industries such as forestry, mining, and agriculture, will profoundly affect BC's technology industry. To succeed, BC's technology industry must have the infrastructure, resources, and support required to aggressively compete in the global marketplace. To achieve this aggressive competitive position, government and industry must work collaboratively to develop a comprehensive strategy, broaden our level of competitive intelligence, and execute a coordinated and focused marketing plan.

There is no one solution; it is the synthesis of many elements within a multifaceted strategy that will enable BC's technology industry to move beyond emerging entrepreneurship to become a serious competitor in the ever-changing global marketplace.

BCTIA Recommendations

Provincial Strategy for Technology

1.1 The Need for a Provincial Strategy

While the government has made a number of intelligent short-to-medium-term investments in a few of the clusters within the technology sector, these have been made independent of an over-arching strategy for the technology industry as a whole. Without a holistic view of the technology industry and a clear articulation of its direction, it will be difficult to convince people to make the necessary long-term investments in both capital and talent that are necessary to grow the industry.

Further, successes in a couple of clusters will not enable the achievement of the Premier's stated objective of making British Columbia one of the top ten technology centres globally. In the recent Throne Speech to Open the Second Session of the 38th Parliament, the government acknowledged this need for a strategy and has made a high-level commitment to work with technology industry leaders in building this strategy, although details still need to be worked out.

The BCTIA recommends that the government craft a strategy for the technology industry immediately and that the recommendations within this report be given due consideration in the development of that strategy.

As with any solid corporate strategy, the BCTIA recommends that the provincial technology strategy have:

- a clearly articulated vision for the technology industry for the next 5 years, such as:
    - doubling industry revenue from 2005 levels by 2010 and/or
    - doubling industry headcount from 2005 levels by 2010
- a set of objectives to leverage the strengths of the industry that are unique to British Columbia
- a set of objectives that address a prioritized list of weaknesses, opportunities, and threats
- a set of strategies that commit time, resources, and money to ensure success

Specifically, the provincial strategy needs to be centred on attracting, developing, and retaining outstanding people and needs to recognize the key elements that create a world-class technology centre, such as:

- access to capital
- adequate research and development (both private and public)
- efficient technology transfer and commercialization processes
- competitive personal and corporate taxation rates
- adequate industry promotion to attract talented people and investment capital

We recognize that the strategy needs to have considerable buy-in from both industry and government, and needs to encompass, as a minimum, the 6 major technology clusters: information and communications technology, wireless, new media, life sciences, sustainability technologies, and alternative energy technology while still providing for other new clusters to emerge and grow within the province.

The strategy also needs to address the various stages of the innovation pipeline, as well as the key parties and resources within the innovation ecosystem, particularly the innovation economy triumvirate of academia, industry, and government.

We further recommend that this strategy be jointly reviewed on an annual basis to continually provide a 5-year view of where the industry needs to go and how it will get there. The strategy for the technology industry should include a plan for developing consistency in the marketing and branding of BC. The BCTIA recommends that the province build from its common overarching brand.

1.2 The Need to Establish Industry and Government Champions

In order for any joint industry-government strategy for the technology sector to be successfully implemented, champions need to be established on both sides to effectively direct the strategy. Currently, the technology industry interfaces with several government ministries including, but not limited to, the Ministries of Advanced Education, Economic Development, Finance, and Small Business.

Specific Recommendations

- ***For the technology industry*** – the disparate sectors should unite with a single community voice to represent issues common to the industry as a whole and to drive the strategy forward.

- ***For the government*** – a single minister should be responsible for science and technology issues, and that minister should be provided with the budget, mandate, and resources necessary to deliver on the strategy.

While it is unlikely that a single champion will emerge in the short term for either the technology industry or the government, establishing champions should be a priority for both sides while building the provincial strategy.

1.3 The Need for More Anchor Companies

British Columbia has a comparative deficit of large technology companies. As a result, while the industry as a whole is fairly large, it lacks the stability, international visibility, and training ground often provided by larger organizations. Unlike the primary resource industries where BC is home to some of the largest companies in the world, most technology companies in BC are relatively small.

While BC has a history of developing innovative companies, many of these start-ups are acquired once they achieve an evaluation of $20 to $30 million dollars. Many of the recent technology acquisitions have resulted in intellectual property being absorbed into larger organizations and the BC-based workforce being slowly reduced to zero.

If the goal of the technology industry is to double its headcount in the next 5 years, then a key objective of the provincial technology strategy needs to be the attraction of several new anchor companies to BC (likely 4 to 5) within that timeframe.

On the part of the government, this action will likely necessitate tax incentives or other perquisites to attract companies to the province. We recognize that the government is the best party to lead the recruitment of new anchor companies to BC, albeit under guidance and with assistance from industry.

On the part of the technology industry, there needs to be recognition and support of this attraction initiative by technology companies, even though it may mean introducing competitors into the local marketplace.

The key to growth through the attraction of new anchor companies is to identify the right kinds of companies, or the optimal parts of companies, to create meaningful jobs. Significant attributes of target organizations should include:

- undertaking substantial R&D
- being willing to register intellectual property in BC
- having histories of creating spin-off companies
- having reputations as a good corporate citizens

Access to Capital

2.1 The Need for More Seasoned Venture Capital

Another symptom of the relative immaturity of BC's technology market is modest venture capital investments. This detrimental lack of capital investments is most significant during the earliest stage of development and then again at the expansion stage.

Undercapitalized venture funds generally result in undercapitalized investments and difficulty competing globally. Unable to raise the necessary follow-on capital to expand and acquire, many BC companies find their growth hampered and seek to be acquired instead.

While BC is home to some relatively large venture funds and institutional investors, in 2005 only $226 million USD of private equity was invested in the BC sector by the venture community. In comparison, $727 million was invested in Seattle and $1.2 billion in San Diego. Ontario and Quebec also surpassed BC with $674 million and $524 million respectively.

The result is that many start-ups in BC operate with less than $2 million in equity funding, significantly less than is received by similar start-ups in other jurisdictions. Unable to attract top talent or adequately market their products and services globally, many BC firms have difficulty growing, regardless of how innovative their technology is.

The most significant constraint on the growth of BC's technology sector is a lack of funds. Therefore, we recommend that the provincial government make a one-time strategic investment to grow the local venture community.

Specifically, we recommend that the government make a strategic investment through the development of a fund-of-funds approach similar to that which has been successfully used to grow the venture capital markets in both Israel and New Zealand – two economies with similar populations to British Columbia.

We envision a strategic investment of $150 million that would be matched 2 to 1 by industry for a total commitment of $450 million in new investment – approximately doubling the available venture capital market in BC. Similar to the programs in New Zealand and Israel, the industry would have an option of buying out the government's investment with interest calculated based on the government's cost of capital.

We further recommend that the program contain a mechanism that increases the attractiveness of the fund for foreign investors, particularly those from important markets such as Seattle, Silicon Valley, and San Diego. This mechanism would be designed to capture foreign investment while also attracting the capital, expertise, and connections that come with it.

U.S.-based investors, while comparatively larger and able to invest greater amounts, also take a more proactive role in their investments – providing the experience and connections to improve market access as well as capital.

We recommend that while this additional investment would likely be attractive to larger institutional investors, it would not replace the existing incentives that the government is using to build the retail investor market. Rather, we encourage a balance in the market between retail-led and institution-led venture funds, which often have different approaches to investing.

By developing a complementary solution for attracting foreign and institutional investments, the Government of BC can add one more tool to its economic toolkit while building on the success of the retail-based venture community.

2.2 The Need for Earliest-Stage Investment Loans

There exists a perceived gap in the BC market for funding 2 key stages of commercialization:

1. the earliest stages of development activities in which ideas are being taken from concepts to working prototypes or models that can be tested and refined within the marketplace
2. the first-revenue stage in which a company may have its first referential customers but requires a short-term cash infusion for final development or sales and marketing activities

For further growth in the earliest stages of development, during which companies are often taking ideas from concepts to prototypes, we recommend that the government work with industry to create a Small Investment Loan Program. Ideally, this fund would consist of $10 to $15 million in contributed capital and make loan investments of up to $1 million and 5 years in duration.

Brain Gain, Train, and Retain

3.1 The Need to Develop Better Talent

Several studies have indicated that BC has a significant talent shortfall in product sales and marketing. BC's colleges and universities can provide the necessary talent and resources for addressing such technology industry recruiting and retention issues. Furthermore, training enables personnel to adapt to changing employment circumstances.

All technology clusters have significant interaction between local industry and local academia, a successful recipe for regional growth. This interaction consists of academia providing needed education in key industry areas. Additionally, academia can be a source of recruiting talent, particularly at the Master's and PhD levels.

To build better talent in BC, we also recommend that industry and government work together to make more cooperative education positions available for students at post-secondary institutions.

- **For government**, this means working with academia to make more cooperative spaces available at post-secondary institutions.
- **For industry**, it means making more placements available for students and providing them with meaningful work while there.

The BCTIA also recommends:

- increasing scholarships specifically targeted at technology students, including Master's and PhD students, technical specialties, and key non-technical specialties such as general management, marketing, and sales
- providing tax incentives to encourage industry to increase the availability of internship programs
- providing tax incentives to industry with respect to retraining existing employees in technology, which could even be tied to the requirement to replace retraining workers with interns
- adding a technology stream to the sales and marketing program at BCIT

3.2 The Need to Improve Talent Recruitment Strategies

Currently, there is no single Internet site offering critical information about BC to potential recruits.

Tremendous pressure is placed on BC companies to provide information for potential recruits to assist them in making geographic relocation decisions. Although information is available on the Internet, it is difficult to find and interpret. Furthermore, many of the websites contain conflicting information.

To attract talented employees to BC, we recommend that the province create a recruitment portal that includes:

- an overview of the technology clusters and future career opportunities
- job offers and opportunities
- lifestyle information
- “ask an expert” questions and answers

3.3 The Need for More Graduate Programs, Scholarships, and Facilities

While BC is taking measures to expand its undergraduate program capacity, including creating an additional 25,000 post-secondary spaces by 2010, there is still a relative lack of graduate students in the technology sector, particularly the business graduates needed to lead teams and companies.

Graduate students are the future leaders in an innovation economy. They put advanced learning to work, using the knowledge and skills they’ve gained in the classroom to make businesses and industries more innovative and competitive. Arguably, graduate students represent the most significant technology transfer opportunity by translating leading-edge knowledge into practice.

PhDs from BC universities were instrumental in the founding, resourcing, and growth of numerous successful companies in the province, including QLT Inc., MacDonald-Dettwiler, PRA International (formerly CroMedica Global), Creo Products, Tactex Controls, BC Pacific Capital Corporation, Mackenzie Financial Corp., Ventures West Management Inc., Philips, Hager & North, and other multimillion-dollar, globally competitive, knowledge-intensive companies that collectively employ thousands of people in our province.

Graduate-level R&D talent – The BCTIA recommends that graduate program expansion parallel the current expansion of undergraduate capacity. By 2010, the Province of BC should aim to have a minimum of 2,500 additional graduate students enrolled in our universities. Graduate students in research-intensive programs will be the key to enhancing BC’s strengths in emerging sectors such as fuel cell technologies, life sciences, and nanotechnology, and ensuring that innovation continues to keep all sectors of the BC economy performing at peak efficiency.

Graduate-level business talent – The BCTIA wishes to congratulate the government on its commitment to working with industry and academia to build the New Media World Centre to help develop graduate-level knowledge and senior business talent within the new media and digital entertainment industry.

The BCTIA recommends that other sectors work with government to help define and introduce similar programs to develop senior business talent within the technology industry – particularly in sales and marketing.

Taxation

4.1 The Need to Extend the Intellectual Property Tax Credit

There is currently disparity between the taxation of life sciences companies and other companies within the technology sector.

In the 2004 budget, the provincial government extended the International Finance Business Program into the area of international film and television licensing and distribution. Recently, the provincial government further expanded the International Financing Activities Act to create what is now commonly referred to as the intellectual property (IP) tax credit for life sciences.

Effective January 1, 2006, and enabled through Bill 2, Revenue Statutes Amendment Act, 2005, international financing activities under the International Financing Activity Act (IFA Act) were expanded to cover certain patent activities.

The relevant activities are as follows:

- selling, assigning, or licensing to a non-resident a patent within a prescribed class of patents
- selling, assigning, or licensing to a non-resident a good or service whose sale revenue is principally derived from an invention for which, within a prescribed class of patents, is owned by the corporation

The prescribed classes of patents will incorporate certain inventions related to **life sciences** as determined by references to the primary classification of the patent under the International Patent Classification System. The tax refund for patent activities is limited to the lesser of $8 million and 75% of British Columbia corporate income tax paid.

When announcing what is now often referred to as the intellectual property (IP) tax credit for life sciences, the government suggested that the credit was being tested as a pilot with the life sciences sector and if successful at generating business would be extended to other sectors.

We recommend that the government extend the intellectual property (IP) tax credit currently provided to life sciences to cover the entire technology industry. We also recommend that the tax credit extension contain some form of claw back mechanism to repatriate the monies invested in the credit should the organization or IP leave the Province of British Columbia.

By extending the tax credit to all technology sectors, the Province of British Columbia will deliver a clear message of its support for developing intellectual property in BC, regardless of sector, particularly where such intellectual property is driving export revenue.

4.2 The Need to Extend and Harmonize the SR&ED Tax Credit

There are currently 2 key issues involving the Scientific Research and Experimental Development program, which involves both a federal and a provincial component.

1. The provincial SR&ED credit is only viewed as a temporary measure and is due to expire in 2008.
2. The federal SR&ED tax credit creates a disparity between Canadian-controlled and non-Canadian-controlled private companies and public companies with respect to rates and refundability.

The combination of the provincial and federal SR&ED tax credit programs is a very important mechanism for encouraging research and development in new technologies and innovation. It has been identified as an important tool in encouraging the introduction and development of technology companies.

The SR&ED program aims to reduce some of the risks attributed to the development of new technologies or innovations, in addition to serving as an important incentive to attract private research and development efforts. However, the current provincial and federal SR&ED rules are such that the opportunity to stimulate private-sector R&D spending cannot be fully realized.

Specifically, the current rules state that:

- SR&ED credits are provided on a refundable tax credit (or cash) basis for “Canadian-controlled private corporations” (CCPCs) and are not extended to publicly-controlled Canadian corporations.

- For non-Canadian-controlled private or public companies, nonrefundable tax credits are extended and applied as a deduction against income. In the case that a company is not profitable, the nonrefundable credits become useless. Additionally, the tax credit rate is lower for non-Canadian-controlled companies.

These current rules create odd incentives with respect to the location that financing may come from as well as the choice of financing vehicles (private versus public).

With respect to the SR&ED tax credit, the BCTIA believes that the most important aspect of the credit is that it encourages research and development in the province; the ownership structure of the organization undertaking the scientific research and experimental development should be irrelevant.

Therefore, we recommend that the provincial government work with the federal government to extend the SR&ED refundable tax credit to make it available to all companies conducting significant R&D activities in BC and Canada regardless of their control status – public, private, foreign-owned, or other.

We further recommend that the provincial SR&ED tax credit be made a permanent program to signal the government’s continued commitment to attracting private research and development to BC. Investors risking their capital in the development of new ventures need to feel that the general economic climate is business-friendly and will continue to be so in the years to come, particularly as the founding investors seek exits for their investments.

Similar to the IP tax credit, we recommend that the SR&ED tax credit have a claw back mechanism for organizations that withdraw their companies and their intellectual property from the province.

Procurement

5.1 The Need to Encourage BC Content in Government Procurement

Many smaller BC technology companies do not feel that they get a fair opportunity to partake in the business opportunities created through government procurement.

As the vast majority of technology companies in BC are smaller organizations, they often need to partner with larger organizations to generate the experience and references required to kick start other opportunities. One area in which small companies struggle is creating the capacity to bid on government procurement opportunities. Many BC organizations do not have the size, reputation, or where-with-all to do so.

That said, the provincial government is a large consumer of goods and services in its role of serving the people of British Columbia. Similarly, through transfers to regions and municipalities, the government also has a tremendous opportunity to direct investment into products and services.

To ensure that small and medium-sized businesses receive an adequate share of government procurement in the area of technology sales and services, the BCTIA recommends that the **government develop a procurement policy** that provides for the following:

- Where unsolicited proposals are received by the Province of BC, they must comprise a minimum of 10% BC private sector technology company content (in the form of products or services) by dollar volume.
- Where proposals are submitted through a formal RFP process, they must comprise a minimum of 5% BC private sector company content (in the form of products or services) by dollar volume.

In return, industry should encourage partnerships between smaller fledgling companies and more prosperous and stable larger companies that have clearly-defined partner ecosystems.

Technology Transfer

6.1 The Need to Rationalize Technology Transfer Processes

There are 2 consistent issues with respect to research and development and the commercialization of new technologies:

1. For government and academia, there is a desire for private companies to increase their investment in research and development.
2. For industry, there is a desire to have simplified and harmonized processes at the academic institutions in order to expedite the time to market and, to encourage more participation and private investment there needs to be more communication and promotion of the opportunities to engage with academic institutions for cooperative R&D.

The amount of private research and development being funded by industry at academic institutions in BC is low compared to other jurisdictions. The result is that the post-secondary institutions are underutilized and are very reliant on public sources of funding for research and development.

Many industry proponents argue that private research and development is being stifled due to:

- onerous intellectual property requirements at the various post-secondary institutions
- unwieldy procedures for engaging academia in private research initiatives
- disparate policies at each institution being engaged

Therefore, the BCTIA recommends that industry work with government and academia to design a technology transfer process that makes it easier for companies to understand and engage with academia. Ideally, this streamlined technology transfer process would be harmonized across a large number of post-secondary institutions (ideally all) to improve interaction with multiple organizations.

Aside from the engagement synergies afforded by a single streamlined policy and process, it would also make it easier for industry to communicate the benefits of engaging in private research and development efforts to its member companies.

In return for streamlining processes, industry must commit to:

- better utilization of academia for private research and development efforts
- promoting private research and development
- assisting academia with the commercialization of new products that arise from research efforts

Infrastructure, Demographics, and Environment

7.1 The Need for Strategic Infrastructure

At the essence of the following recommendations is a recognition of the need for industry, government and academia to work more closely and cohesively together to put the strategic infrastructure in place necessary to achieve a breakthrough objective such as doubling the size of the technology industry by 2010.

As the intent of this partnership is provincial in nature the infrastructure needs to connect as well as to house.

On a more practical side there is a dearth of affordable commercial space available for technology start-ups, particularly for life sciences companies and other technology companies that require elaborate laboratory space. Concurrently, there is no geographical focal point for the technology industry in the Lower Mainland. Instead, there are small pockets of activity spread across a number of cities.

Experience in other jurisdictions, most notably Silicon Valley, has proven that technology clusters grow and develop better when the people within them interact on daily basis. Cross-pollination of ideas and projects provides synergies and encourages serendipitous innovation. Yaletown in Vancouver was a good example of the type of cross-pollination encouraged by proximity before the escalation of the area's real estate prices put it out of reach for many small companies.

With real estate prices in Vancouver showing no signs of easing and commercial space being continuously converted to condos, the technology industry is likely to separate further as companies disperse in a quest to find more affordable real estate.

In the past, organizations like Discovery Parks Trust, in working with BCIT, UBC and SFU, as well organizations like the University of Victoria with its technology park, have been successful at creating small technology centres across the Lower Mainland, but these facilities are also at capacity.

At the same time the BCTIA, in partnership with Leading Edge BC, has been successful in co-location with several technology-focused organizations, leading to better dialogue and synergies among a number of associations and quasi-government organizations.

Prior to the technology bubble exploding at the turn of the millennium, the City of Vancouver was seriously considering creating a technology park on what is known as the False Creek Flats. This area is home to a few technology companies, as is the Great Northern Way Campus, a joint campus of SFU, UBC, the Emily Carr Institute, and BCIT. The False Creek Flats is located on the existing SkyTrain line, and is relatively close to the new Millennium Line.

The BCTIA recommends that the industry work with academia and government to establish collaborative facilities of industry-industry and industry-academia for co-location and joint research and development.

Such collaborative facilities would provide for cost sharing of services, space, and equipment and provide experience-based learning and training for students. For its part, industry needs to commit to use and promote the joint facilities that are developed.

One solution that has been raised in response to this need for strategic infrastructure supporting R&D is the BC Hub proposal led by Discovery Parks, Genome BC, and Merck Frosst Canada Ltd. The BCTIA recommends that the Government of BC work with industry and the proposal consortium to validate the merits of the BC Hub proposal, particularly as the proposal may play a role in:

- tying together the various technology centres across the province and the Lower Mainland, including the other Discovery Park facilities, and
- acting as a flagship anchor for a revitalization of the False Creek Flats as a new geographic focus for the technology community.

7.2 The Need for a Strong Place to Work and Live

The Province of BC needs to stay the course that it has set for the past 5 years – advancing British Columbia as a great place to live and work. British Columbia has many natural attributes that make it a desirable place to do business and raise families. By providing a stable and predictable economy, the Province of BC will enable growth simply by allowing the people of British Columbia to do their jobs.

By nature, technology companies are innovative and resourceful. Given a stable and vibrant environment that attracts talent, people, and investment, particularly one with the natural geographic strengths of British Columbia, a technology community will always provide a solid base of economic activity.

Over the past 5 years, the Government of BC has made considerable strides to improve the business climate of BC and make it a better place to work and live. These benefits are not unique to the technology community, but are important to all sectors of the economy. We applaud the government of BC for its efforts to date, and support its drive to continue.

Like all sectors, the technology industry needs the following ingredients to grow, attract, and retain businesses in BC:

- an investment-friendly climate
- efficient market access
- strong infrastructure
- a healthy community

One of the most important things that the provincial government can do is to continue its focus on making BC a desirable place to live and work. Failing all else, the natural attractiveness of the province, coupled with the innovativeness of our technology professionals, will ensure that BC has a strong platform on which to work to accelerate the growth and development of the technology industry.

That said, the government must not rest on its laurels and destine BC’s technology industry to mediocrity when it has world-class potential.

Appendices

Appendix 1: Fast Facts: BC Technology Sector

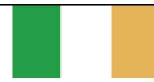
- British Columbia is the most connected province in Canada, with 6 out of every 10 households having Internet access.
- R&D incentives and many other available tax incentives offer businesses the chance to realize substantial savings.
- The BC population is the most educated in Canada.
- On average, BC has been the leader in small business growth in Canada for the last 10 years.
- *The Economist* ranked Vancouver #1 in its 2004 global liveability survey of 130 cities worldwide.
- BC is home to one-third of Canada's fastest-growing technology companies.
- Employment in BC's high-technology industry has increased by almost two-thirds since 1991.
- Since 1995, BC's high-technology sector has expanded at 3 times the pace of the overall economy.
- BC has a business-friendly government, which cut personal income taxes by 25% and offers a competitive tax rate of 13.5%.
- In 2004, there were 21,810 technology companies in BC (8,288 + 13,522).
    - 8,288 reporting FTEs and 13,522 independent/self-employed
    - tech workers = 64,600 plus 13,522 self-employed = a total workforce of 78,122
- Over 90 languages are spoken in Vancouver, making it one of the world's most diverse cities.
- 65% of BC's exports go to the U.S., with China being the second-largest recipient.
- 87% of BC's technology companies have fewer than 5 employees.

Factors that make BC a great place to locate technology companies:

- sophisticated telecommunications that rank among the world's best
- the Port of Vancouver, which is Canada's busiest trade intersection, facilitating trade with over 90 nations worldwide
- proximity to the Asia/Pacific region
- The Vancouver International Airport, from which domestic and international airlines serve a large continental and global network of routes, a 30-minute drive from downtown Vancouver and from the Canada/U.S. border
- well-established and regulated banking, investment, and securities institutions that have extensive international capability
- internationally recognized legal and accounting firms
- excellent medical care
- highly respected educational institutions

Appendix 2: Comparison of British Columbia with Similar Jurisdictions

British Columbia as compared to emerging federal high-technology jurisdictions

	 Province of British Columbia	 State of Israel	 Republic of Ireland	 New Zealand
Population	4.3 million	6.3 million	4.0 million	4.0 million
Land Mass	767,800 sq km	20,770 sq km	70,280 sq km	268,680 sq km
Labour Force	2.3 million	2.4 million	2.0 million	2.1 million
Internet Users	2.5 million	2.0 million (2002)	1.3 million (2003)	2.1 million (2003)
Median Age	38.4	30.327	33.7	33.7
GDP ($US)	$138.3 billion	$123.7 billion	194.2 billion	100.0 billion
Venture Capital	$226 million invested in 2005	$1.34 billion raised in 2005	$1.25 billion Euro under management	$158 million invested in 2004

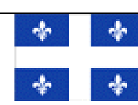
Source: Leading Edge BC, CIA World Fact Book, Public Works and Government Services Canada

British Columbia as compared to other West Coast jurisdictions

	 Province of British Columbia	 Washington State	 Oregon	 California (San Diego MSA)
Population	4.3 million	6.2 million	3.5 million	2.9 million
Land Mass	767,800 sq km	184,824 sq km	251,571 sq km	10,878 sq km
Labour Force	2.3 million	3.2 million	1.8 million	1.5 million
Internet Users	2.5 million	4.5 million	2.6 million	1.9 million
Median Age	38.4	36.5	36.3	33.2
GDP ($US)	$138.3 billion	$238 billion (2004)	$121 billion	$100 billion
Venture Capital	$226 196 million invested in 2005	$640M	$150M	$1.3 billion invested in 2005

Source: Leading Edge BC, CIA World Fact Book, Public Works and Government Services Canada, US Census Bureau, San Diego, Office of Financial Mgmt (State of Washington)

British Columbia as compared to other Provinces

	 Province of British Columbia	 Alberta	 Ontario	 Quebec
Population	4.3 million	3.3 million	12.6 million	7.6 million
Land Mass	767,800 sq km	642,317 sq km	917,741 sq km	1,183,128 sq km
Labour Force	2.3 million	1.8 million	6,8 million	4.0 million
Internet Users	2.5 million	2.0 million	6.9 million	3.6 million
Median Age	38.4	35.0	37.2	38.8
GDP ($US)	$138.3 billion	$147.0 billion	$428.4 billion	$221.9 billion
Venture Capital ($ CDN)l	$196226 million invested in 2005	$64M	$751M	$710M

Source: Leading Edge BC, CIA World Fact Book, Public Works, Wikopedia, & Government Services Canada