

# MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

## BRIEFING NOTE

Ref: 98319

Date: August 26, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister  
**FOR INFORMATION**

**TOPIC:** BC Broadband Association

II **ISSUE:**

Mr. Chris Allen, President of A.B.C. Allen Business Communications, Ltd. (ABC Communications) and a Director of the BC Broadband Association, will meet with the Minister on Thursday August 29, 2013. He will be accompanied by Mr. Bob Allen, founder and CEO of ABC Communications and President of the BC Broadband Association. Biographies are appended as ATT-1.

III **BACKGROUND:**

ABC Communications is one of the largest independent Internet service providers in British Columbia. It offers wireless and terrestrial Internet access, web hosting and design, business telephone systems and retail cellular telephone sales throughout a large area of B.C. from Prince George to Kelowna. The company was founded in 1989 by Mr. Bob Allen. Headquartered in Quesnel, it has over 5,000 subscribers, annual revenues of over \$6M, and employs up to 60 staff.

The company is also a provider of telecommunications services to the Province, particularly in rural areas of B.C. In fiscal year 2012/13, the scale of its business with the Province was approximately \$530,000.

ABC Communications is one of the founding organizations of the British Columbia Broadband Association. The British Columbia Broadband Association is an industry group representing the interests of over 30 B.C. telecommunications service providers, equipment suppliers and infrastructure constructors. A list of member companies is appended as ATT-2.

IV **DISCUSSION:**

**Connecting Citizens Grant Program.** ABC Communications received funding of approximately \$1,358,000 for 29 projects under the Connecting Citizens Grant Program. The Connecting British Columbia Grant Program provided telecommunications infrastructure grants of up to \$50,000 per project through a competitive process. ABC Communications has substantially completed all of their connectivity projects. The list of projects is appended as ATT-3.

Mr. Allen may express his appreciation and acknowledge the important role of the Province's investments in programs that assist companies such as his to expand their coverage areas. The difficulty and expense in gaining Provincial approval to access Crown land for the purpose of installing infrastructure may also be raised.

**Connecting British Columbia Agreement.** ABC Communications was awarded access to 18 of the 119 high-speed Internet gateways installed under the Province's previous agreement with

TELUS. A map indicating these gateways is appended as ATT-4. Mr. Allen may emphasize the role of his company as a partner with the Province in bridging the digital divide in rural B.C. and the importance of the affordable wholesale pricing and other advantages provided by the Connecting British Columbia Agreement in making this possible.

**BC Broadband Association Conference.** The British Columbia Broadband Association holds an annual conference of industry representatives and Mr. Allen has invited the Minister to be the keynote speaker at the projected April 8-9, 2014 event. Past Ministers Margaret MacDiarmid and Ben Stewart accepted previous invitations to address industry leaders.

**Telecommunications Service Provider.** Mr. Allen may be expected to emphasize the important role of ABC Communications as a provider of telecommunications services to the Province, especially in rural and remote areas. He may note that the business case presented by rural communities is strengthened and stabilized by his and other small and medium sized companies continuing to have the ability to compete for government's business in these areas.

V **CONCLUSION:**

**Suggested Response:**

- The Province remains committed to its vision of every citizen in British Columbia having access to high-speed Internet service.
- Local Internet service providers such as ABC Communications and its British Columbia Broadband Association counterparts play a key role delivering services to homes and businesses in rural B.C. The Province will continue developing strategies to support their efforts, and industry suggestions are welcome. The Ministry is working to find ways of reducing the administrative burden of Crown land access.
- Companies such as ABC Communications will continue to play an important role in meeting the Province's telecommunications needs.
- Mr. Allen may be commended for his leadership in working to establish the BCBA as the voice of the independent telecommunications industry.

Attachments – ATT-1 Biographies  
ATT-2 BC Broadband Association Members  
ATT-3 Connecting BC Agreement Internet Gateways – ABC Communications  
ATT-4 Connecting Citizens Grant Program: ABC Communications

**PREPARED BY:**

James McGrath  
Senior Policy Analyst  
Network BC  
250 920 9590

**REVIEWED BY:**

Chris Hauff  
Director  
Network BC

*Reviewed by*  
**CH**

---

Howard Randall, acting for  
Wilf Bangert  
Executive Lead responsible for Network BC  
Administrators Office

*Reviewed by*  
**HR**

---

CJ Ritchie  
Assistant Deputy Minister  
Strategic Partnerships Office

*Reviewed by*  
**CJR**

---

Bette-Jo Hughes  
Associate Deputy Minister and Government  
Chief Information Officer

*Reviewed*  
*by CJR for*  
**BJH**

---

John Jacobson  
Deputy Minister

*Reviewed*  
*by JJ*

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**British Columbia Broadband Association Members**

	<b>Company Name</b>
1	a2b Fiber Inc.
2	ABC Communications
3	Advance Interactive Inc.
4	Alliance Business Solutions Inc.
5	Antic Wireless
6	BCNET
7	BC Wireless Ltd.
8	Blueberry Ventures
9	Broadband Surfer Canada Inc.
10	Central Coast Communications Society
11	China Creek Internet Services Ltd.
12	Columbia Basin Trust
13	Fonex Data Systems Inc.
14	Go4objectives Ltd.
15	GwaiiTel
16	Highway 16 Internet
17	ispeed Communications
18	Kaslo Infonet Society
19	KP Performance Antennas
20	Lytton Area Wireless Society
21	Max Internet
22	MBSI Canada Ltd.
23	MyBCDATA.COM
24	Navigata Communications
25	Open Source Solutions
26	Peace Region Internet Society
27	Perfect World Innovation Inc.
28	QNet
29	Seaview Communications Ltd.
30	TeksavvySolutions Inc.
31	Tranzeo Wireless Technologies
32	Trispec Communications Inc.
33	Twin Island Communications



**Connecting Citizens Grant Program: ABC Communications**

	<b>Round</b>	<b>Locale(s)</b>	<b>Grant</b>	<b>Status</b>
1	Round 1 (2008/09)	Endako, Savory, Coray Subdivision	\$26,344.86	Complete
2	Round 1 (2008/09)	Beaverdell	\$49,235.00	Complete
3	Round 1 (2008/09)	East Francois Lake Rd, Uncha Lake Rd	\$50,000.00	Complete
4	Round 1 (2008/09)	Danskin	\$49,604.07	Complete
5	Round 1 (2008/09)	Grassy Plains, East Ootsa Lake, Cheslatta First Nation	\$27,455.57	Complete
6	Round 1 (2008/09)	Chief Lake & Nukko Lake	\$50,000.00	Complete
7	Round 1 (2008/09)	Kettle Valley	\$50,000.00	Complete
8	Round 1 (2008/09)	Mcleese Lake	\$50,000.00	Complete
9	Round 1 (2008/09)	Nazko	\$50,000.00	Complete
10	Round 1 (2008/09)	Ness Lake	\$50,000.00	Complete
11	Round 1 (2008/09)	Sugarcane	\$50,000.00	Complete
12	Round 1 (2008/09)	Nadsilnich (West) Lake	\$50,000.00	Complete
13	Round 1 (2008/09)	Willow River	\$49,850.00	Complete
14	Round 2 (2009/10)	Canim Lake	\$50,000.00	Complete
15	Round 2 (2009/10)	Hwy 24 NE	\$50,000.00	Complete
16	Round 2 (2009/10)	Gateway	\$50,000.00	In Progress
17	Round 2 (2009/10)	Helena-Timothy	\$50,000.00	In Progress
18	Round 2 (2009/10)	Horsefly Lake	\$50,000.00	Complete
19	Round 2 (2009/10)	Palling	\$30,514.00	Complete
20	Round 2 (2009/10)	Wilson Landing	\$48,580.00	Complete
21	Round 2 (2009/10)	Faulder	\$46,955.00	Complete
22	Round 2 (2009/10)	Gantahaz Subdivision	\$49,606.00	Complete
23	Round 2 (2009/10)	Shelley	\$50,000.00	Complete
24	Round 2 (2009/10)	Shelley-Glen	\$47,042.00	In Progress
25	Round 3 (2010/11)	Black Pines	\$50,000.00	In Progress
26	Round 3 (2010/11)	McLure	\$43,100.00	In Progress
27	Round 3 (2010/11)	Sidley	\$50,000.00	In Progress
28	Round 3 (2010/11)	Westbridge	\$50,000.00	In Progress
29	Round 3 (2010/11)	Ruth Lake	\$50,000.00	In Progress
		<b>TOTAL</b>	<b>\$1,368,286.50</b>	

CONNECTING B.C. AGREEMENT INTERNET GATEWAYS  
ABC COMMUNICATIONS

	Community	Status
1	70 Mile House	Broadband within Community
2	Bear Lake	Broadband within Community
3	Beaverdell	Broadband within Community
4	Bridge Lake	Broadband within Community
5	Clinton	Broadband within Community
6	Danskin	Broadband within Community
7	Forest Grove	Broadband within Community
8	Fort Fraser	Broadband within Community
9	Francois Lake	Broadband within Community
10	Grassy Plains	Broadband within Community
11	Hixon	Broadband within Community
12	Horsefly	Broadband within Community
13	Kettle Valley	Broadband within Community
14	Lac La Hache	Broadband within Community
15	Little Fort	In Progress
16	McLeese Lake	Broadband within Community
17	Nazko	Broadband within Community
18	Wells	Broadband within Community

**Connecting Citizens Grant Program: ABC Communications**

	<b>Round</b>	<b>Locale(s)</b>	<b>Grant</b>	<b>Status</b>
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<b>TOTAL</b>			<b>\$1,368,286.50</b>	

# MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

## BRIEFING NOTE

Ref: 98340

Date: June 19, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister  
**FOR INFORMATION**

**TOPIC:** Venture Capital in British Columbia

II **ISSUE:**

The Small Business Venture Capital Tax Credit and the Renaissance Fund

III **BACKGROUND:**

Venture capital activity in British Columbia saw \$222 million invested in 2012 (compared to \$228 million 2011), giving the province a steady 15 percent of disbursements across Canada, behind Ontario and Quebec.

The provincial Venture Capital Programs (VCP's) encourage investments in British Columbia businesses by providing British Columbia investors with tax credits (see Attachment A). The VCP was first established in 1985 under the Small Business Venture Capital Act and is administered by the Ministry of International Trade, recognizing the primary role of small business in diversifying the economy and in creating new jobs.

The Venture Capital Programs are legislated through two Acts, which have the capacity to invest up to \$168 million in investment capital annually to support continuous access to early stage venture capital for small business:

1. Employee Investment Act (EIA)
2. Small Business Venture Capital Act (SBVCA)

The small business venture capital tax credit (SBVC-TC) is for corporations that invest in shares of a registered venture capital corporation or eligible business corporation. The SBVC-TC encourages investors to make equity capital investments in British Columbia small businesses, in order to give small businesses access to early-stage venture capital to help them develop and grow.

The Small Business Venture Capital program's \$33 million budget enables equity investment up to \$110 million yearly.

For the 2012 tax budget year, between March 1, 2012 and March 1, 2013, British Columbia's investors invested over \$96 million in British Columbia's small businesses.

Additionally, over \$9.9 million was invested in the 2012 tax budget year in the Province's new Business Creation budget, which was created in the BC Jobs Plan for businesses younger than two years old.

At the core of the program is a 30 percent tax credit for investors who reside in British Columbia. The program has evolved significantly and consists of three distinct programs:

1. Labour sponsored Venture Capital Corporations (called EVCCs)
2. Venture Capital Corporations (VCCs)
3. Eligible Business Corporations (EBCs)

The VCC's and EVCC's are registered holding companies that raise investment capital from British Columbia residents and then invest these funds in qualifying businesses, which are referred to as "eligible small businesses". Hence, tax-credit eligible investments from investors flow through VCC's and EVCC's to eligible small businesses.

At present there is only a single EVCC fund in British Columbia, called the Working Opportunity Fund (WOF). The most important difference between WOF and the retail VCCs is that the 30 percent tax credit of WOF is shared equally between the federal and provincial governments, whereas the provincial government pays the entire 30 percent tax credit for the VCC's.

#### **B.C. Renaissance Capital Fund Ltd. (BCRFC)**

The BCRFC is a Crown corporation, owned by the BC Immigrant Investment Fund, which in turn is owned by the government of British Columbia. The Renaissance Fund attracts successful venture capital managers and their capital to British Columbia to develop promising, innovative technology companies in the province. The fund was created to pursue investment in four key technology sectors: digital media, information technology, life sciences and clean technology (the same as the BC Technology Strategy). To date, the Renaissance Fund has committed capital to eight venture capital fund managers based in the United States and Canada that have over \$2.5 billion in capital under management for investment.

#### **IV DISCUSSION:**

Two specific initiatives are outlined in the Minister's Mandate letter for the Ministry of Technology, Innovation and Citizen's Services:

1. Work with the BCTIA to encourage the federal government to adopt the provincial Small Business Venture Tax Credit program.
2. Expand the value of the Small Business Venture Tax Credit Program by an additional \$5M in 2015/16.

The SBVC-TC program is administered from the Venture Capital Branch, at the Ministry of International Trade which also provides oversight for the BC Renaissance Fund. Additionally, any adjustments to British Columbia tax policy would need to be in collaboration with the Fiscal Planning and Tax Policy Branch, Ministry of Finance.

#### **V NEXT STEPS**

In order to successfully deliver on these two mandates, two questions will need to be resolved:

1. The reporting structure for these initiatives between two different ministries.
2. The source of funds for the additional \$5M for the Small Business Venture Tax Credit Program. As a multi-year increase starting 2015/16, will these be new funds or a reallocation, either internal or external to the Ministry?

Attachment A – Investment Capital Programs Brochure  
Attachment B – Evaluation of the Venture Capital Programs in British Columbia (2010)

**PREPARED BY:**

Naomi Pope  
Director, Technology & Innovation Branch  
250 387-6157

**REVIEWED BY:**

Kevin Butterworth  
Executive Director  
Technology and Innovation

*Reviewed  
by KB*

---

John Jacobson  
Deputy Minister  
Ministry of Technology, Innovation  
and Citizens' Services

*Reviewed  
by JJ*

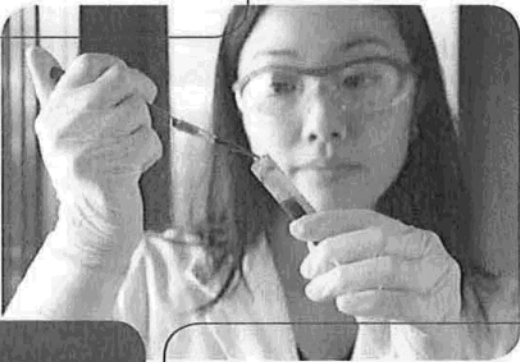
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# Investment Capital Program Guidelines

Creating Business Investment, Innovation and Opportunity

*Accelerate your access to capital*



BRITISH  
COLUMBIA

Canada's Pacific Gateway



Today's small businesses are dynamic innovators that will shape British Columbia's economy for years to come. New businesses and innovations are an important component of our economic future; they create jobs, diversify economic activity and allow British Columbia to compete in the global marketplace.

There are many challenges to owning a business. Among them, access to capital. The ability to raise capital can determine whether or not a good idea gets off the ground.

### **Why Venture Capital?**

Many business start-ups have little or no cash flow to service debt payments or assets to offer as security. They may turn to venture capital investors who provide patient sources of equity financing with the goal of generating long-term capital appreciation. Growing businesses may also seek venture capital investors to fund new product development, capital projects or financing to keep pace with a rapidly expanding client bases and emerging new markets.

Existing businesses looking to compete in today's global market place are also seeking innovative ways to improve productivity and turn new products and services into commercial success.

An adequate supply of capital is a critical factor in the success of all companies. From business start-up through development, expansion and succession, venture capital investments can support the success of your company.

In addition to supplying a company with money, many angel investors and venture capitalists can provide guidance and mentorship opportunities – many offer extensive industry knowledge and personal experience in building new companies.



# Investment Capital Branch Programs

The Province of British Columbia offers four key programs to help small businesses in British Columbia access capital for business start-up and expansion.

The Investment Capital Programs offered by the Investment Capital Branch, offer tax credits to investors making equity capital investments directly in British Columbia based small businesses or indirectly through specialized venture capital investment funds.

Tax credits offered under the *Small Business Venture Capital Act* (SBVCA) and the *Employee Investment Act* (EIA) have the capacity to support up to \$168 million of investment capital annually and are designed to support continuous access to early-stage venture capital for small businesses.

## Direct Investment

The direct investment model is suited for small businesses raising capital directly from arms-length investors. Investors residing in British Columbia earn tax credits for purchasing shares in an Eligible Business Corporation or Employee Share Ownership Plan.

## Portfolio Investing

Venture Capital Corporations and Employee Venture Capital Corporations are holding companies that raise investment capital from British Columbia residents and then invest these funds into one or more eligible businesses. This investment structure is ideal for investors who want to pool their capital with others and rely on professional management to select a diverse portfolio of investment opportunities.

Have a closer look at our programs and see where you fit in as an investor, small business owner, or employee. The right funding, at the right time, can make all the difference in achieving success in today's economy.



# Direct Investment:

## Eligible Business Corporation (SBVCA)



Existing or new small businesses may register as an Eligible Business Corporation ('EBC') to raise equity capital directly from arms-length eligible investors. Investments in an EBC are made without guarantee of return and must be held for at least 5 years. Please note, EBCs also qualify to receive investment from Venture Capital Corporations and Employee Venture Capital Corporations.

Individuals who purchase shares of an EBC are eligible to receive a refundable tax credit equal to 30% of their investment amount, up to a maximum of \$60,000 in credits per taxation year. Corporations may only deduct the tax credit from British Columbia taxes otherwise payable under the Income Tax Act (British Columbia). There is no annual limit on the tax credit for corporations; however, the credits are not refundable.

Excess tax credits, either corporate or personal, may be carried forward and used in any of the four subsequent taxation years. □

### Eligible investors:

- Investors are BC residents or taxable corporations.
- Shares may not be redeemed, acquired or cancelled for at least 5 years.

### The EBC must:

- Have no more than 100 employees.
- Pay at least 75 percent of its wages to BC residents (50 percent if in export).
- Have equity of at least \$25,000
- Be substantially engaged in a prescribed activity.

### The EBC shares:

- Common or preferred shares.
- Investor is arms-length and does not, directly or indirectly, control the EBC.
- Maximum \$5 Million of direct investment.



# Direct Investment:

## Employee Share Ownership Plan (EIA)

The Employee Share Ownership Program (ESOP) provides employees with a 20% tax credit for making investments in their employers' business. British Columbia residents can claim up to \$2000 in ESOP tax credits annually; these credits are not refundable. An employee's investment in their employers' company is made without guarantee of return and must be maintained for at least 3 years.

Entrepreneurs can use an ESOP as a tool for retirement succession planning, employee recruitment and retention, increasing employee engagement and financing growth. □

### Eligible Employees:

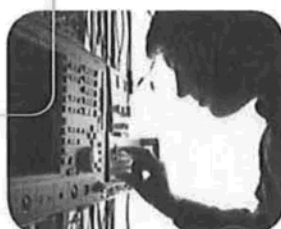
- Are BC Residents
- Work 20 or more hours per week
- Shares may not be redeemed, acquired or cancelled for at least 3 years

### The ESOP must:

- Be a Canadian company that pays at least 25% of its wages to BC residents
- Have, together with its affiliates, less than \$500 million in total assets

### The ESOP Shares:

- Fully participating, voting and at risk
- Equal opportunity for all employees to acquire
- Annual share valuation



# Portfolio Investing:

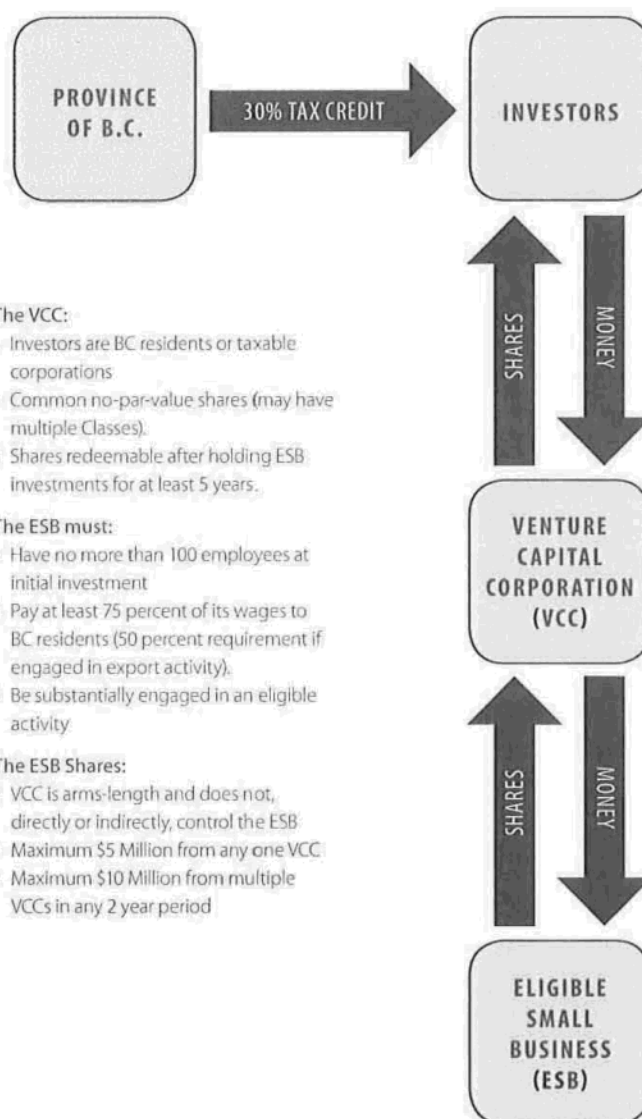
## Venture Capital Corporation (SBVCA)

A Venture Capital Corporation (VCC), which is similar to a holding company, raises capital through private or public share offerings, to invest in Eligible Small Businesses (ESB). Shares of a VCC must be held for at least 5 years, but may provide the investor with an opportunity for dividend income and long-term capital appreciation.

Individuals who purchase shares of a VCC are eligible to receive a refundable tax credit equal to 30% of their investment amount, up to a

maximum of \$60,000 in credits per taxation year. Corporations may only deduct the tax credit from British Columbia taxes otherwise payable under the Income Tax Act (British Columbia). There is no annual limit on the tax credit for corporations; however, the credits are not refundable.

Excess tax credits, either corporate or personal, may be carried forward and used in any of the four subsequent taxation years. □

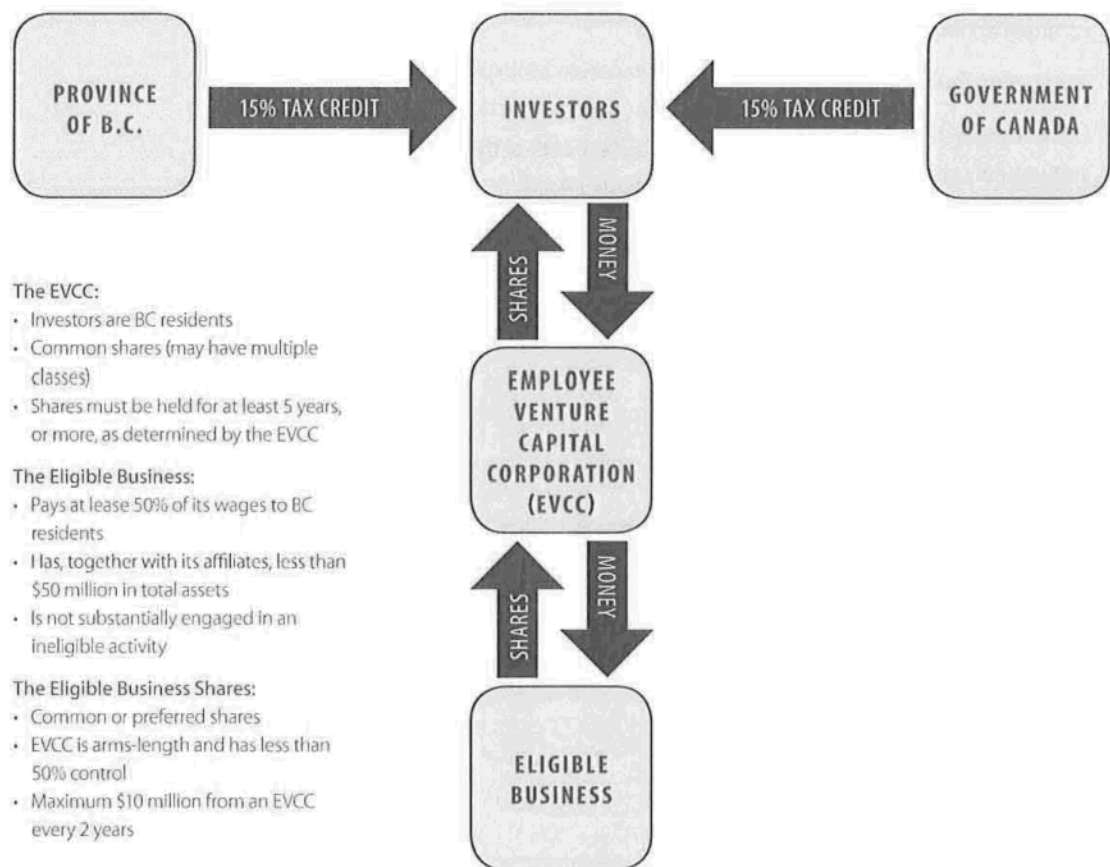


# Portfolio Investing:

## Employee Venture Capital Corporation (EIA)

An Employee Venture Capital Corporation (EVCC) must be sponsored by an employee organization – EVCCs are also known as Labour-Sponsored Funds. EVCCs raise capital through share offerings, and invest in eligible businesses.

Investors receive a 15 percent provincial tax credit, to a maximum of \$2,000 per year, and an additional federal tax credit of 15 percent, to a maximum of \$750 per year. Investments are not capable of prompt liquidation, but may provide an opportunity for dividend income and long-term capital appreciation. □



## How To Get Started

If, after reading these guidelines, you wish to learn more or would like to register your business for one of our programs, you should visit our website at [www.equitycapital.gov.bc.ca](http://www.equitycapital.gov.bc.ca).

Our website contains important information, including:

- ▶ Additional information about the programs and how they can work for your company
- ▶ Frequently asked questions and links where you can learn more about venture capital
- ▶ Application forms
- ▶ Current status of tax credit budgets and regular updates related to the programs

## For investors

In most cases, investments under these programs may be eligible for inclusion in a self-directed RRSP which can result in further tax benefits. You should contact your RRSP provider for more information on purchasing shares through your RRSP.

For all of our programs, tax credit incentives are realized through the issuance of tax credit certificates. Tax credit certificates are attached to your annual income tax return to be filed with the Canada Revenue Agency for processing.

Companies issuing shares under these programs must comply with the requirements of the *British Columbia Securities Act*.

For further information, visit the BC Securities Commission website.

All investors and registrants should consult with their own personal advisors to ensure legal, tax and accounting requirements are met with respect to the purchase and sale of their shares. □



### Investment Capital Branch

PO Box 9800, Stn Prov Govt  
7th Floor, 1810 Blanshard Street  
Victoria, British Columbia V8W 9W1

Telephone: 250 952 0136

Toll Free: 800 665 6597

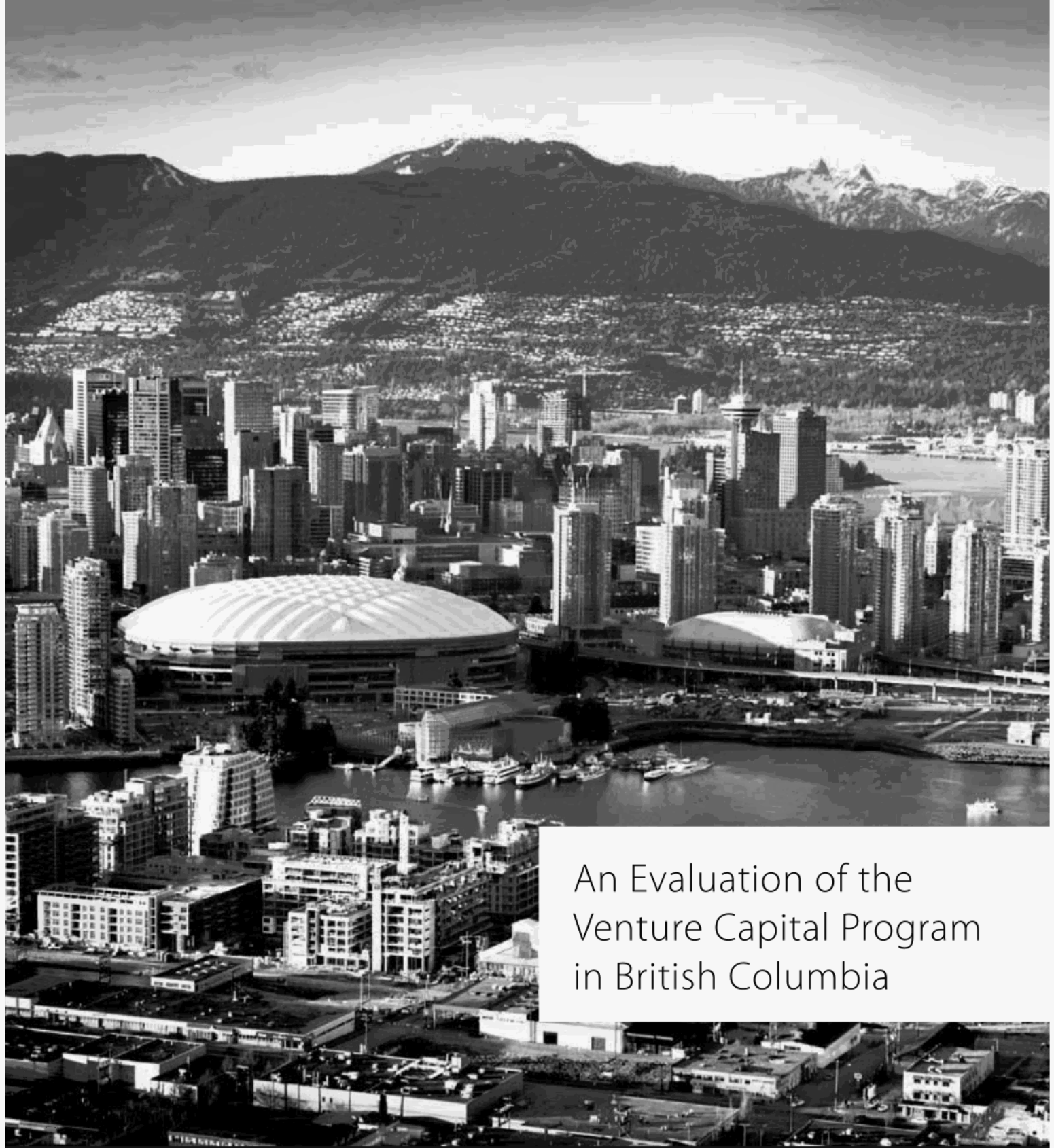
Facsimile: 250 952 0371

E-mail: [ecp@tbc.gov.bc.ca](mailto:ecp@tbc.gov.bc.ca)

[www.equitycapital.gov.bc.ca](http://www.equitycapital.gov.bc.ca)

The Province of British Columbia in no way guarantees the value of any shares issued by a company registered under these programs, nor does it in any way express an opinion as to the financial condition of these companies or the merits of purchasing their shares.

Please also note that the ministry does not provide investment-matching services as part of program delivery. Participants are responsible for finding and attracting investors under all programs.



## An Evaluation of the Venture Capital Program in British Columbia

**Report prepared for the  
Ministry of Small Business,  
Technology and Economic  
Development**

June 2010

**Thomas Hellmann**

Sauder School of Business - University  
of British Columbia

**Paul Schure**

Department of Economics - University  
of Victoria

---

**Professor Thomas Hellmann**

B.I. Ghert Family Foundation Professor  
in Finance and Policy

Sauder School of Business -  
University of British Columbia  
2053 Main Mall  
Vancouver, BC Canada V6T 1Z2

t: 1-604-822-8476  
f: 1-604-822-8477  
e: hellmann@sauder.ubc.ca

**Professor Paul Schure**

Department of Economics University  
of Victoria  
PO Box 1700, STN CSC  
Victoria, BC Canada V8W 2Y2

t: 1-250-721-8535  
f: 1-250-721-6214  
e: schure@uvic.ca

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## Executive Summary

The objective of this study is to evaluate the economic impact of the venture capital program (VCP) in the province of British Columbia. The study focuses on the economic and financial performance of the companies in the program, including a comparison of the tax credits received versus the taxes paid by these companies.

The VCP provides a 30% tax credit to investors making eligible investments. Formally it includes three distinct programs, one for Labour-sponsored Venture Capital Corporations, also called Employee Venture Capital Corporations (EVCCs), one for Venture Capital Corporations (VCCs) and one for Eligible Business Corporations (EBCs).

Over the period 2001-2008, investments made in 517 companies received a total of \$191M provincial and \$65M federal tax credits. These companies generated an estimated \$379M in provincial and \$368M in federal taxes. The estimates suggest that for every \$1 of provincial tax credits issued, recipient companies generated \$1.98 in provincial taxes; and for every \$1 of Canadian (i.e., combined provincial and federal) tax credits issued, they generated \$2.92 in Canadian taxes. In short, the BC tax multiplier was 1.98 and the Canadian tax multiplier was 2.92.

The analysis distinguishes between retail funds (professional venture capitalist who invest and manage capital on behalf of qualified investors through prospectus offerings) and nonretail investors who essentially invest their own capital directly (nonretail investors are sometimes referred to as “angel investors”). Retail investors invest through either the EVCC or VCC programs, and nonretail investors through either the VCC or EBC programs. The study finds that retail investors claimed approximately 55% of the BC and 66% of the Canadian tax credits. The Canadian tax multiplier was very similar for the retail and nonretail portions of the program. However, the BC tax multiplier was lower for the nonretail portion: every \$1 of BC tax credits generated \$2.45 of BC taxes in the retail segment, and \$1.41 in the nonretail segment. The difference arises from the fact that the federal government carries some of the costs for the retail segment (namely half of the EVCC tax credits), but does not carry any of the tax credit costs for the nonretail segment.

The tax estimates focus on sales taxes (PST & GST), income taxes and corporate taxes, both at the provincial and federal level. The two largest items were PST, which accounted for 35% of all tax revenues, and federal income taxes paid by employees, which account for 31%. Combined provincial and federal corporate taxes accounted for less than 3%.

Companies in the program generated an average of 2.43 new jobs every year. This compares favorably with a broad control sample of BC companies that generated almost no new jobs at all during the sample period. Net job creation remained positive even in the recession years of 2002 and 2008. The vast majority of new jobs were full-time positions.

For the average company, revenues grew by \$572K, based on average revenues of \$2.27M. Revenue growth remained positive every year after 2002. Companies financed by retail funds had significantly larger revenues (\$5.18M, increasing by \$1.18M per year) than nonretail investors (\$703K, increasing by \$235K), reflecting the fact that retail funds focus more on later stage growth companies that are more mature, while nonretail investors focus more on early stage start-ups, some of which become large established corporations.

In aggregate, we estimate that tax credits of \$256M were leveraged into at least \$2.3B of equity investments. On average, companies raised a total of \$2.14M of equity within the program. Retail-backed companies raised considerably larger amounts (\$4.61M) than nonretail backed companies (\$810K). We find that for every \$1 of equity raised within the program, companies raised on average an additional \$3.76 of equity and \$1.15 of debt outside the program, demonstrating the program's capital leverage.

Access to capital appears to be significantly better in the two main urban areas of Vancouver (Greater Vancouver Regional District) and Victoria (Capital Regional District) than in the rest of BC, where the average company only raised \$952K of program equity, and where every \$1 in the program generated only \$0.84 of additional equity and \$1.19 of debt. These differences seem to be driven in part by companies pursuing more conservative business models, although there also appears to be lower investor appetite in the rest of BC.

2% of companies in the program went public; 7% were acquired. These exit rates appear relatively low compared to other venture capital markets both in Canada and worldwide. Part of this can be explained by the fact that many companies in the program received seed investments that precede venture capital investing. Only 16% of companies ceased operations, suggesting that the majority of companies remained in operation at the end of the observation period, providing benefit to the BC economy for an extended period.

Total amount of funds' raised by retail funds declined from a high of \$83M in 2004 to a low of \$30M in 2009. Total investments increased from \$50M in 2004 to \$68M in 2008, but fell to \$47M in 2009. Total investments trends follow fundraising trends with a lag of approximately two years. This, combined with the fact that returns have been relatively low and that financial markets are currently experiencing considerable turmoil, suggests that investments by retail funds are likely to stay low and possibly decline even further over the near horizon.

The retail fund's returns have been negative over medium and long-term horizons if we do not take into account the tax credit. From an individual investor's perspective, taking into account tax credits and broker fees, investment returns under- or outperform stock market returns depending on the choice of index and holding period. However, program-supported investments in the retail funds made at the inception date of these funds paid off less than unsupported investments in public equities as represented by either the S&P-TSX Composite Index or the S&P-TSX Venture Composite Index.

While this program evaluation focuses on the companies in the program, it should be mentioned that the benefits of the program are likely to extend to the BC economy more broadly. One important benefit is the legacy created by successful companies in the program. Companies that are acquired typically retain some local presence, their managers frequently move on to play leading roles in new start-ups, and their investors may reinvest part of their gains into the next generation of start-ups. Our report features short case studies, including one of Aspreva Pharmaceuticals Corporation, which demonstrates the legacy benefits of the successful companies in the program.

## Policy Recommendations

The primary objective of this report is to provide a quantitative evaluation of the performance of companies in the VCP. Based on our data findings, as well as a survey and a series of stakeholder interviews, we provide our policy recommendations. It should be emphasized that these recommendations are the opinion of the authors, and do not necessarily represent the opinion of the Ministry or the various stakeholders in the program.

We conclude that the venture capital program is fundamentally valuable to the province of British Columbia. While this conclusion is based on a large number of observations, two findings stand out the most: (i) companies in the program generate more taxes than they consume tax credits, and (ii) companies consistently create new jobs. We recommend that the program be at the minimum maintained and ideally strategically expanded. We also recommend some changes to the program as outlined below.

The retail and nonretail segments of the program have complementary roles, with nonretail investors providing funding at the early stage and retail funds investing at the growth stage. It is important to support both market segments. Ideally, the balance of funding for the two segments should be determined by market forces. At present there are budgetary restrictions that prevent the use of funds across segments. Excess demand in the nonretail segment for the period 2006-2007 suggests that this segment is particularly disadvantaged by these budgetary restrictions.

Having excess demand for tax credits in some years and excess supply in others generates inefficiencies and uncertainties. We recommend greater budgetary flexibility where unused credits could be rolled over for several years. We feel that more generally, barriers between different parts of the program, such as between the retail and nonretail segments, as well as between the so-called equity capital, new media, cleantech and community budgets, may impose inefficient limitations.

The long-term decline of funds raised by retail investors appears to be largely driven by the low returns generated by the retail funds, as well as the recent turmoil in financial markets. The time appears to be ripe to rethink the regulatory and governance structure of the retail segment. Given their relatively small size, the costs of managing a venture capital funds pose a particular challenge for several of the retail funds in BC. If no reform of the retail segment is undertaken, an imbalance is foreseeable where early stage companies might find it difficult to obtain follow-up financing at the growth stage. It is clear that rethinking the regulatory and governance structure of the retail funds necessitates careful further study.

There is an imbalance in the program that relates to the funding of tax credits. This study shows that the federal government receives an equivalent amount of taxes from companies funded in the retail and nonretail segments of the program. The federal government contributes to parts of the retail segment, but provides no financial support for the nonretail segment. We believe that the federal government should participate in the costs of the EBC and VCC programs. Any federal support of the BC nonretail program would presumably require a Canada-wide nonretail (or angel) program. Based on the findings of this report, we clearly would welcome such a program.

More generally, the provincial nature of the program creates unhelpful barriers for investments across provinces. BC investors are prevented from making investments outside of BC, and BC companies cannot use any tax credits to attract investors from other provinces. Introducing a federal nonretail tax credits program might help to break down some of these interprovincial barriers. There is also the possibility for regional reciprocity of tax credits, such as across the Western Canadian provinces.

Our study finds clear differences between the two main urban centres of Vancouver (GVRD) and Victoria (CRD) versus the rest of BC, especially in terms of the availability of equity capital. These differences might well reflect natural economies of agglomeration, a hypothesis which we feel merits further investigation. However, we suspect that more could be done to promote equity investments in the rest of BC. Angel networks play an important role in educating and organizing local angel investors, as well as encouraging syndicated investments. While Vancouver has well-organized angel networks, other parts of BC seem to lack them. It might be worthwhile to promote angel investing in general, and angel networks specifically, outside the two main urban areas of Vancouver and Victoria.

Concerning specific program requirements, our survey research indicates that some companies reached the program limit of \$5M, and that a small number of individual investors reached their personal investment limit of \$200K per year. The rationale for investment limits is more compelling in times when the tax credit budget is fully used, but with a budgetary surplus, such limitations may hinder additional investments. We support moderate increases of these limits, and suggest introducing a system of supplementary allowances in years where the budget is unlikely to be fully used. We also suggest raising the investor limit in proportion to the company limit, so as to allow companies to raise more without having to reach out to a larger number of investors.

Concerning the implementation of the program, our survey and interviews suggest an overall high level of satisfaction. We also support two specific proposals for improvement. First, the online login system could be simplified. Second, the authors noticed during the course of the study that the evaluation of the program involved processing a large amount of non-electronic data. In addition, we made use of data that is currently no longer collected. We recommend instituting annual electronic reporting requirements for all companies in the program that would require them to report some key statistics. This would allow the Ministry to assess the performance of the program much more easily. At the minimum, companies should be required to report their employment and revenue figures, as well as contact information (telephone number and current email) for up to three senior company executives. To obtain a more comprehensive understanding of the program, it would also be worthwhile to collect information on HST paid, total wages, equity fundraising, and any changes in company status (IPO, acquisition, closure), among other things.

# 1 | Introduction

## 1.1 | Objectives and scope of the study

The objective of this report is to provide a critical evaluation of the venture capital program (VCP) in the province of British Columbia, administered by the Investment Capital Branch within the Ministry of Small Business, Technology and Economic Development. This report does not aim to provide a comprehensive review of all aspects of the program, but instead focuses on four key issues.

First, we aim to provide a quantitative evaluation of the provincial and federal taxes generated by companies in the program. In particular, we provide estimates for the taxes paid, focusing on sales taxes, corporate taxes and employees' income taxes. We compare these estimates with the amount of tax credits received by the companies' investors. The comparison of taxes generated with tax credits is an important consideration for government budgets, and also provides a perspective on the economic impact of the program.

Second, we provide a quantitative evaluation of the economic performance of the companies in the program. We focus mainly on employment creation and company growth, as measured by revenues, but also consider secondary measures such as the total wages and company assets. These measures are widely accepted key indicators of companies' activities and their associated economic benefits.

Third, we examine several key indicators of the financial performance of the recipient companies. We focus on four areas: (i) the amount of funds raised by the company both within the program and outside; (ii) the financial performance of the companies as measured by their survival, and possible 'exit', - defined as a third-party acquisition or an initial public offering; (iii) the returns to venture capital in British Columbia as approximated by the net returns on venture capital investments of the so-called retail funds; and (iv) the financial returns of investors in the program as approximated by investors in these retail funds (see Section 2 for a detailed discussion).

Fourth, we discuss several qualitative issues around the design of the program and possible improvements. This part of the evaluation is based not only on the quantitative performance evaluation, but also a variety of other evaluation methods, including expert interviews and a survey described below.

There are several important limitations for this study. The analysis focuses only on the venture capital program as defined above, and does not examine the employee share ownership program, nor does it evaluate the recent launch of the BC Renaissance Capital Fund. In addition, it should be pointed out that the analysis focuses mostly on the companies in the program, and does not aim to provide a comprehensive evaluation of the investor side of the program. Finally, the focus of our study is mainly descriptive, and the "why" question that explains the findings of our study is often left unanswered due to data limitations.

## 1.2 | Methodology and prior literature

Our evaluation of the program is based on a variety of methodological approaches. First and foremost, we perform several quantitative measurements that are based on a variety of data sources described in Section 3. Second, in cooperation with Dave Thomas (Rocket Builders), and with the help of Chris Forrest (an MBA student at UBC), we implemented a survey of companies in the program. Third, we held a series of expert interviews with leading stakeholder in the program, to obtain in-depth perspectives on the various qualitative issues surrounding the design and impact of the program. Finally, in cooperation with Thealzel Lee and Dave Thomas from Rocket Builders, we assembled three short case studies of companies in the program that document the economic impact of the companies' activities, and the role of the tax credit program in supporting these activities.

Note also that due to confidentiality reasons, no names of companies or investors are disclosed in this report. There are two exceptions; first, we mention company names in our case studies; the companies we studied gave us explicit consent to mention their names; second, we explicitly mention the retail funds on several occasions. However, the analysis of the retail funds is based on publicly available data sources.

There have been a number of prior studies that examined issues related to this report. Brander, Egan and Boardman (2005) provide an evaluation of the same program. Their report provides some broad overview of and recommendations for the program, albeit at a much earlier stage of the program's life. The report focuses especially on the fundraising process, estimating what they call the 'additionality' of the program, meaning how much more funding was obtained due to the tax credits. The report also makes a recommendation for a study to assess the performance of firms supported by the program. The current report directly responds to that recommendation.

Lee and Thomas (2005) provide survey-based evidence on the activities of VANTEC, a leading angel network in British Columbia. They estimate that 20% of all companies presenting at the VANTEC forum obtained tax credits under the VCP.

Several studies have looked at the Canadian venture capital market more broadly. Duruflé (2009) examines the overall impact of venture capital on the Canadian economy, finding that venture capital plays an important role in the Canadian economy. Hellmann, Egan and Brander (2005) examine the exit performance of venture capital backed companies in Canada and the US, finding that three Canadian provinces, namely Alberta, BC and Ontario, had venture capital activity comparable to the top US states outside of California and Massachusetts. Brander, Egan and Hellmann (2009) provide evidence that Canadian companies backed by government-sponsored venture capital underperform those backed by private venture capital on a number of performance metrics, including exits and patent production. Cumming and MacIntosh (2006) examine to what extent labour-sponsored venture capital crowds out private venture capital, finding some indirect evidence to that effect. Osborne and Sandler (1998) and Sandler (2004) provide a tax expenditure analysis of the labour-sponsored venture capital program, presenting a critical review of the retail program.

## 2 | Program Structure<sup>1</sup>

The VCP was first established in 1985 under the Small Business Venture Capital Act and is administered by the Ministry of Small Business and Economic Development. At the core of the program is a 30% tax credit for investors who reside in BC. The program has evolved significantly since 1985 and at present it consists of three distinct programs: one for Labour-sponsored Venture Capital Corporations (called EVCCs), one for Venture Capital Corporations (VCCs) and one for Eligible Business Corporations (EBCs).

VCCs and EVCCs are registered holding companies that raise investment capital from BC residents and then invest these funds in qualifying businesses, which are referred to as “eligible small businesses”. Hence, tax-credit eligible investments from investors flow through VCCs and EVCCs to eligible small businesses.

Direct investments in companies are also supported by the VCP. A small business can register as a so-called Eligible Business Corporation (EBC) and accept tax-credit eligible investments directly from investors. This direct investment component of the program began in 2003. In our study, we will use the term “companies” to describe both “eligible small businesses” and EBCs, even though the VCP uses slightly different definitions for these terms.

It is important to distinguish between two types of VCCs. The first type of VCC receives funding from qualified (mostly accredited) investors, and then invests the funding in one or several eligible small businesses. This category actually includes a variety of arrangements, ranging from single-purpose VCCs that invest in a single company (some of these single-purpose VCCs registered before 2003 and would register as an EBC today), to multi-purpose VCCs that are effectively “angel funds” (for example, the Western Universities Technology Innovation Fund - WUTIF). The second group of VCCs are the so-called “retail VCCs”. Retail VCCs may also raise money from accredited investors; however, they attract most of their funds from “retail investors”, members of the general public who do not qualify as accredited investors. Because of their reliance on retail investors, retail VCCs are required to produce an annual prospectus. They maintain reasonably significant investment portfolios and are, in this respect, best comparable to venture capital funds.

The three retail VCCs that currently operate in BC are (i) BC Advantage Funds (which operates two funds, namely the Advantage Growth Fund and the Advantage Venture Fund), (ii) BC Discovery Fund, and (iii) the Pender Growth Fund.

At present there is only a single EVCC fund in BC, called the Working Opportunity Fund (WOF). WOF is managed by GrowthWorks, which is owned by Matrix Asset Management Inc. Like the retail VCCs, WOF raises funds from retail investors. The most important difference between WOF and the retail VCCs is that the 30% tax credits of WOF are shared equally between the federal and provincial governments, whereas the provincial government pays the entire 30% tax credits for the VCCs. There are additional differences in the regulation of VCCs versus WOF relating to various caps, such as differences in the maximum amount that any single investor can invest in the fund, and different investment pacing requirements (which are less stringent for WOF than for the retail VCCs).

In terms of the analysis that follows, we distinguish between the “retail” and “nonretail” segments. The retail segment includes the three retail VCCs as well as WOF, while the nonretail segment includes all other VCCs as well as the EBC program. One issue for the analysis will be that our main unit of analysis is not the investor but the company. One of the analytical challenges will be that some companies obtain funding both from a retail and nonretail investor. In Section 3 we detail how we treat those companies if this applies.

<sup>1</sup>This section draws on Brander, Egan and Boardman (2005) as well as the program website. (<http://www.tted.gov.bc.ca/TRI/ICP/Pages/default.aspx>), which contains further detail.



## 3 | Data Overview

### 3.1 | Base data

The data for this study were gathered from a variety of data sources. The prime sources were documents held by the Ministry of Small Business, Technology and Economic Development (the “Ministry” henceforth). They fall into three main categories. First, the Ministry maintains a database of investments and tax credits, as well as a number of related data items. Second, companies are required to fill out a variety of documents, such as an application form, and an annual return form for several years after receiving a tax credit. These documents include questions on key company statistics, such as employment or revenues. Finally, companies under the VCP are required to file their annual financial statements along with their annual return form. Much of the data were only available in hard copy format and therefore had to be transcribed into electronic format. Moreover, some of the data were provided directly by retail venture capital firms, rather than the Ministry.

The data are based on companies that received funding under the VCP during the period 2001-2008. A total of 519 companies satisfied this criterion, but we were only able to secure systematic data on 317 of them due to missing information (e.g., the company failed to provide the information or it had only recently received its first financing). The other 202 companies represent 15.2% of the tax credits claimed under the program. While the coverage is incomplete, our study captures a large fraction of the companies that make use of the program. We also verified that the percentage of companies that remain active and the percentage of companies that ceased operations (see below for a description of these measures) are not statistically significantly different between the 317 included and the 202 excluded companies. We follow a company from the year of its first tax credit all the way up to its last year, which is either the year that an acquisition occurred, the year that the company ceased operations, or the end of 2008. Table 1 summarizes our sample coverage of companies.

The annual financial statements vary in detail. Some of them are audited statements, but many are not audited but only have a ‘Notice to Reader’. These statements tend to be incomplete and sometimes require interpretation. For example, not all statements include a line item for total wages; others do not properly identify total expenses. The coders who transcribed the hard copies were instructed to read through all parts of the financial statement to identify the key items required for the analysis.

The authors augmented the data in several important ways. First, they organized a survey that included questions of recent company data, including employment and revenues. Second, the authors made use of publicly and commercially available data sources. Bureau Van Dyck (drawing on Dunn and Bradstreet data) was used to augment revenues and employment data, as well as a control sample – see Section 5.4. Capital IQ and Thomson One (VentureXpert, SDC Global New Issues and SDC Mergers and Acquisitions) were used for data on exits. SEDAR was used for exit data, as well as, some financial statements of companies that were listed on the TSX or TSX Venture exchanges. BC Online, the Yellow Pages and Google were used for the survival analysis. Finally, the main analysis also makes use of the data collected through the survey described in Section 3.2.

Based on the discussion of Section 2, we separate out those companies that obtained some or all their funding from retail venture capital investors, versus those that obtained no funding from retail venture capital investors. We find that 50 of our companies obtained funding from only a retail venture capital investor (i.e., one of the retail VCCs or WOF), 206 companies do not have any retail investors, and 61 companies have both types of investors. Most of our analysis uses companies as a unit of analysis. In that case we distinguish between “retail VC backed companies” which includes all 111 companies with retail investors (irrespective of whether they also have nonretail investors), and “Non-retail VC Backed Companies” which includes the 206 companies that had no retail investor. For the calculations of aggregate taxes, our unit of analysis is dollars. In that case we distinguish between a “retail portion” and a “non-retail portion”, constructed as follows. The taxes paid by the

206 companies without retail investors are allocated to the “nonretail portion”, the taxes of the 50 companies with only retail investors are allocated to the “retail portion”, and the taxes of the 61 companies with both types of investors are apportioned to “retail portion” and “nonretail portion” proportionally to the amount of tax credits issued to retail and non-retail investors.

We also classify companies based on the geographic location of the companies’ headquarters. We distinguish between the Greater Vancouver Regional District (GVRD, 225 companies), Vancouver Island’s Capital Regional District (CRD, 27 companies), and the rest of British Columbia (65 companies).

**Table 1: Sample Description**

Total Companies Analyzed		
	Count	Percentages
Total companies	317	100%
Only retail VC funded	50	16%
Only nonretail funded	206	65%
Both retail VC and nonretail VC funded	61	19%
Vancouver (GVRD)	225	71%
Victoria (CRD)	27	9%
Rest of British Columbia	65	20%
Study period	2001-2008	
Average years in program	5.42	
Number of financial statements used	1141	

### 3.2 | Survey of program companies

In cooperation with Dave Thomas at Rocket Builders, and with the help of Chris Forrest, we implemented a survey of companies who have investors that are recipients of tax credits. The objective of the survey was to obtain some recent data on revenues and employment, some quantitative data not available in any of the other sources, and some qualitative data about program perceptions.

Appendix A contains a copy of the survey. Key information requested includes employment data, revenues data, the amount and type of investment capital raised, and comments and suggestions for the program.

The research team compiled a list of all available email addresses of the companies and/or their CEOs. The researchers updated the contact information by searching websites and private databases. They telephoned companies to request additional email contact information and ensure the companies were still operating. The invitation email and link to the survey was then sent to the companies using ‘Survey Monkey’. In addition, where a firm had received institutional capital, the investing venture capital firm was contacted and they forwarded the survey link to survey companies with a request to complete the survey. At least one follow-up phone call was made for each company to secure a better response rate. The researchers also tracked email responses for all companies on the EBC and VCC and EVCC lists to develop estimates of survival rates. The list of companies in the EBC program was compiled first and companies were contacted starting in November of 2009. The companies in the VCC and EVCC program were contacted starting in February 2010. The survey was closed on March 31, 2010.

A total of 473 companies were contacted. 142 or 30% of companies responded to the survey. Not all companies completed every section of the survey; however, 92 or 65% of the respondents provided full employment data. The response rate was higher for EBCs than for VCC or EVCC-backed companies. The researchers found that the EBC company contacts were more current than those of VCC or EVCC-backed companies. Many EBCs started in the program during 2007-2009 and the contact information included more active email address for personnel that are still with the companies. By contrast, the contact data of VCC or EVCC-backed companies ranged from original contact info that was at times as much as 10 years old.

EBC contacts included some very early stage companies that had just registered in the program. Many indicated that they would be raising capital within the program in 2009 or 2010, but had limited data with which to answer the survey for 2008 or earlier.

Table 2 below indicates the sectors for the companies responding to the online survey. The distribution is similar to the distribution of the companies participating in the program.

**Table 2: Sector Profile of Survey Respondents**

Sector Profile		
	Response Per Cent	Response Count
ICT	33.1%	47
New Media	17.6%	25
Biotech	11.3%	16
Medical Device	5.6%	8
Cleantech	21.1%	30
Advanced Manufacturing	8.5%	12
Tourism	0.7%	1
Mining & Natural Resources	2.1%	3
		142

## 4 | Tax Calculations

### 4.1 | Tax methodology

The estimation of taxes and tax credits is an important step in understanding the overall economic impact of the tax credit program on the economy and the government finances. While the comparison of taxes with tax credits is transparent and easy to understand, we should not think of it as a definitive analysis of net fiscal benefits to the government, nor as a complete cost benefits analysis to the province. This is because this simple comparison does not take into account so-called general equilibrium effects (such as economic multipliers), counterfactuals, or externalities of the underlying activities. For example, it could be that many of the companies that benefited from the program would have also been active had there not been any VCP. On the other hand, it is also true that companies that exist in their current form because of the VCP will generally not disappear immediately and will hence continue to yield provincial and federal tax revenues. This is true in particular seen that many companies in the program are entrepreneurial companies in the early stages of their life cycle, and that quite a few will grow to become significant tax-generating corporations. Despite these qualifiers, we believe that the contrast between tax credits and tax receipts is a useful step towards a quantitative understanding of the impact of tax credits on recipient companies.

The calculation of taxes and tax credits can be conceptually divided into three distinct steps. In the first step we estimate the amount of tax credits, in the second step we estimate the amount of taxes paid by the 317 companies in the sample and in the third step we aggregate the data to represent the total program. Our methodology for estimating taxes is based on recommendations from Professor Trang Chung at the University of British Columbia and David Trang and Don Furney from PricewaterhouseCoopers.

For the first step, we need to estimate the amount of tax credits. For the non retail investors, we obtained from the Ministry the precise numbers on the amount of investments eligible for tax credits. Using a 30% tax credit, we calculate the amount of tax credits paid. The only minor limitation of this data is that the dates used are those provided in the Ministry's database, which represent the time of payment of the tax credit, not the date of the investment. For the retail investors, we use the same methodology of starting with the Ministry's list of company investments, but with two adjustments. First, we take into account that the venture capitalists are an intermediary between the companies and retail investors. Tax credits are issued to retail investors who invest in a venture capital fund that has to invest 80% of those funds, but can use up to 20% for expenses. We therefore assume that for every \$1 of fundraising, 80 cents is invested in companies, implying that every \$1 invested requires \$1.25 of fundraising. It follows that for every \$1 invested, we apply a tax credit of  $30\% \times \$1.25 = 37.5$  cents. Second, we need to distinguish between two retail programs. The retail VCCs receive all of their tax credits from the provincial government, whereas the EVCCs receive half of their tax credits from the provincial government and half from the federal government.

For the second step, we perform distinct calculations for seven types of taxes paid by the companies. Four taxes are provincial taxes: PST on outputs, PST on inputs, BC corporation taxes and BC income taxes. The remaining three are federal taxes: GST, federal corporation taxes and federal income taxes. Below we describe our methodology for each of the seven taxes. If for a particular year where the company is known to be active we are unable to calculate the taxes due to missing data, we use the company's average taxes paid from the years with available data. The construction of the underlying data, such as revenues or wages, is explained in further detail in Section 5.

PST on outputs is calculated by multiplying BC revenues with the appropriate PST rate. The Ministry data contain information for some companies about the fraction of revenues that is generated within BC. If no such information is available for a company, we estimate this fraction by using the average fraction found for those companies where the data is available.

PST on inputs is estimated using the following formula: Tax basis = Total Expenses – Deductions, where Deductions = Cost of Goods Sold + Total Wages + Amortization + Purchase of Plant, Property and Equipment. The tax basis is then multiplied with the appropriate PST rate. None of the special exemptions for PST were taken into account for this calculation, implying that there may be some overestimation of PST input taxes in this respect. If no information was available on a particular deduction, it was set to 0. If no information was available for total expenses the tax basis was set to 0, implying that there may be some underestimation of PST on inputs in this respect.

For the BC corporate tax, we calculate taxable income using the company's net income from the financial statements, and adding back in any amortization and the value of any stock-based compensation. This provides an estimate of the taxable corporate income. We then estimate the fraction of income taxable in BC by multiplying taxable income by the fraction of employees that work in BC (or the average fraction of employees working in BC in the sample, if no such fraction is available for the company). We further estimate any losses carried forward by calculating a five year trailing net loss. We then apply the appropriate BC corporate tax rate to this BC net taxable income, taking into account the two-tiered rate structure of the corporate tax.

To estimate BC income taxes, we need to take into account the progressive nature of the income tax system. We do not have data on individuals' salaries (let alone any special exemptions), so instead we estimate the average income tax paid on every dollar that the firm pays out in wages. In other words, the idea is to take a typical firm's wage bill and estimate how much personal income taxes it generates. The key step is therefore the estimation of the average income tax rate. Our survey includes some questions about the number of full-time employees in each of the income brackets. From the survey data, we thus calculate the average fraction of employees in each of the income brackets. Assuming a uniform distribution within each bracket, the mid-point of each bracket defines the average salary for employees in that bracket. For the top income bracket, there is obviously no upper limit and thus no mid-point. We sought advice from compensation consultants 'Corporate Recruiters' who suggested that top salaries for our set of companies would be at least \$140,000. We therefore use \$140,000 as our upper boundary for the top income bracket, which then allows us to identify a mid-point just like for all other income brackets. We then multiply each fraction of employees with their respective income bracket midpoint, and add up across brackets to create a measure that we can think of as the 'company's normalized wage bill'. As a next step, we calculate for each income bracket the average taxes paid by employees in that bracket, and then add up the income taxes across all employees to create a measure that we can think of as the 'company's normalized income taxes'. Dividing the 'company's normalized income taxes' by the 'company's normalized wage bill' we obtain our estimate of the average income tax rate paid on wages. For our set of companies, we estimate the BC provincial average income tax rate to be 8.31%. This rate actually varies by year, going from 10.01% in 2001 to 7.28% in 2008<sup>2</sup>. For each company and each year, we then apply this average income tax rate to the total wage bill to obtain our estimate of the BC income taxes generated by the company.

We use very similar methodologies to estimate all federal taxes. The GST calculations are based on the same revenues as the output PST. For the fraction of revenues outside BC we have too little information on whether they were generated inside or outside Canada. We therefore use the conservative assumption that they were generated outside Canada, thus generating a conservative estimate for GST. We do not estimate any offsets to the GST payments, on the assumption that even though the company may offset some of its expenses against GST, that GST revenue is likely to be paid by the company's suppliers. Note also that there is no equivalent to the PST on inputs at the federal level. For the fraction of employees outside BC we have too little information on whether they work inside or outside Canada. We therefore use the conservative assumption that they work outside Canada, which generates a conservative estimate for federal taxable corporate income. For the federal income taxes we estimate the federal average income tax rate to be 18.87%, ranging from 19.20% in 2001 to 18.64% in 2008.

<sup>2</sup>Note that our income tax calculations do not take into account any deductions that employees may use, generating an upwards bias. At the same time, it is possible that some employees have other sources of income that would increase their average tax rates, resulting in a downward bias of our estimates.

The above methodology allows us to estimate the seven types of taxes paid by the 317 companies in our sample. For the final step of the analysis we want to estimate the total amount of taxes generated by the companies in the program. In the results we will report so-called “tax multipliers” for BC and Canada. These tax multipliers are constructed as follows. For the BC tax multiplier we sum up all the BC taxes paid by the 317 sample companies and divide this by the sum of all the tax credits they received. The Canadian tax multiplier is obtained by summing all BC and federal taxes and dividing the total by the sum of the combined BC and federal tax credits. We then use the tax multipliers to estimate the aggregate amounts of tax credits and taxes paid, at the provincial and federal level. We also use these multipliers to estimate the annual amounts. Note that calculations are based on the amounts of tax credits issued in a particular calendar year. They therefore do not match exactly the timing of the taxes paid, nor the fiscal year aggregates reported by the Ministry.

Our estimates of tax credits paid are highly accurate, although it should be noted that the recipient companies may well have received other tax credits, most notable Scientific Research and Experimental Development, as well as government grants such as National Research Council and others. By contrast, any estimation of taxes, including ours, requires methodological assumptions that may lead to potential biases in the estimates. Our assumptions may lead to upward or downward bias of our computed tax calculation. Let us re-emphasize two main sources of upward and two main sources of downward biases.

In terms of upward bias, our aggregation method uses the information from the 317 sample companies, but applies it to all the tax credits issued, including the 202 companies for which we did not have sufficient information. Our methodology effectively assumes that these companies behave similarly as the 317 for which we have information. It would be easy to relax this assumption. For example, if one were to assume that the 202 missing companies never generated any taxes, we would have to reduce the aggregate taxes by 15.2%, representing the fraction of tax credits used up by these missing companies. A second potential upward bias may stem from our treatment of missing year observations for the 317 companies. If we face missing data for a particular year, say because of a missing financial statement, we estimate tax receipts to be the average amount of taxes paid in all other years. It is possible however that fewer taxes were paid in the missing years than the average paid in the other years.

The two main reasons that our estimates may underestimate taxes are missing data and missing taxes. In terms of missing data, our methodology for estimating wages is likely to underestimate the true amount for several reasons: we are often unable to identify all the wages paid to employees, we are unlikely to identify founder compensation, and we do not attempt to calculate taxes based on the wages generated by the companies’ contractors and consultants, let alone suppliers. We are also likely to underestimate revenues and profits generated outside BC, but within Canada. And we do not capture any of the taxes after an acquisition: these could be significant, given that acquisitions are a common exit option for successful companies.

In terms of missing taxes, our study did not capture several potentially important sources of tax revenues, most notably capital gains taxes, property taxes and taxes generated by the venture capital firms.

## 4.2 | Results on total taxes and tax credits

The total taxes and tax credits are shown in Table 3 below. The data shows results for the entire program, as well for a breakdown of tax credits from the retail and nonretail segments of the program. Recall that taxes from companies that made use of both retail and nonretail tax credits were apportioned according to the fraction of tax credits received from those two types of investors.

The most important finding is that the taxes generated by the program recipient companies are clearly larger than the total amounts of tax credits issued to BC investors. This is true both at the provincial and the federal levels, and it remains true for both the retail and nonretail portions of the VCP.

The overall tax multiplier of 1.98 suggests that for every dollar of tax credit issued under the program, a company generates \$1.98 of provincial taxes; and \$2.92 of Canadian taxes (combined provincial and federal).

The Canadian multiplier is very similar for the retail (2.92) and nonretail (2.91) portions of the program. However, the BC multiplier is 42% lower for the nonretail portion (1.41) than for the retail portion (2.45). This reflects the fact that the federal government, while benefiting from the taxes paid by all companies in the program, only provides tax credits to parts of the retail program (specifically the EVCC), but does not contribute at all to the nonretail portion of the program.

Another interesting finding is that the retail portion is always larger than the nonretail portion. This contrasts with the findings from Table 1, where we saw that there are more companies in the nonretail segment than in the retail segment. It points to the fact that the companies in the two programs are very distinct in terms of size. Recall that most companies in the program are in the early stages of their life cycle, a fraction of which is expected to grow into significant tax-generating corporations. This is particularly true for the nonretail segment of the program, which are used by companies at a very early stage of their development.

**Table 3: Aggregate Taxes and Tax Credits**

	All	Retail Portion	Non-retail Portion
BC Taxes Paid	\$379.57	\$257.01	\$122.55
Federal Taxes Paid	\$368.04	\$238.49	\$129.55
<b>Canadian Taxes Paid</b>	<b>\$747.61</b>	<b>\$495.50</b>	<b>\$252.10</b>
BC Tax Credits	\$191.44	\$104.73	\$86.72
Federal Tax Credits	\$64.81	\$64.81	\$0.00
<b>Canadian Tax Credits</b>	<b>\$256.26</b>	<b>\$169.54</b>	<b>\$86.72</b>
BC Multiplier	1.98	2.45	1.41
<b>Canadian Multiplier</b>	<b>2.92</b>	<b>2.92</b>	<b>2.91</b>

Table 3 shows the aggregated results for the period 2001-2008. We are also interested in how these results develop over time. Table 4 provides an annual breakdown of taxes and tax credits. However, as discussed in Section 3, all estimates should be considered as approximations as it is not always possible to provide an exact timing of taxes and tax credits.

**Table 4: Annual Taxes and Tax Credits for the Period 2001-2008**

Taxes and credits by year, in \$M	2001	2002	2003	2004	2005	2006	2007	2008	Total 2001-2008
BC Taxes Paid	\$47.18	\$40.91	\$39.57	\$47.21	\$39.72	\$51.60	\$58.14	\$55.24	\$379.57
Federal Taxes Paid	\$45.09	\$41.13	\$40.21	\$46.33	\$39.88	\$47.60	\$56.89	\$50.90	\$368.04
<b>Canadian Taxes Paid</b>	<b>\$92.26</b>	<b>\$82.04</b>	<b>\$79.78</b>	<b>\$93.55</b>	<b>\$79.60</b>	<b>\$99.20</b>	<b>\$115.04</b>	<b>\$106.14</b>	<b>\$747.61</b>
BC Tax Credits	\$21.62	\$17.89	\$12.31	\$23.36	\$24.55	\$31.53	\$36.07	\$24.12	\$191.44
Federal Tax Credits	\$14.43	\$10.12	\$6.53	\$7.17	\$5.99	\$7.57	\$6.63	\$6.37	\$64.81
<b>Canadian Tax Credits</b>	<b>\$36.05</b>	<b>\$28.01</b>	<b>\$18.85</b>	<b>\$30.53</b>	<b>\$30.54</b>	<b>\$39.10</b>	<b>\$42.70</b>	<b>\$30.49</b>	<b>\$256.26</b>
Net BC Taxes	\$25.56	\$23.02	\$27.26	\$23.86	\$15.17	\$20.07	\$22.08	\$31.12	\$188.13
<b>Net CDN Taxes</b>	<b>\$56.21</b>	<b>\$54.03</b>	<b>\$60.94</b>	<b>\$63.02</b>	<b>\$49.05</b>	<b>\$60.10</b>	<b>\$72.34</b>	<b>\$75.65</b>	<b>\$491.35</b>

Probably the most important insight from Table 4 is that taxes exceed tax credits in every year. We also note both tax credits and taxes are relatively stable over time. Unlike the strong cycles frequently observed with private venture capital investing, we find that investments remained reasonably steady throughout the period. Moreover, the data suggests a slight upward trend in the amount of taxes paid. Most notably, the last row shows that net federal taxes increase approximately 29% in 2007 and 2008, relative to the average over the period 2001-2006.

Table 4 provides insight into the overall trend for companies that are within the program. However, it does not capture the full dynamic impact that the tax credits may have, as it does not measure the legacy impact of companies that have matured beyond the program. Once a successful company is acquired, it leaves the dataset, but its economic activities persist. A good example for this is Aspreva Pharmaceuticals Corporation, which was sold for over US\$915M to Galenica Holding SA. The company continues to have a local presence in BC. Probably more important, several managers from Aspreva went on to work for new local companies, such as MedGenesis Therapeutix Inc. Moreover, many of the investors who benefitted from Aspreva's success reinvested funds into the next generation of start-ups, including Sirius Genomics Inc. and Protox Therapeutics Inc.. The appendix provides a short case study on the long-run impact of Aspreva Pharmaceuticals Corporation.

### 4.3 | Results on breakdown of taxes

Table 5 provides a breakdown of the main types of taxes paid. While Tables 3 and 4 report aggregate dollar amounts, Table 5 reports the taxes on a per-company basis. This normalization helps to draw out some of the important differences between companies financed by retail versus nonretail investors. Note that the "Retail VC Funded" category now includes all companies that receive funding from retail investors, irrespective of whether they also received funding from non retail investors. The "Not Retail VC Funded" includes all companies that had no retail investors.

The most important insight from Table 5 is that sales taxes are main source of tax revenues at the provincial level, accounting for a third of all taxes paid. At the federal level, employee income taxes are the largest source, accounting for 31% of all taxes paid. Corporate taxes are less important, accounting for less than 3% of the tax revenues.

Note that the introduction of the Harmonized Sales Tax (HST) might affect the future composition of taxes, especially since companies should be able to offset their PST on inputs against PST on outputs, suggesting decreased provincial tax revenues. There may also be some indirect effects of HST not accounted for by this.



**Table 5: Breakdown of Different Taxes Generated by Program Companies**

<b>Taxes Paid</b> <b>Yearly averages per company</b>	<b>All Companies</b>	<b>% of total taxes</b>	<b>Retail VC Funded</b>	<b>Not Retail VC Funded</b>
PST per Company on Outputs	\$68,825	18%	\$154,315	\$22,760
PST per Company on Inputs	\$62,034	17%	\$144,641	\$17,523
BC Corporate Tax	\$3,902	1%	\$10,353	\$426
BC Income Tax	\$54,035	14%	\$98,943	\$29,837
GST per Company	\$61,907	17%	\$140,595	\$19,507
Federal Corporate Tax	\$7,124	2%	\$18,402	\$1,047
Federal Income Tax	\$116,522	31%	\$214,413	\$63,774
Total	\$374,349	100.00%	\$781,662	\$154,875

## 5 | Economic Performance

### 5.1 | Methodology

In this section we consider several key economic indicators that characterize the economic activities of the companies funded in the VCP. The main focus is on company employment, wages, revenues and assets, which are the standard measures of economic activity. While we are able to draw on a large variety of data sources, the data still remains incomplete to varying degrees, for a variety of reasons. Employment figures, for example, are never reported in the annual financial statements. We report on the number of companies for which at least one, and also at least two years of data were available. If data were missing for some year(s), but available for both earlier and later year, we used the growth rate for the available years to estimate the data for the missing years. If a company is known to have gone out of business (but not in case of an exit via acquisition or IPO), we set employment, wages, revenues and assets to 0 for the year after the last year of operations, to account for the cessation of business activities. All tables report the number of companies with at least one year of data. For those calculations that require more than one year of data, the number of companies actually used is lower since all companies with only one year of data are naturally dropped.

The tables below are reporting per-company averages. "Annual averages per company" are always based on all companies with at least one year of data. "Annual average increases" and "growth rates", require at least two years of data. An annual average increase is calculated as the difference in values between two adjacent years, whereas the average annual growth rate is calculated by taking an average of a company's annual growth rates. Finally, the compound annual growth rate is calculated as the annual growth rate using only the first and last available years of data. Both the average annual growth rate and the compound annual growth rate have advantages and disadvantages. The average annual growth rate captures the fact that a company may have created some economic value (say revenues) for several years, even though it may have ceased to operate in the end. The compound annual growth rate does not recognize the economic value created in interim years, since it only recognizes the initial and final data values; however, the former method values all growth rates equally, irrespective of the initial number they are based on. As a consequence we may find that the average annual growth rate is particularly influenced by outliers measured in the early stages of company growth where the denominator is very small.

A challenge to the estimation of wages is that many financial statements do not directly identify the total wage bill. Sometimes wages are found on the income statement, but they could also be found in other statements or the notes, where they are recorded as part of a capitalized asset or part of research and development expenses, or provided in a schedule of a larger expense like marketing or general and administration. While the data coders looked through the entire financial statement to record wages found in any possible recording method, it is likely that they underestimated the total wage bill for several reasons. First, compensation to founders and senior managers is not always identified. Second, the above mentioned methodology only recognizes those wages that could be found, but is likely to miss miscellaneous other wages not mentioned in the financial statements. Third, some companies make use of contractors that generate wage income, which we do not recognize with our methodology.

### 5.2 | Results on employment and wages

Table 6 reports the results for employment, reporting totals as well as a breakout by whether a company is retail or nonretail funded. We find that, on average, companies employ approximately 13 full-time employees. Companies funded by retail investors are more than 3 times larger than those funded by only nonretail investors (25.15 versus 8.17), reflecting that the retail investors invest at a later stage.

Probably the most important finding is that companies in the program add 2.43 employees per year, representing 18% of the average employment. Retail backed companies are at a stage where they generate significantly more jobs than nonretail backed ones (5.25 new jobs per company versus 1.08), suggesting that retail investors focus on growth companies whereas nonretail focus mostly on the initial exploratory stages of company formation. However, if we compare the number of new jobs created relative to the amount of tax credits used, we note that the nonretail generates more jobs on a per-tax-credit basis (2.15 jobs per \$10K versus 0.3). Recall that the retail column includes the 61 companies that received both types of financing.

**Table 6: Employment – with Retail Breakdown**

Employees	All Companies	Retail VC Funded	Not Retail VC Funded
Average per Company	13.23	25.15	8.17
Average Annual Increase (Jobs Created)	2.43	5.26	1.08
Jobs Created per \$10K of Tax Credit	1.55	0.30	2.15
Average Annual Growth Rate	48.97%	76.33%	35.40%
Compound Annual Growth Rate	11.80%	35.00%	0.11%
Number of Companies	282	84	198

Figure 1 examines the year-to-year patterns of employment, focusing specifically on the annual average increases in employment, i.e., the number of new jobs. The most important message from this figure is that almost all annual increases are in the positive range, indicating that on average companies grew every year. After 2003 the average increase for all companies remains fairly stable, with more than 2 new jobs per year. With the exception of 2003, retail backed companies add more employees than nonretail backed companies. Nonretail backed companies created net jobs in most years, with the exception of the 2002 and 2008 recessions.

**Figure 1: Trends in Job Creation**

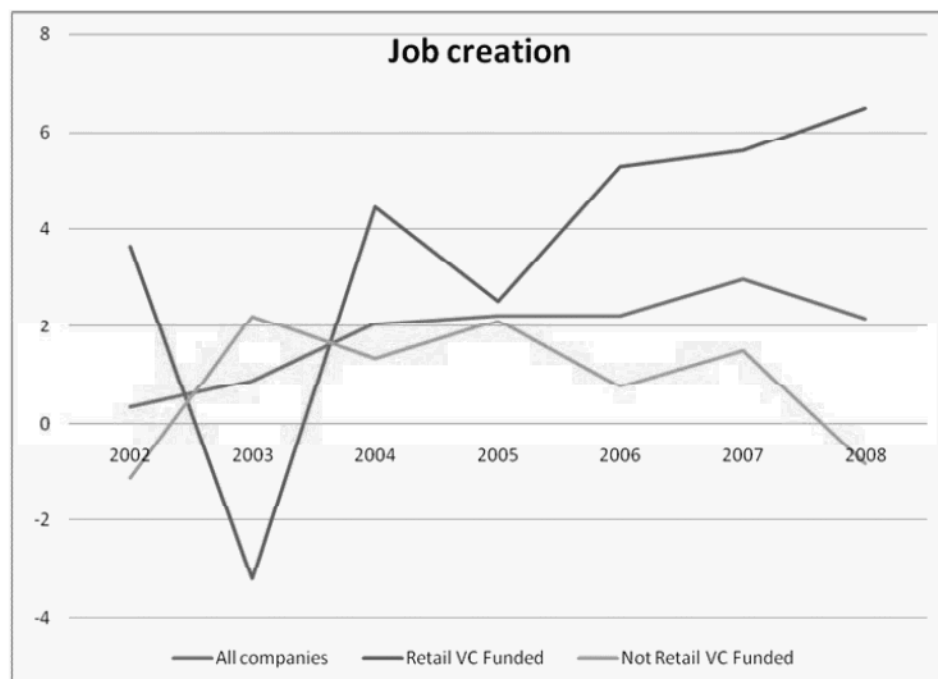


Table 7 examines companies' wage bills. We find that total wages exceed \$600,000, which corresponds to over 150% of the equity capital received within the program, showing that wages constitute a large fraction of the companies' costs. The wage bill increases by almost \$75,000 annually.

**Table 7: Total Wages Paid – with Retail Breakdown**

Wages	All	Retail VC Funded	Not Retail VC Funded
Average per Company	\$635,173	\$1,160,665	\$352,019
Average Annual Increase	\$74,626	\$31,706	\$96,462
Average Annual Growth Rate	122.52%	154.02%	105.91%
Compound Annual Growth Rate	55.01%	87.38%	37.07%
Number of Companies	317	111	206

Tables 8 and 9 build on the analysis of Tables 6 and 7, and provide a regional breakdown of the employment and wage data. Since the Greater Vancouver Regional District contains by far the most companies, its average values resemble those of the overall program average. The Capital Regional District on Vancouver Island also matches the average fairly closely, except that we find more modest average wages and wage increases. The more important finding concerns the rest of BC, where companies have 25% fewer employees (9.87 compared to the average of 13.23), add fewer jobs (0.38 compared to 2.43), and pay 45% less in wages (\$290K instead of \$635K). The fact that companies in the rest of BC are smaller and grow at a slower pace suggests that agglomeration economies matter, and that entrepreneurial companies outside of BC's two main urban areas pursue different growth strategies.

**Table 8: Employment – with Regional Breakdown**

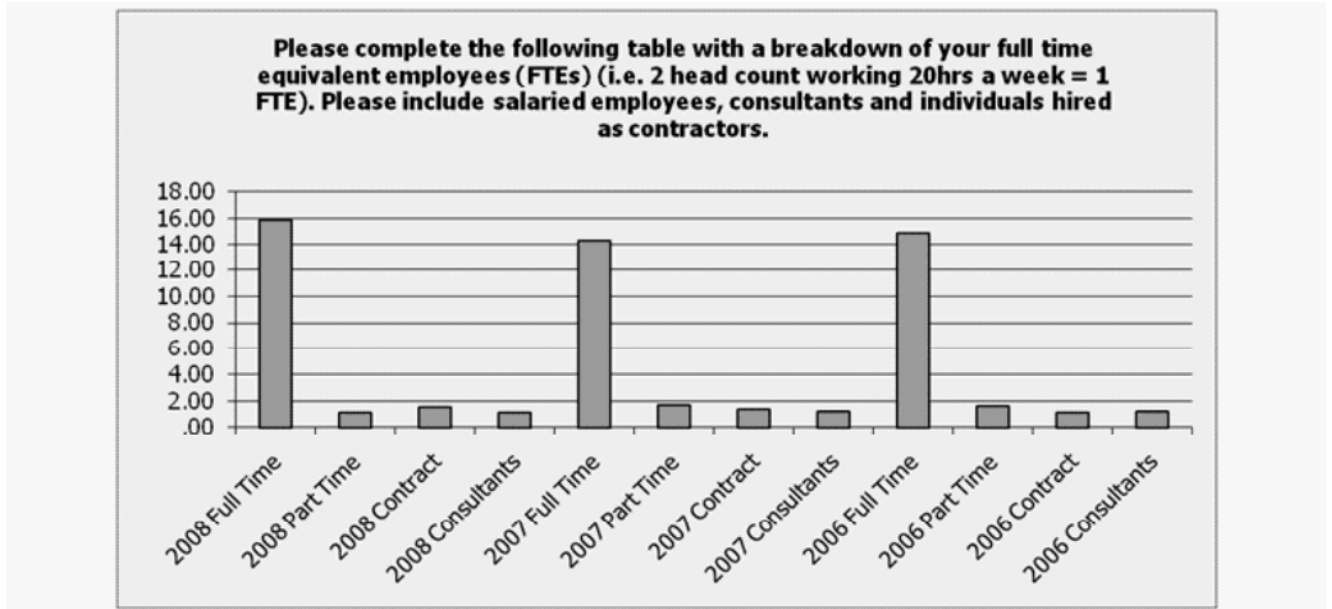
Employees	All	GVRD	CRD	Rest of BC
Average per Company	13.23	14.59	11.46	9.87
Average Annual Increase (Jobs Created)	2.43	3.06	2.88	0.38
Jobs Created per \$10K of Tax Credit	1.55	2.14	0.54	0.22
Average Annual Growth Rate	48.97%	59.80%	20.70%	27.72%
Compound Annual Growth Rate	11.80%	19.27%	-6.12%	-4.02%
Number of Companies	282	192	26	64

**Table 9: Total Wages Paid – with Regional Breakdown**

Wages	All	GVRD	CRD	Rest of BC
Average per Company	\$635,173	\$770,017	\$341,858	\$290,243
Average Annual Increase	\$74,626	\$88,773	\$52,040	\$34,787
Average Annual Growth Rate	122.52%	112.10%	140.10%	151.10%
Compound Annual Growth Rate	55.01%	46.24%	1.34%	106.67%
Number of Companies	317	225	27	65
Number of Companies	282	192	26	64

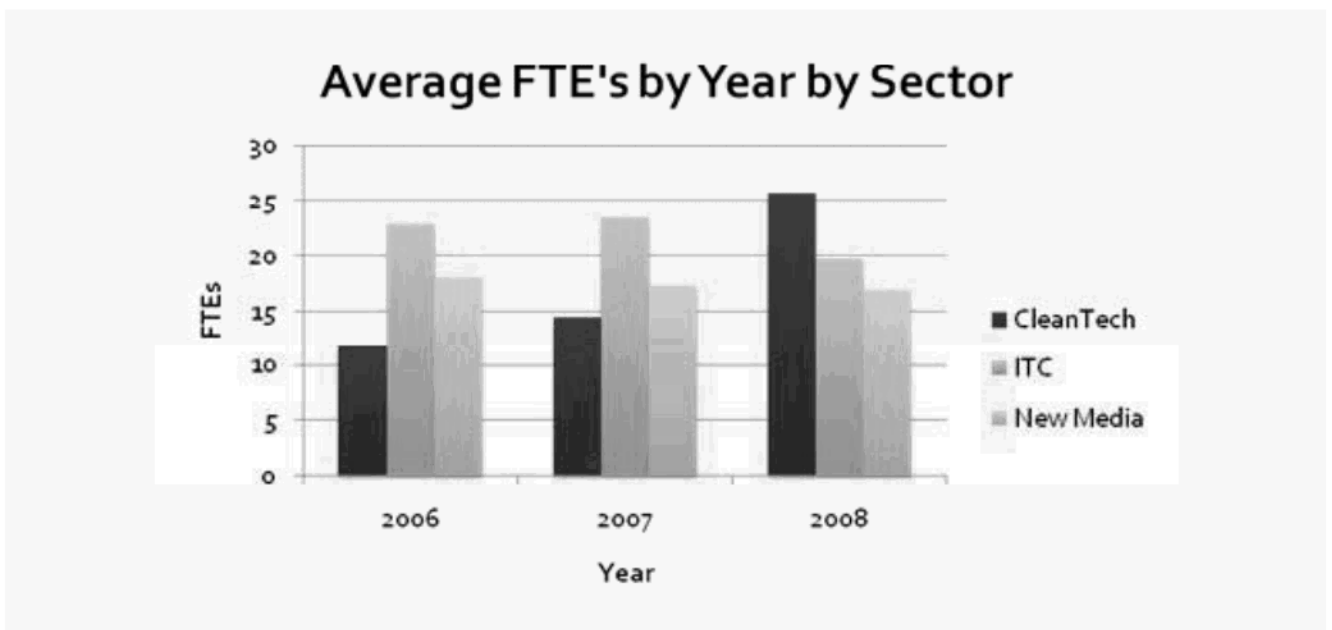
Our survey inquired about the type of positions. We find that the vast majority are full-time employees, and that the companies have relatively little part-time or contract personnel, as shown in Figure 2:

**Figure 2: Average Number of Employees, by Employment Type**



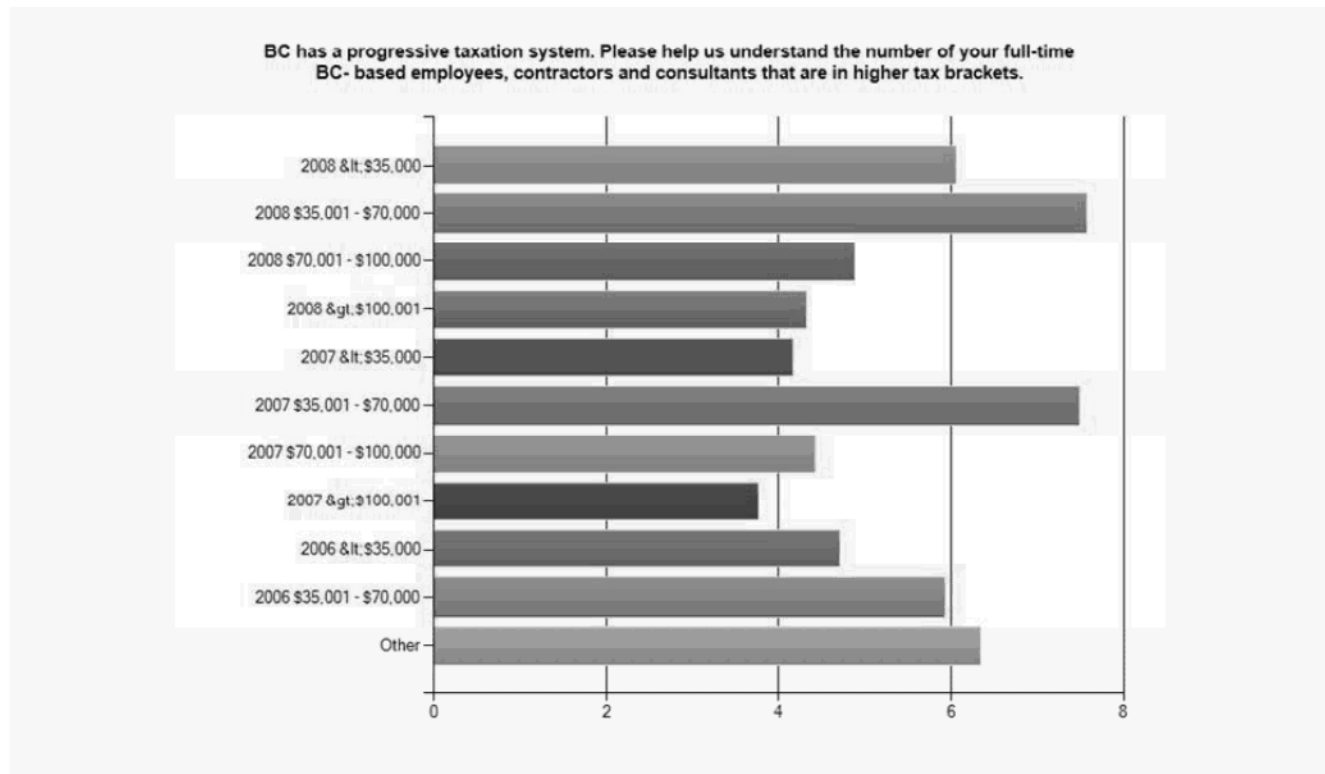
The survey data also allows for a sector breakout, distinguishing between cleantech, ITC (information technology and communications) and new media. Figure 3 indicates the number of Full Time Employees for each sector from 2006 to 2008. The figure shows the greatest growth in the cleantech sector, although that result is partly driven by a small number of outlier companies. Both ITC and new media show a modest decline in employment, suggesting only a moderate adjustment to the recession.

**Figure 3: Employment Figures from Survey Respondents**



The survey also asked companies to indicate the number of employees that they had in various tax brackets. The responses to the survey questions provide an important input into the tax calculations discussed in Section 4.1., but the data are also of interest by themselves. Figure 4 shows the distribution of employees across intervals that approximate the current Canadian income tax brackets. The figure shows that the largest fraction of employees earns between \$35K and \$70K, and a nontrivial fraction earns above \$100K.

**Figure 4: Average Number of Employees, by Income Brackets**

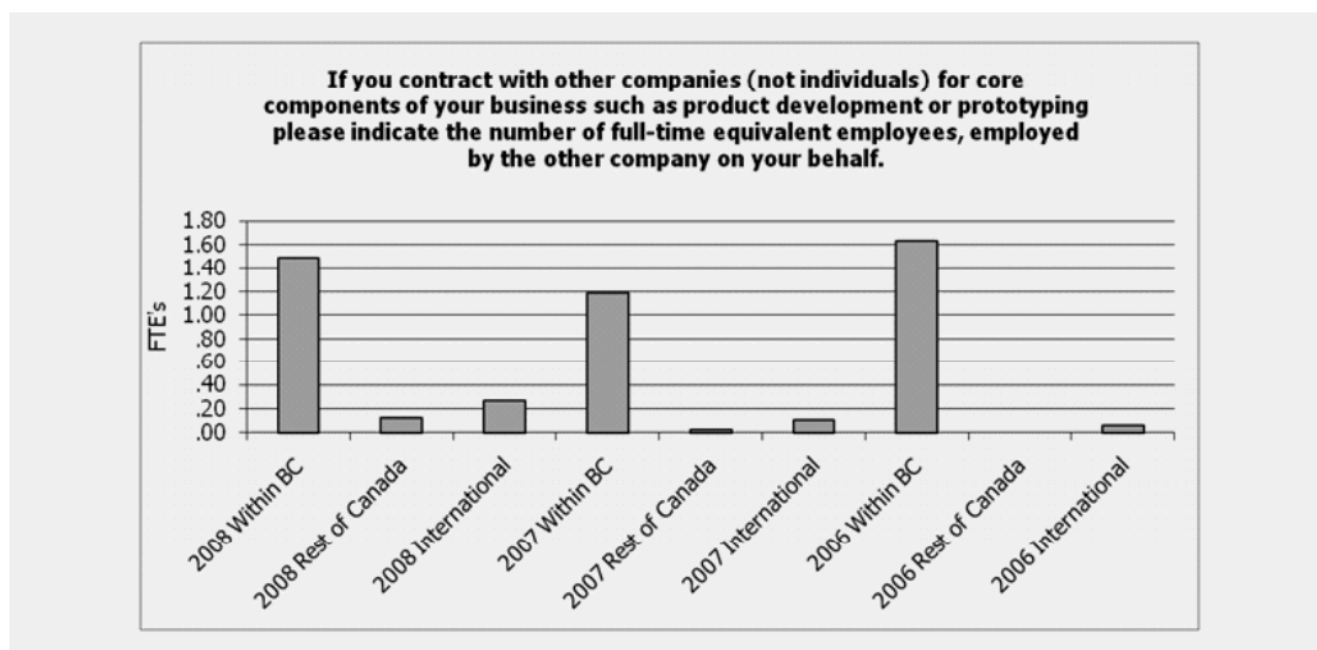


The survey also asked respondents to indicate where their employees were located. Table 10 shows that over 93% of the companies' workforce is located in British Columbia. Most of the employees outside of BC are not in Canada but international. Based on interviews and anecdotal evidence, it appears that most international employees are associated with sales and marketing.

**Table 10: Labour Force by Geographic Location of Work Place**

	FTE's	% of Labour Pool
2008 Within BC	16.9	93.7%
2008 Rest of Canada	0.1	0.7%
2008 International	1.0	5.6%
<b>2008 Total</b>	<b>18.0</b>	
2007 Within BC	18.2	94.6%
2007 Rest of Canada	0.1	0.7%
2007 International	0.9	4.7%
<b>2007 Total</b>	<b>19.2</b>	
2006 Within BC	17.4	93.0%
2006 Rest of Canada	0.6	2.9%
2006 International	0.8	4.1%
<b>2006 Total</b>	<b>18.8</b>	

The survey also inquired about outsourcing. Figure 5 shows that very few companies contract for services, and if so, the jobs remain within BC. In 2008, 53% of responding companies contracted out some work, albeit only very limited amounts.

**Table 5: Average Outsourced Employment, by Geographic Location**

### 5.3 | Results on revenue and asset growth

In addition to employment and wages, we examine the economic performance of the companies in the program by measuring their revenues and asset growth, both of which are standard measures of company performance.

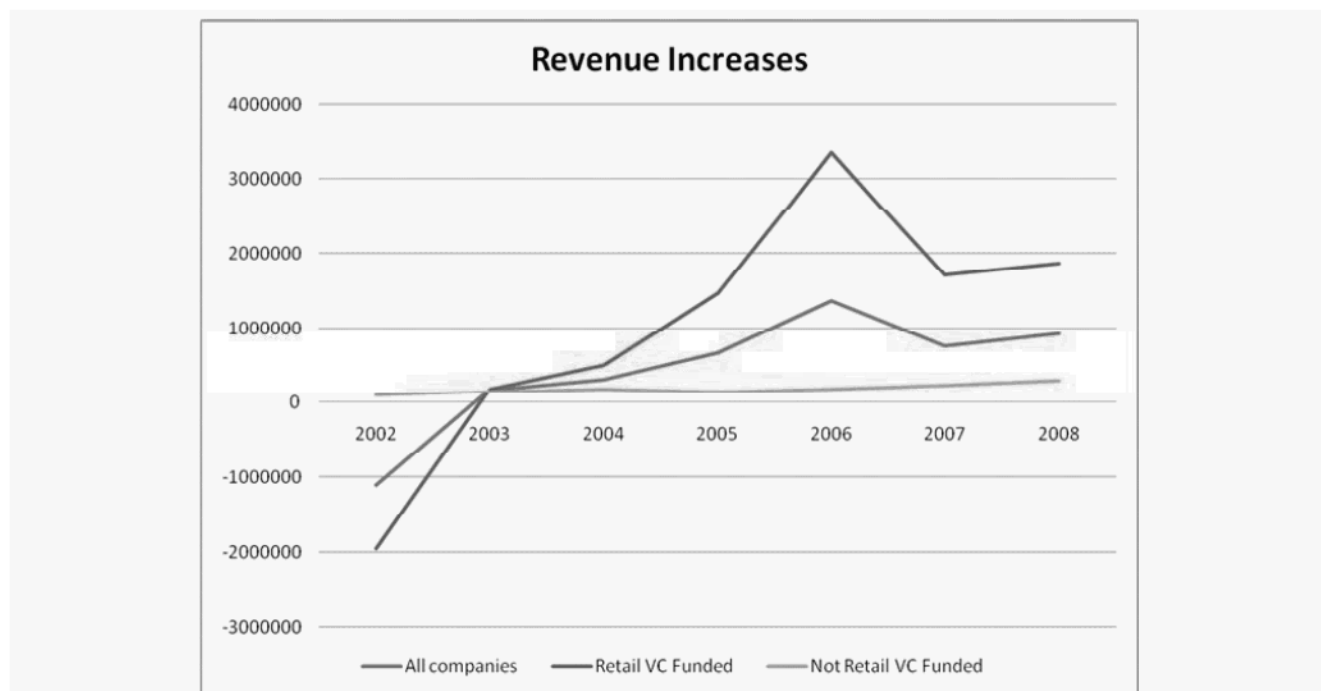
Table 11 shows that companies in the program have average revenues of \$2.27M, and their revenues increase by over half a million dollars on average. We find that companies funded by retail investors have more than 7 times larger revenues than those funded by nonretail investors (\$5.18M versus \$0.70M). This is in part driven by the fact that many nonretail backed companies are in fact pre revenue. The presence of companies with very little revenues also explains the extraordinary average annual growth rates, which cannot be compared well with the growth rates of more established companies.

**Table 11: Revenues – with Retail Breakdown**

Revenues	All Companies	Retail VC Funded	Not Retail VC Funded
Average per Company	\$2,275,651	\$5,179,293	\$703,436
Average Annual Increase	\$571,827	\$1,184,372	\$235,087
Average Annual Growth Rate	2429.14%	3452.96%	1868.07%
Compound Annual Growth Rate	136.68%	54.91%	188.66%
Number of Companies	316	111	205

Figure 6 shows the year-to-year evolution of the annual revenue increases. With the exception of the tech downturn in 2002, companies continue to grow their top line revenues. Indeed, the figure shows that the annual increases remain in the positive range every year after 2002, reaching a peak in 2006. Overall, this figure suggests that the companies in the program are resilient despite the recent macro-economic trends.

**Figure 6: Trends in Annual Revenues Increases**





Revenues contain a strong export component. Our data suggest that 47.35% of all revenues are generated outside BC. In addition, the survey shows that the percentage of sales outside BC is particularly high in the cleantech sector, reflecting the fact that energy is relatively cheap to produce in BC. An interesting point in case is Endurance Wind Power Inc. Appendix B provides a short case study about this company, which sells over 90% of its wind turbine products outside Canada.

Table 12 examines the assets of the companies in the program. The average increase of \$657K represents over 18% of the average level of \$3.56M. Again we find significantly larger values for companies funded by retail VCs.

**Table 12: Assets – with Retail Breakdown**

Assets	All Companies	Retail VC Funded	Not Retail VC Funded
Average per Company	\$3,558,022	\$7,861,939	\$1,227,608
Average Annual Increase	\$657,622	\$1,447,983	\$219,487
Average Annual Growth Rate	608.31%	1463.15%	129.23%
Compound Annual Growth Rate	478.49%	1235.89%	46.91%
Number of Companies	316	111	205

Tables 13 and 14 are similar to Tables 11 and 12, providing a regional breakdown. Similar to the results of Section 5.2, we find that companies outside of BC are significantly smaller and grow significantly slower than the companies in the major urban areas of Vancouver and Victoria. The elevated revenues and assets for the Capital Regional District are driven by a few outlier companies that experienced high growth during that period. We should not over-interpret these numbers, given that they are based on only 27 companies, representing less than 10% of our sample.

**Table 13: Revenues – with Regional Breakdown**

Revenues	All	GVRD	CRD	Rest of BC
Average per Company	\$2,275,651	\$2,528,964	\$3,250,070	\$997,937
Average Annual Increase	\$571,827	\$437,422	\$2,620,098	\$195,077
Average Annual Growth Rate	2429.14%	2923.22%	2730.95%	632.52%
Compound Annual Growth Rate	136.68%	86.65%	622.88%	82.45%
Number of Companies	316	224	27	65
Number of Companies	282	192	26	64

**Table 14: Assets – with Regional Breakdown**

Assets	All	GVRD	CRD	Rest of BC
Average per Company	\$3,558,022	\$3,813,706	\$6,044,082	\$1,610,326
Average Annual Increase	\$657,622	\$374,355	\$4,062,675	\$184,631
Average Annual Growth Rate	608.31%	793.30%	216.65%	126.11%
Compound Annual Growth Rate	478.49%	640.93%	88.94%	82.35%
Number of Companies	316	225	27	64
Number of Companies	282	192	26	64

## 5.4 | A comparison with companies outside the VCP

The main analysis of this report focuses on the performance of companies within the VCP. To take a broader perspective it is desirable to compare companies against similar companies outside the program. However, finding a truly comparable control sample is difficult given the limitations of accessing private company data. We obtained access to a commercial database from Bureau van Dyck (BvD henceforth) that includes data about BC companies originally collected by Dunn and Bradstreet. The database contains a total of 150,780 BC companies. It includes a very broad spectrum of companies, but still does not contain all BC companies. We matched them against our sample of program companies and identified 91 companies that appear in both samples. While our study rendered a lot more information on these 91 companies, we only use BvD's own data for them to make for a fair comparison with the full BvD sample. We also define a second, broader control group in the BvD data that consists of 49,651 high technology companies based on a NAIC industry classification code.

Table 15 shows the comparison of companies within and outside the program. The most important result is that the companies in the program outperform their controls groups on every measure: they are larger, they create more new jobs, and their revenues grow significantly more. Some of the differences are quite striking: the 91 program companies found in the BvD dataset generate 1.09 new jobs per year, whereas companies in the broad control group creates 0.13 jobs and firms in the narrow high technology control group actually lose 0.26 jobs over the period. This contrast is even more dramatic if we remember from Table 5 that the average company in the program actually adds 2.43 jobs per year. The difference is due to the fact that the 91 program companies found in the BvD dataset are not fully representative of all companies in the program. Indeed, the BvD data captures a slight larger set of companies, in terms of both employees and revenues. However, it is not clear that this bias should affect the main insight from Table 16, because selection biases are likely to affect both program companies and the control group.

**Table 15: Comparison of Program Companies against Control Groups**

Employees	VCP	BC High Tech	BC All
Average per Company	18.40	11.02	12.12
Average Annual Increase	1.09	-0.26	0.13
Average Annual Growth Rate	15.79%	13.50%	14.04%
Compound Annual Growth Rate	10.71%	7.50%	7.50%
Number of Companies	91	49651	150780
Employees	VCP	BC High Tech	BC All
Average per Company	\$5,779,654	\$1,312,520	\$1,917,558
Average Annual Increase	\$2,121,877	\$1,238	\$116,200
Average Annual Growth Rate	57.63%	18.68%	28.54%
Compound Annual Growth Rate	40.33%	11.30%	12.46%
Number of Companies	105	48343	146022

## 6 | Financial Performance

We now turn to the financial performance of companies in the VCP. In this section we examine the companies' success in terms of raising funds and generating an exit for their investors, and their survival chances.

### 6.1 | Fundraising

We first examine how much equity was raised within and outside the program. We also examine the amount of funds raised as debt. Our base data come from the annual financial statements and the other ministry documents. The Thomson One VentureXpert was used to augment the data.

Table 16 summarizes our main findings. Companies raise an average of \$1.3M per year, and \$7.2M in total. The majority of the equity is raised outside of the VCP. The average investment amount claimed within the program amounts to \$415K per year, for a total of \$2.1M.

A useful way of summarizing the fundraising information is to consider what we call the equity and debt leveraging factors. The equity leveraging factor is defined as the total amount of equity raised (excluding the equity raised in the VCP), divided by the equity raised in the VCP. The debt leveraging factor is defined as the total amount of short and long term debt raised, divided by the equity raised under the VCP. The equity leveraging factor is 376%, indicating that for every dollar of equity raised in the program, companies raise an additional \$3.76 of equity outside the program. In addition, the debt leveraging factor of 115% suggests that they also raise an additional \$1.15 of debt. Note that the equity leveraging factor differs from a simple comparison of the averages reported in Table 17 (e.g.,  $(\text{total investment} - \text{program investments}) / \text{program investments} = (\$7.27\text{M} - \$2.14\text{M}) / \$2.14\text{M} = 239\%$ ), because the average value of a ratio is different from the ratio of the average values.

Retail backed companies raise a lot more money, reflecting the greater cash needs at the growth stage. Interestingly, however, there is almost no difference between retail and nonretail backed companies in terms of their ability to leverage tax credit investment with outside equity, as shown by the fact that their equity leveraging factors are within 10% of each other. Another interesting finding is that nonretail companies access relatively more debt capital, raising \$1.29 of debt capital for every dollar of equity capital attracted through the program, compared to \$0.90 for retail backed companies. This difference is partly driven by the fact that some large retail backed companies raise very little debt at all.

Table 16 reveals the regional patterns for the fundraising process. The most important finding is that average investment amounts within the VCP are less than half in the rest of BC, compared to Vancouver (GVRD) and Victoria (CRD). In addition we find that the equity leveraging factor of 84% for the rest of BC is less than a quarter the size of the factor for the full sample. Raising equity outside of the two major urban areas remains a formidable challenge to start-up companies. Interestingly, the debt leveraging factor for the rest of BC is close to the sample average, indicating that the shortage concerns equity and not debt financing. Note also that the low debt leveraging factor for the CRD is partly driven by a few large investments that used relatively little debt.

**Table 16: Average Fundraising**

(in \$, per company)	All Companies	Retail VC Funded	Not Retail VC Funded
Total Investments	\$7,270,685	\$16,970,040	\$2,044,332
Annual Investments	\$1,274,108	\$2,958,430	\$366,537
Total Investments Within VCP	\$2,142,825	\$4,611,774	\$812,469
Annual Investments Within VCP	\$415,408	\$894,732	\$157,132
Equity Leveraging Factor	375.94%	381.06%	373.18%
Debt Leveraging Factor	115.40%	90.00%	129.08%
	GVRD	CRD	Rest of BC
Total Investments	\$8,606,409	\$10,361,750	\$1,363,041
Annual Investments	\$1,533,263	\$1,450,396	\$303,807
Total Investments Within VCP	\$2,535,338	\$1,739,180	\$951,793
Annual Investments Within VCP	\$491,167	\$280,070	\$209,383
Equity Leveraging Factor	435.44%	582.54%	84.17%
Debt Leveraging Factor	121.18%	57.62%	119.37%

Aggregating the total investments of the companies in the sample, we estimate that companies raised a total of \$2.3 billion dollars of equity. This is almost certainly an underestimate, because our sample does not contain all the companies in the program. We also estimate the total amount of new debt to be at least \$324M.

The survey contains additional insights into the fundraising process. Figure 7 indicates the funds raised from investors that are eligible for the tax credit and from investors outside of the program, as well as the overall amount of funds that were sought. Funds raised from inside and outside the program equal the total funds that were raised in a given year.

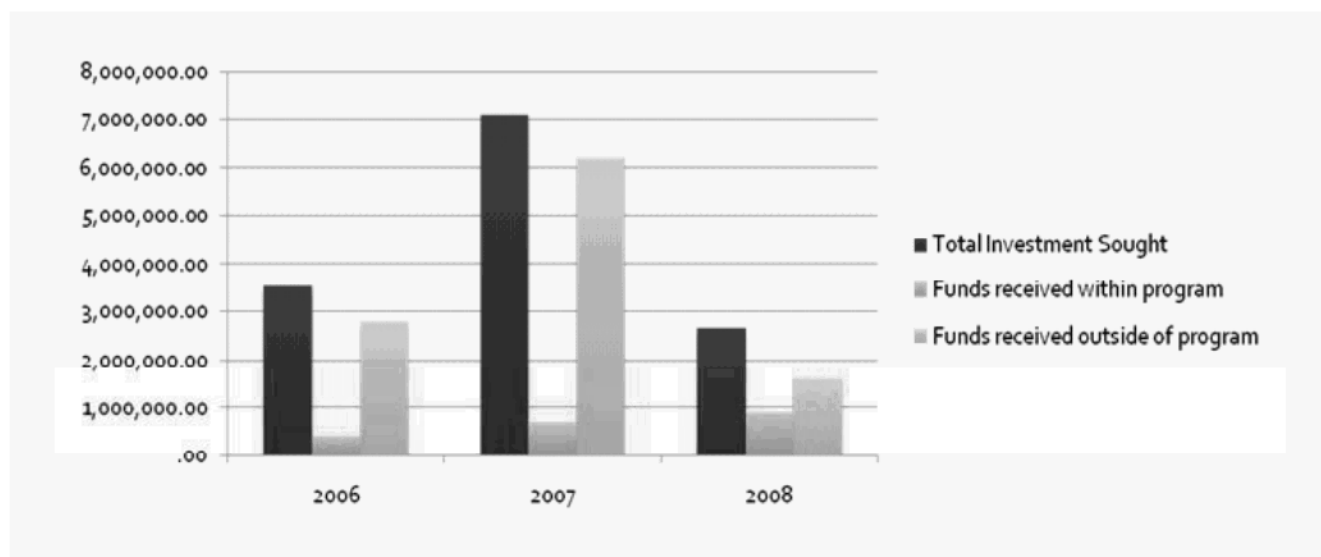
**Figure 7: Survey Respondents' Fundraising Amounts**

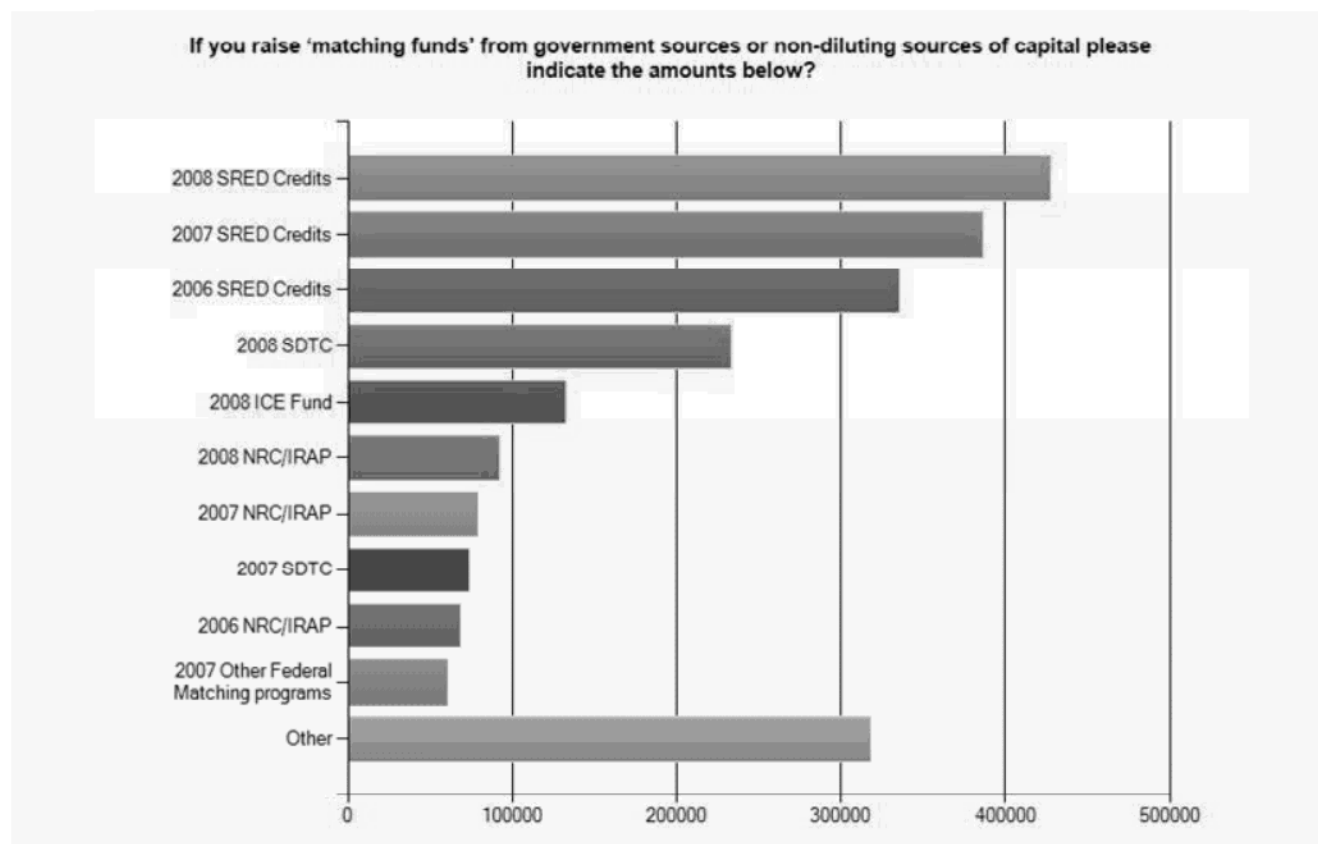
Table 17 shows survey evidence indicating that while overall investments declined with the economy in 2008, investment inside the program grew consistently from 2006 to 2008. This suggests that the government program may play a role in terms of maintaining the supply of capital in economic downturns.

**Table 17: Survey Respondents' Attempted Fundraising**

Investment Sources			
Growth rate	2006	2007	2008
Total investment sought		100.9%	-62.6%
Funds received within program		66.0%	31.2%
Funds received outside of program		122.4%	-74.3%
<b>Composition of funding source</b>			
Funds received within program	11.7%	9.6%	33.9%
Funds received outside of program	79.1%	87.5%	60.2%
Funds not raised	9.2%	2.8%	5.9%

The survey also inquired about non-dilutive sources of funding: i.e., sources of funding where the company incurs no financial obligations. Sixty-one percent of companies indicated that other government programs such as SR&ED, NRC/IRAP, SDTC or the ICE Fund enhanced their ability to fundraise from private investors. Figure 8 shows the average amounts of funding raised through non-dilutive sources.

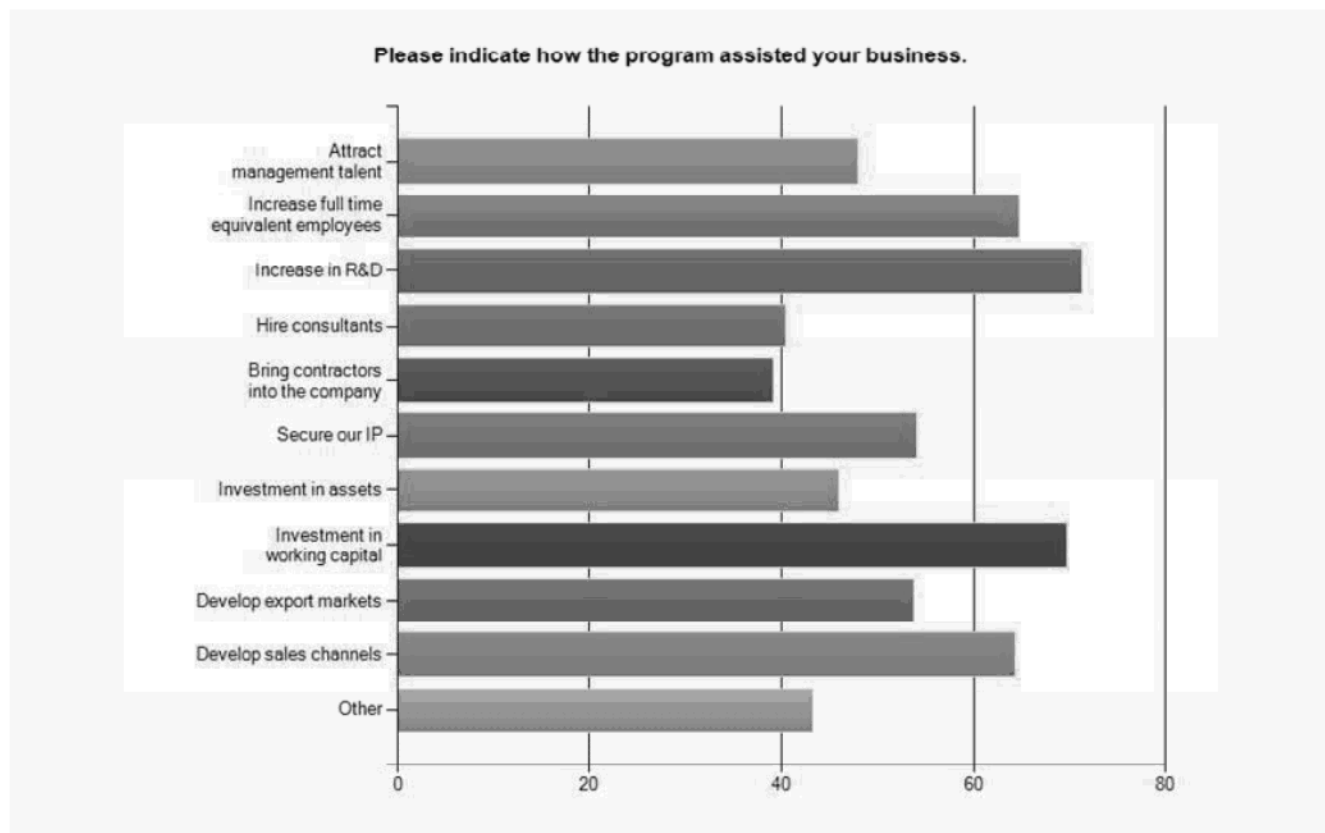
**Figure 8: Sources of Non-dilutive Funding**



Clevest Solutions Inc., is a good example of a company that made use of the tax credit program, raising most of their funding from angel investors. They then augmented their funding with several non-dilutive funding sources, such as SRED and NRC/IRAP. The appendix features a short case on the company.

The survey also inquired about the use of funds. Figure 9 shows the percentage of respondents who indicated that this use of funds applied to them. Funds were most often used to fund R&D, increase employment and expand working capital. These employment increases reflect the needs of early stage companies to complement technical personnel with sales and marketing resources required for the commercialization of products and services.

**Figure 9: Percentage of survey respondents that had following uses of funds**



## 6.2 | Exit and survival analysis

In this section we examine the financial success of companies in the VCP by looking at exit events. Exits through acquisition or initial public offering (IPO) are widely considered to be the landmarks of investment success in start-up companies. Ideally one would like to study investor returns, or exit values. In general the data required for such a calculation is not publicly available and we had no privileged access to any private data sources (see also Section 7). Hence we limit our focus to analyzing the rates at which exit occurs. In addition, we also look at the rate at which companies cease operations.

For the exit and survival analysis we make use of the entire population of 519 companies. We examine their active/inactive status as of March 2010, and any exit information for each company from the start of the program to the end of 2009. The exit information combines research from a variety of data sources. Specifically, to determine whether each company is

still active or not, the following steps were undertaken. First, for each company we searched for possible exits via IPO or acquisition, using several commercial databases, namely Thomson One (VentureExpert, SDC Global New Issues and SDC Mergers and Acquisitions) and Capital IQ. Second, each company was searched on the BC Online database. If a company existed on this database, it was marked as active. Third, all companies that returned the survey associated with the VCP study was marked as active. Fourth, all remaining companies were searched on Google and the Electronic Yellow Pages to check for active status. Companies with active websites or phone numbers were marked as active. Finally, information regarding the status of companies provided by local experts and venture capital firms was used to augment the information gained from all previous sources.

Figure 10 shows the exit and survival rates for the entire sample, as well as for retail and nonretail backed companies. The most important result is that successful exits, as measured by IPOs and acquisitions, occur in less than 10% of all companies. By comparison, Brander, Du and Hellmann (2010) examine exit rates worldwide for the period 2000-2008, finding exit rates of 14.4% worldwide and 20.63% for Canada; IPOs account for 4.53% of all exits worldwide and 5.47% for Canada, the remainder of the exits being acquisitions.

Breaking out exit rates by whether or not companies are funded by retail VCs, we find that the exit rate is significantly higher for retail backed companies than for nonretail backed companies. It should be noted here that the companies not funded by retail VCs are significantly smaller and younger. In that sense, the comparison with the results of Brander Du and Hellmann are more appropriate for the retail VC backed companies. For the retail backed companies, the exit rate is actually higher than that of Brander, Du and Hellmann (2010). For the nonretail backed companies, however, the data suggests that exit remains a significant challenge, which may be partly due to the early stage nature of the program.

Another interesting finding from Figure 10 is that the failure rate is relatively low across all segments of the program. This is a sign of the resilience of companies in the program, although informal discussions with program participants also suggest that some companies may be effectively out of business but retain the corporate shell for other reasons.

**Figure 10: Exit and Survival – with Retail Breakdown**

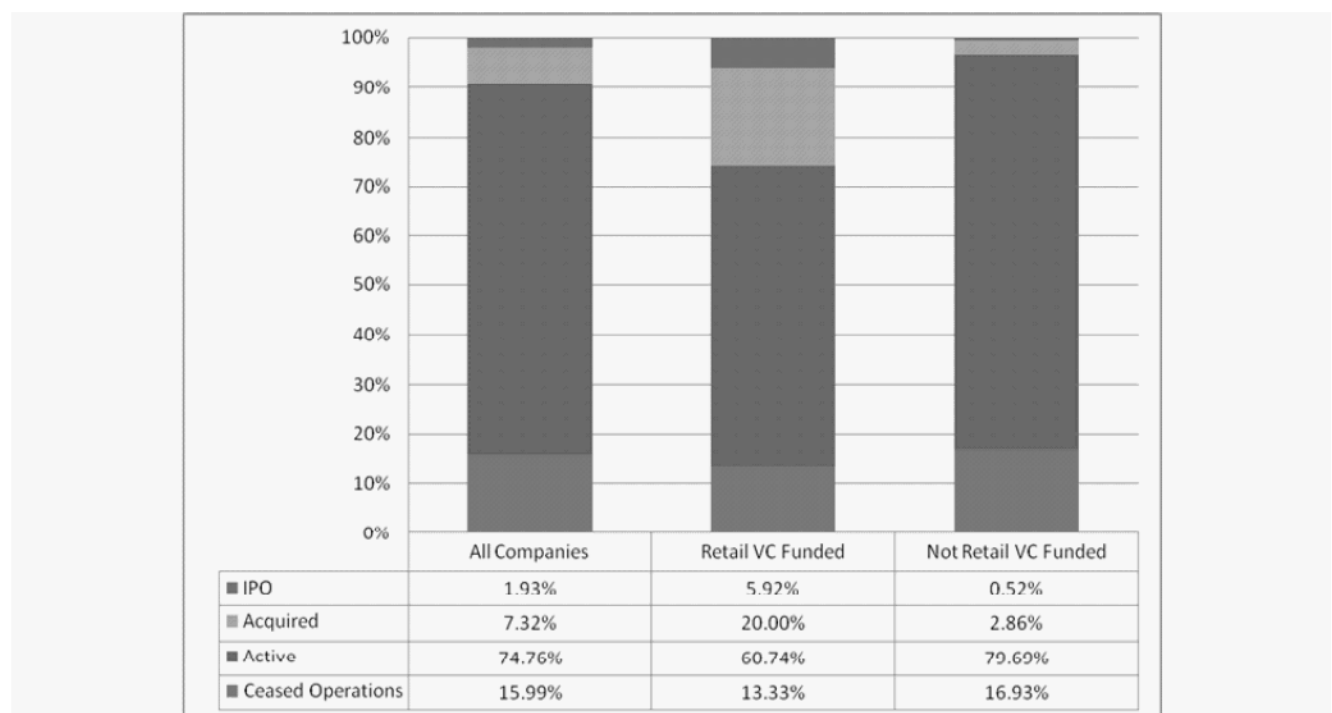
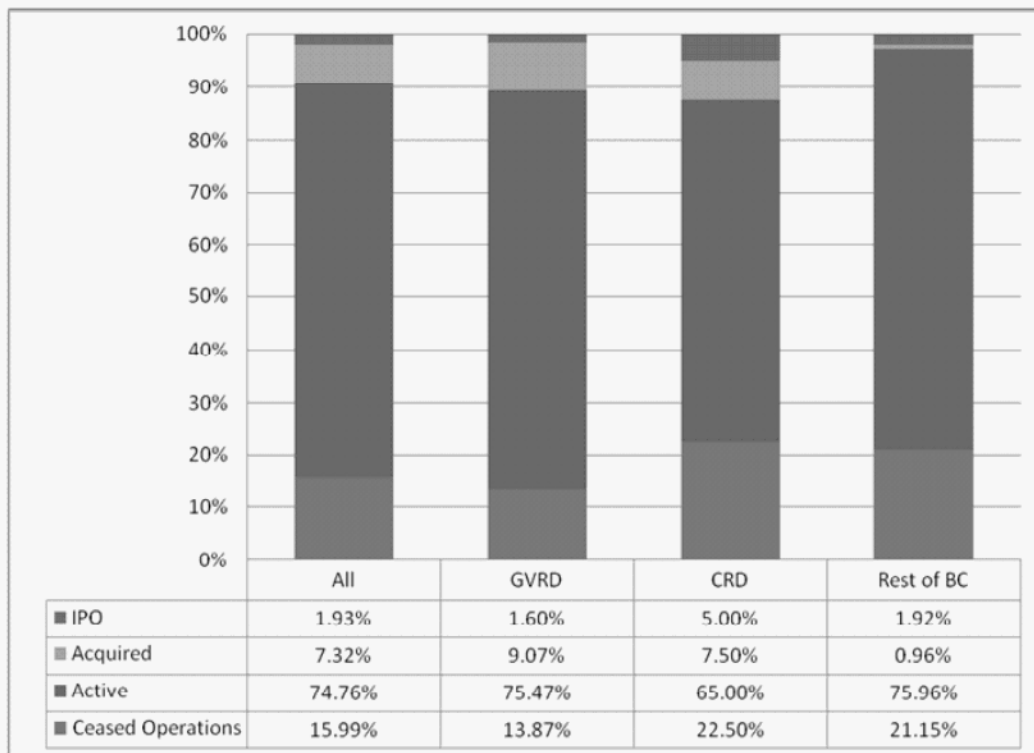


Figure 11 provides an analysis of exit and survival separating out the main regions of British Columbia. The most striking finding is that the exit rate for the rest of BC is much lower than for the Vancouver and Victoria areas. This is related to our previous finding that fundraising is more challenging in the rest of BC, indicating that companies outside the two major urban areas are facing constraints in terms of equity financing at all stages of the lifecycle, including the exit stage. It may also reflect differences in company's business model, in terms of a preference for continued business operations.

**Figure 11: Exit and Survival – with Regional Breakdown**





## 7 | Financial Performance of Retail Funds

In this section, we examine the financial performance of the retail funds, namely the three VCCs (BC Advantage, Discovery and Pender) and the EVCC (Working Opportunity Fund, or (WOF) administered by GrowthWorks. We discuss their fundraising, investments and returns. Our analysis focuses on the period 2003-2008, because the VCC funds were only started between November 2002 and August 2003.

The data for Sections 7.1 and 7.2 was obtained from the Ministry of Small Business, Technology and Economic Development. The returns computations in Sections 7.3 and 7.4 are based on data reported in publicly available data sources, namely GlobeAdvisors and Datastream International and the Canadian Venture Capital Association (CVCA).

### 7.1 | Fundraising by retail funds

Table 18 shows that the amounts raised by retail funds totaled \$394M over 2003-2009, and that this amount was split about equally between the retail VCCs and WOF. The most important insight from Table 18 is the significant decline of fundraising amounts over time. By the end of 2009, fundraising was down by 64% relative to the peak of 2004, with the retail VCCs being down by 40% and WOF by 80%. This downward trend cannot be explained alone by the 2008/2009 recession; it was already apparent by 2007. Relative to WOF, the retail VCCs are more stable over time, in part because the retail VCCs had reached their maximum amount of tax credits in several years, notably in 2004, 2006 and 2007 (not shown in table).

**Table 18: Annual Fundraising for Retail Funds**

<b>Retail Fund Fundraising (in \$Million)</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2003- 2009</b>
Advantage Growth Fund	\$ 0.05	\$ 7.00	\$ 5.08	\$ 3.33	\$ 6.15	\$ 2.01	\$ 0.30	\$23.91
Advantage Venture Fund	\$11.85	\$ 9.93	\$10.00	\$13.43	\$10.00	\$ 4.58	\$ 5.30	\$65.09
BC Discovery Fund	\$15.74	\$10.02	\$ 9.06	\$ 6.37	\$10.00	\$ 8.64	\$ 4.20	\$64.04
Pender Growth Fund	\$ 5.93	\$ 7.00	\$ 6.97	\$ 4.51	\$ 5.92	\$ 5.42	\$ 3.40	\$39.15
Total Raised by Retail VCCs	\$33.57	\$33.95	\$31.11	\$27.64	\$32.07	\$20.65	\$20.65	\$199.64
Working Opportunity Fund	\$47.58	\$49.54	\$34.26	\$19.01	\$21.13	\$12.89	\$ 9.65	\$194.05
Total Raised by all Retail Funds	\$81.14	\$83.49	\$65.37	\$46.65	\$53.20	\$33.53	\$30.30	\$393.69

### 7.2 | Investments by retail funds

In order to understand the investments of the retail funds, it is important to be aware of the investment pacing rules imposed by regulation. The program requirements mandate that retail VCCs invest 80 % of the funds raised in a particular calendar year within two calendar years. The remaining 20% of the funds raised may be spent on expenses. The EVCC program, applicable to WOF, mandates that funds invest 80% of the funds raised in a particular calendar year within four calendar years. Again, the remaining balance of 20% of the funds may be spent on expenses. If the retail funds generate a return on exit of the investment, they may be required to reinvest their costs if the exit take place within 5 years of the investment moment. If the exit take place later than 5 years from the investment moment the retail funds may also reinvest into new portfolio companies; however, they also have other options for using those proceeds.

Table 19 examines the aggregate amounts of investments made by retail funds. WOF investments have been relatively stable over time, ranging from \$30M to \$40M. Retail VCC investments varied over the years. In their “start-up years” 2003 and 2004, investment amounts were obviously low, but between 2005 and 2007 total investments ranged from \$21M to \$28M. In 2008, they reached a peak at \$34 M, largely driven by the fact that 2007, especially was a strong year for fundraising. In 2009, however, they fell by almost half, reflecting lower fundraising in 2008 as well as the economic downturn.

The data provides partial support for the claim that retail funds play an important role in maintaining the supply of venture capital in an economic downturn. The investment levels are largely, constrained by the investment pacing rules described above. To the extent that fundraising also declines in a recession, the retail VCCs (and to a lesser extent the EVCCs) are likely to lag business cycles by one to two years. This suggests that retail funds would not be able to sustain elevated investments levels in a prolonged recession.

Comparing Tables 18 and 19, we note that over the period 2003-2009, the retail VCCs invested \$135M, which is 68% of the funding they raised. The 68% falls short of the required 80% by the programs. However, the investment pacing rules described above allow that funds raised in 2008 and 2009 be invested only in 2010 or 2011. The same investment pacing rules resulted in WOF investing 27% more during 2003-2009 than the funds they raised during this period (investments of \$246M, while fund-raising was at \$194M). This can be attributed to the fact that WOF funds had raised considerable amounts just prior to the observed time window (more than \$70M in each of these three years 2000, 2001, and 2002).

Another important finding that emerges from Tables 18 and 19 is that the three retail VCCs are small funds by the standards of the venture capital industry. None of the funds raised or invested more than \$20M per year. In 2008, none of the three funds raised more than \$9M; in 2009 none more than \$6M. Even with a 20% expense allowance, these firms have relatively small budgets by the standards of the venture capital industry. Operating a retail venture capital fund involves considerable fixed costs, especially if raising funds from retail investors. While an examination of the cost structure of the retail venture capital funds is beyond the scope of this study, it should be noted that if the downward trend in fundraising continues, there are some important open questions about the viability and cost-effectiveness of operating such small venture capital funds.

**Table 19: Annual investments for Retail Funds**

<b>Retail Fund Investments (in \$million)</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2003- 2009</b>
Advantage Growth Fund	\$ -	\$ 0.50	\$ 2.05	\$ 2.81	\$ 4.92	\$ 3.75	\$ 3.50	\$17.53
Advantage Venture Fund	\$ -	\$ 2.53	\$ 8.86	\$ 7.43	\$ 7.41	\$15.44	\$ 4.70	\$46.38
BC Discovery Fund	\$ 1.08	\$ 3.40	\$10.88	\$ 5.76	\$ 8.43	\$11.15	\$ 4.50	\$45.20
Pender Growth Fund	\$ -	\$ 3.92	\$ 6.48	\$ 4.80	\$ 2.65	\$ 3.50	\$ 4.80	\$26.15
Total Invested by Retail VCCs	\$ 1.08	\$10.34	\$28.27	\$20.80	\$23.42	\$33.85	\$17.50	\$135.26
Working Opportunity Fund	\$34.84	\$39.23	\$31.95	\$40.35	\$35.38	\$33.98	\$29.84	\$245.56
Total Invested by all Retail Funds	\$35.92	\$49.57	\$60.22	\$61.15	\$58.80	\$67.83	\$47.34	\$380.82

### 7.3 | Fund returns for retail funds

In this section, we examine the returns of the retail funds at the level of their funds. The objective is to provide an assessment of the investment success of the retail funds by themselves. In this section, we are therefore not yet concerned with the investment success of the individual investors who benefit from the tax credits – we delay that discussion until Section 7.4.

Our returns are reported in terms of holding period returns (i.e. simple “non-annualized” returns over a certain time period). They measure how a \$1 investment would have fared over the time period under consideration. To account for the fact that venture capital concerns long-term investments, our analysis focuses on holding period returns over relatively long time periods. We will report holding period returns net of fund expenses as these can be directly computed from the return statistics of the GlobeAdvisors and Datastream International data.

Table 20 reports the percentage holding period returns of the retail VCCs as well as WOF Growth Series 1 over three different periods, namely January 2007 - December 2009 (3 years); January 2005-December 2009 (5 years); and the period since the inception date of the fund and December 2009 (since inception).

It should be noted that we examine returns at a point in time where many financial markets are in turmoil, especially since the onset of the US financial crisis of 2008. Needless to say, Canadian markets, including the venture capital market, are not immune to these “bearish” market forces.

The last column of Table 20 reports returns of a benchmark, namely the returns for so-called captive venture capital funds, as calculated by the Canadian Venture Capital Association (CVCA). The returns reported by the CVCA are based on the return data of captive (or “evergreen”) venture capital funds. However, the return data published by the CVCA are the gross returns of funds’ portfolio investments. The net returns passed on to investors will be lower because of management fees charged by these funds. To compare the gross-of-management-expenses return of the CVCA to the net-of-management-expenses returns of the retail VCCs and WOF, we subtracted an estimated annual management fee of 3% from the CVCA returns.

The calculation of returns for WOF is complicated by the fact that the funds offered by GrowthWorks mix in a substantial amount of non-venture investments with their investments in WOF. In Table 20 we report the returns for WOF Growth Series 2, one of the more important WOF-based funds. This fund invests not only in WOF but also in Canadian public equities as well as government bonds and liquid assets. For example, in 2009 the WOF Growth Series 2 fund invested 70% in WOF, 7% in bonds and 23% in what boils down to the TSX Composite Index. The percentage of investments of the WOF Growth Series 2 fund in WOF is lower than the 70% figure in 2009, namely 63% in 2008, 48% in 2007, and merely 40% in 2006. The bottom line is that the structure of WOF’s funds makes it difficult to assess the return on WOF’s investment in venture capital.

Table 20 shows that all retail funds posted negative returns over each of the reported holding periods. This means that each of the funds has generated capital losses over the longer term. Note that many of these capital losses have yet to be realized by retail investors as the programs encourage investors to keep their money invested in the funds for a period of 7 years.

Note also that Table 20 does not include holding period returns for the Advantage Life Science Fund, which was discontinued in April 2009. The Advantage Life Science Fund generated a holding period return of +114.5% between November 2003 and April 2009 and hence generated capital gains for its investors.

Table 20 suggests that investments by the retail VCCs have generated lower returns than comparable funds in Canada based on the reported 3-year and 5-year CVCA returns. The exception to this rule is the Advantage Venture Fund, which has performed roughly in line with the CVCA benchmark<sup>3</sup>.

The results of Table 20 form a contrast to the exit analysis of Figure 10 in Section 6.2., where we saw that the retail funds had exit rates that slightly exceed the Canadian average. Theoretically, there are two main reasons why fund returns could be relatively low while exit rates are high. One is that the fund invested at relatively high valuations and therefore did not make

<sup>3</sup>The Advantage Growth Fund was managed by Pender Capital until November 2007, after which BC Advantage took over the management of fund.

a significant return at exit. The other is that fund has high expenses and possibly generous profit sharing for fund managers. While an analysis of the reasons behind the discrepancy between Table 21 and Figure 10 is an important question, it is beyond the scope of this study.

**Table 20: Net Fund Returns of the Retail Funds.**

Venture capital returns in British Columbia over holding periods ending on 31 December 2009 as based on the net asset values of the currently surviving VCC funds and the Working Opportunity Fund. Calculations are based on data supplied by GlobeAdvisors (Fund data), Datastream International (S&P-TSX Venture Composite Index), and the Canadian Venture Capital Association (Captive VC fund return).

Fund returns	Adv. Growth	Adv. Venture	BC Discovery	Pender Growth	WOF Growth S2	CVCA*
3 years	-47.3%	-10.9%	-20.9%	-18.3%	-17.7%	-17.7%
5 years	-57.2%	-23.6%	-24.7%	-35.3%	-11.1%	-19.3%
Since inception	-57.2%	-23.6%	-30.6%	-35.5%	-15.1%	N/A
Inception date	Jul 2003	Nov 2002	Jan 2003	Aug 2003	Aug 2003	N/A
Years since inception	6.50	7.17	6.80	6.38	6.33	N/A

\* Based on Canadian Venture Capital Association performance data for Captive VC funds (assuming a 3% MER for the funds).

## 7.4 | Investor returns for retail funds

In this section we estimate the returns of individuals who invested in retail funds and obtained a tax credit for it. There are two important reasons that the return realized by retail investors differs from the fund returns described in Table 21. First, investors invest in the funds through a broker who charges a broker fee. Retail investors typically pay a minimum upfront broker fee of 5%. Second, investors in the funds supported by the program obtain their 30% tax credit.

We estimate the holding period return of program investors by combining the fund return statistics with these two factors. Specifically, we assume that the broker fee is 5% and that it is paid at the time the investment is made. The remaining 95% of the invested funds are assumed to deliver a return which is taken from the respective retail fund as reported in Table 21. The 30% tax credit is assumed to be received one year after the investment and is assumed to yield an annual return of 4% over the remainder of the applicable holding period.

The holding period returns for program investors are reported in Table 21. The table shows returns over two long-term horizons, namely January 2005-December 2009 (5 years); and the period since the inception date of the fund and December 2009 (since inception). The focus on a longer horizon is appropriate as the program encourages investors to lock up their investments for a period of at least 7 years.

In the last three columns we report returns of three benchmarks. We again report the captive venture capital returns already discussed in Section 7.3. In addition, we report index returns for the S&P-TSX Composite Index and the S&P-TSX Venture Composite Index. Clearly these two indices represent public market returns that are not directly comparable to the private investments made by retail funds. However, unlike the analysis of Section 7.3, which focused on the relative performance of the retail funds themselves, we are mainly interested in the attractiveness of investing in retail funds from the perspective of the individual small investor. Those investors face a portfolio choice of allocating their wealth into a variety of asset classes. We therefore follow the standard approach in finance of comparing the returns from investments against a set of stock market indices. A comparison of investor returns against the TSX Composite Index answers the question of how the individual investors would have fared if they had invested in a broadly diversified Canadian stock portfolio, the TSX Venture Composite Index if they had invested in a higher risk small stock portfolio. Intuitively speaking, investors may well consider investments in the TSX Venture as a relatively close substitute for investments in the retail funds.

Table 21 reveals that retail investors who invested in Advantage Venture, BC Discovery and WOF Growth realized a positive holding period return despite the relatively poor returns realized by these funds as reported in Table 20. This underscores the fact that taking into account the 30% tax credit substantially increases the attractiveness of investing in retail funds. At the same time, we observe that in the longer run, investments in any of the retail funds do not achieve higher returns than an investment portfolio consisting of the TSX or TSX Venture.

**Table 21: Net Returns of VCP Investors in Retail Funds**

Holding period returns (HPRs) over the period ending on 31 December 2009 of the currently surviving VCC funds and the Working Opportunity Fund. Calculations are based on data supplied by GlobeAdvisors (Fund data), Datastream International (S&P-TSX Venture Composite Index), and the Canadian Venture Capital Association (Captive VC fund return). HPRs incorporate an assumed 5% front end load fee charged by the broker and a 30% tax credit. The 30% tax credit is assumed to be received 1 year from the investment date, and to yield an annual return of +4%

Investor returns	Adv. Growth	Adv. Venture	BC Discovery	Pender Growth	WOF Growth S2	CVCA*	TSX	TSX Venture
5 years	-24.24%	7.68%	6.62%	-3.44%	19.58%	-19.31%	27.03%	-16.69%
Since inception	-22.11%	10.79%	3.59%	-1.68%	17.59%	N/A	39.4% to 58.9%*	22.6% to 61.6%*
Inception date	Jul 2003	Nov 2002	Jan 2003	Aug 2003	Aug 2003	N/A	Nov'02– Aug'03	Nov'02– Aug'03
Years since inception	6.50	7.17	6.80	6.38	6.33	N/A	6.33 to 7.17	6.33 to 7.17

\* Worst possible and best possible holding period return of the Index with purchase moment between mid November 2002 and mid August 2003.

\*\* Based on Canadian Venture Capital Association performance data for Captive VC funds (assuming a 3% MER for the funds).

## 8 | Program Feedback from Stakeholders

The prime objective of this study is an evaluation of the economic performance of the companies in the BC venture capital program. As a byproduct of our investigation, we also obtained some preliminary feedback on other aspects of the program. In this section, we briefly summarize additional qualitative feedback on the VCP that was received through the survey as well as during interviews with program stakeholders, mainly company managers, but also investors.

Overall satisfaction with the VCP is very high with positive comments on its ease of administration, effectiveness and accessibility. In terms of registration, application and program components, the feedback from companies was very positive. Over 80% said they were aided by program personnel and that the program was easy to understand and complete. Over 70% of respondents indicated that their cost to apply and comply with the program was less than \$5,000, indicating a low cost of administration.

Many stakeholders would like to see an increased budget for the program. Some representative suggestions are:

*"I would like to see it expanded. Huge benefit to companies and the economy as it de-risks new investment dollars which allows investors to invest more. This money is used to hire people and expand markets."*

*"Triple the budget for Eligible Businesses. The economic multiplier would be wonderful for the province."*

The survey inquired about the importance of so-called investment caps i.e., upper limits on the amounts companies can raise in the program, currently \$5M over a company's lifetime. The majority of survey respondents indicated that \$5M was adequate for their current investment requirements. However, 12% of respondents reported that the annual cap on total tax credits had limited their ability to raise funds. These companies indicated that they were unable to utilize the program when annual allocations were reached. They noted that this does not occur every year and that this issue was more important in times when the economy was strong. Some respondents reported having a committed investor and then being unable to secure investment as the allocation had expired.

A representative comment for companies unaffected by the caps is:

*"\$5 million is a good cap to give more companies access to the pool."*

Respondents affected by the caps made the following comments:

*"We have raised almost \$3.7M under the EBC program. Increasing the cap would improve our ability to raise funds in the future."*

*"This year we need to raise additional \$12 million and we have already reached our cap. It will be much more difficult to raise the funds."*

The survey also inquired whether companies had encountered any difficulties with the limitation that individuals can invest no more than \$200K per year within the program. 20% of survey respondents reported that some of their individual investors had reached the \$200K limit. 43% of those respondents (9% in total) indicated that they could have raised additional investment from the same investor if the threshold had been higher.

Survey respondents also made some suggestions for the website and user interface. All appreciated the ability to file online and support upgrades to the system. The following are representative examples of feedback about the online system:

*"Reducing the number of system logins required to interact with the program (currently you need to maintain 3 separate sets of login credentials)."*

*"Easier web site access - EBC website is difficult to navigate & log into. The online process has still got some bugs and is not as user friendly as it might be."*

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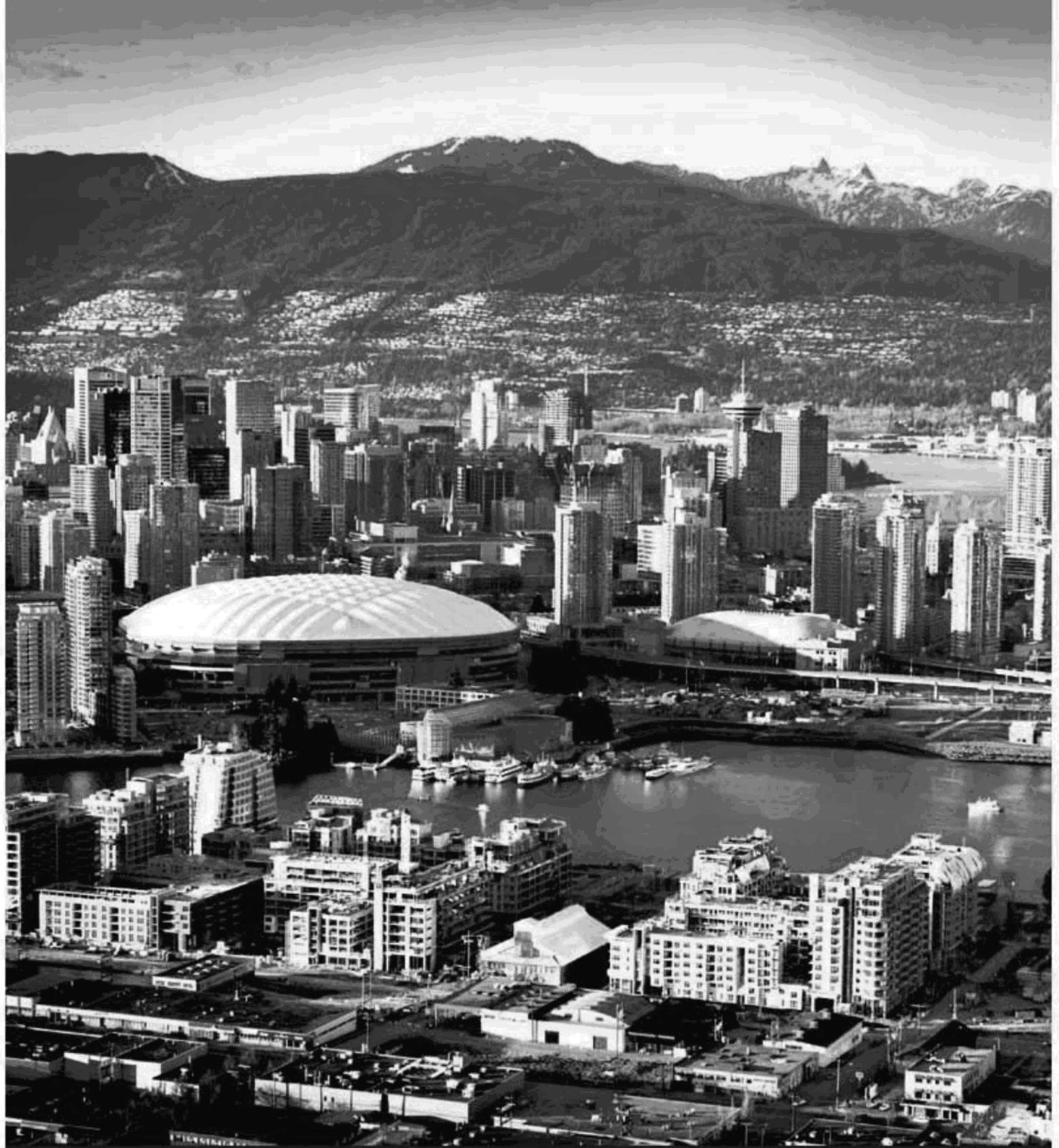
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## Appendices

The appendix contains a copy of the company survey, and three case studies on Aspreva Pharmaceuticals Corp., Clevest Solutions Inc. and Endurance Wind Power Inc..



Ministry of  
Small Business,  
Technology and  
Economic Development

**MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES**

**BRIEFING NOTE**

Ref: 98351

Date: June 21, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister  
**FOR INFORMATION**

**TOPIC:**

Media Reports of the US Government's National Electronic Surveillance Program, PRISM

II **ISSUE:**

Steps the Province has taken to ensure our data is protected from the PRISM program.

III **BACKGROUND:**

In recent weeks, the extent of the US Government National Security Agency's (NSA) clandestine national security electronic surveillance program (PRISM) was revealed in the news media. Like many other organizations around the world, concern over the confidentiality of our government's information was raised by these revelations.

Through the Freedom of Information and Protection of Privacy Act, B.C. prohibits the storage of personal information outside Canada.

In 2010, the Deputy to the Premier issued direction that all employees complete mandatory Privacy and Information Sharing training. To date, 65 per cent of government employees have completed the training. The Legislation, Privacy and Policy Branch provides quarterly updates to ministries and works with them to improve completion rates and tailor the training to their specific needs. This training is part of a larger Security Awareness Program.

Social Media Guidelines were established in October 2010 to guide government employees in the responsible use of social media for government business, including information protection.

Protection of sensitive government information is also governed by government policy. Protections include exclusively using the corporate email system when conducting government business and not transmitting unencrypted sensitive information across the Internet.

The B.C. Government's Security Program includes perimeter controls and access controls to prevent unauthorized access to government data. Ministries are also provided guidance on how to minimize risks through the mandatory Security Threat and Risk Assessment and the Privacy Impact Assessment programs.

IV **DISCUSSION:**

Government's best protection for all sensitive and personal information is restricting our data storage to our data centres in Calgary and Kamloops. Combined with the remediation of the transmission lines, and our policy and legal framework, we are protected to a significant extent from unwanted exposure of our information.

The NSA is extremely well funded and has the capability to execute the most sophisticated types of surveillance. Some risk of exposure of our information may exist.

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S. 15 y programs such as PRISM, or equally well-funded and sophisticated attacks from other nation-state parties S. 16

It is both very difficult and very expensive to reduce risk to near zero, especially against the massive resources and sophistication of organizations such as those mentioned above.

## V CONCLUSION:

### Suggested Response:

- B.C. is a recognized national leader in privacy protection.
- B.C. has legislation, policy, programs and technical controls in place to protect the sensitive information in its custody and control.
- Personal and sensitive information held by B.C. is stored in Canadian data centres.
- B.C. has a proactive Security Awareness Program for government employees to educate them on good practices in information protection.
- Achieving a near-zero risk position is very difficult and very expensive. A risk-based approach is used to identify and implement reasonable controls and protection.
- An approval process and usage guidelines ensure Government's use of social media forums is managed appropriately and that sensitive and personal information is not put at risk.

### PREPARED BY:

Margaret Patton  
Director, Investigations & Forensics  
Information Security Branch  
250 387-5931

### REVIEWED BY:

Ian Bailey  
A/Chief Information Security Officer  
Office of the Chief Information Officer

*Reviewed  
by IB*

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Bette-Jo Hughes  
Associate Deputy Minister and  
Government Chief Information Officer  
Office of the Chief Information Officer

*Reviewed  
by BJH*

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John Jacobson  
Deputy Minister  
Ministry of Technology, Innovation  
and Citizens' Services

*Reviewed  
by JJ*

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## MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

### BRIEFING NOTE

Ref: 98363

Date: June 25, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister

#### **FOR INFORMATION**

**TOPIC:** Riverview Lands in Coquitlam

II **ISSUE:**

The Riverview Lands (the Lands) is a 244-acre site in suburban Vancouver that was home to Riverview Hospital (the Hospital) for almost a century. The Hospital closed in September 2012 and the vast majority of the buildings on the site are now vacant. BC Housing was assigned responsibility for long planning for the future use of the site in 2008. Shared Services BC (SSBC) continues to own and manage the remaining operations at the site. There is a \$3.1 million annual operating deficit for the site.

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III **BACKGROUND/DISCUSSION:**

#### **Holding Activities/Current**

The Riverview Lands cover 244-acres and include 75 buildings comprising 153,640 square metres (1,653,767 square feet) of space, one of the best tree collections in Canada, buildings of historical interest, seven streams, key ecological linkages, and a cemetery. The primary use of Riverview Lands since 1913 has been for mental health care delivery. Provincial Health Services Authority (PHSA) vacated the Lands on September 1, 2012.

With the exit of the Hospital, the main revenue stream available to Shared Services BC (SSBC) has ended. SSBC does not have base budget funding for costs to operate and maintain the site.

Remaining tenants on the Lands include; the Fraser Health Authority; Emergency Health Services Commission; the Ministry of Children and Family Development; the Forensic Psychiatric Services; the Ministry of Justice – Sheriffs; and a number of small non-profit societies. Gross revenue from these tenancies is estimated at about \$1.18 million in 2013/14. These tenancies are now month-to-month or short-term as they may need to be terminated to accommodate future redevelopment of the site.

Portions of the Lands are used regularly for television and movie filming. Gross filming revenue is expected to be approximately \$1.08 million in 2013/14 with aggressive marketing. In addition to the direct revenue received from filming, the BC Film Commission estimates the spinoff benefits to the Province at \$34 million annually. Maintaining filming activity during the decommissioning and renewal period is a priority and is seen as a positive factor by the City of Coquitlam.

SSBC has been actively and aggressively reducing operating costs since the PHSA advised of its intent to vacate October 2011. Operating costs totalled \$7.9 million in 2010/11, \$7.5 million in 2011/12, \$4.92 million in 2012/13 and an estimated 2013/14 amount of \$3.8 million. The largest operating cost on the site is "Operations and Maintenance" and SSBC has provided firm direction

to Brookfield Johnson Controls-WSI to operate within a fixed budget of \$3.8 million with no authority to exceed unless approved by the Assistant Deputy Minister of Integrated Workplace Solutions. Offsetting income from operations on the Lands results in a current annual operating deficit of \$3.1 million. The site is minimally maintained while awaiting the outcome of land use planning activities and direction from government as to the future of the Lands.

The Ministry of Health has accepted responsibility for remediation of environmental contamination of the grounds to an appropriate standard for redevelopment. The PHSA has recently completed a detailed site investigation looking at known areas of environmental contamination and has accrued \$5 million for remediation. The most significant project identified has recently been approved to remediate soil contamination beneath the Transportation Services Building. This project (estimated cost \$2.5 million) is anticipated to start in the summer of 2013.

### **Development Decision/Future**

Following government direction in May 2007 to prepare a development plan, a visioning process, led by SSBC, established a model for development consistent with the direction. The purpose of the plan was to demonstrate to possible options on the site and test the redevelopment model. The next steps were to engage the public in a discussion about the future of the Lands.

BC Housing was assigned the mandate to plan for the future use or renewal of the Lands in 2008. This agreement was reaffirmed by Ministers Rich Coleman and Stephanie Cadieux in the summer of 2011.

The planning process will take a number of years and include: an Official Community Plan amendment; rezoning; and subdivision of the land, once a feasible land use plan and community / stakeholder support is in place. Public perceptions and sensitivities regarding the planning process will be addressed through effective communication strategies and opportunities for meaningful input.

The planning process was paused in 2009 when the City of Coquitlam applied to Parks Canada to have the Lands designated as a national historic site. The provincial government did not support the application, but did commit to undertake a Heritage Conservation Plan (HCP), which was completed in November 2012 with support from the Heritage Branch of the Ministry of Forests and Range, and with BC Housing's agreement and participation. This is a key guiding document for the future land use planning process and provides government with management practices to guide the retention and management of heritage values of the site through effective conservation of the Lands' character-defining elements. The HCP is also intended to ensure that community heritage values remain intact as land use changes occur as a result of future land use planning.

First Nations consultations regarding the future of the Lands were assigned to BC Housing in the spring of 2008. BC Housing is preparing preliminary work such as First Nation Consultation, Traditional Land Use Study and an Archaeological Overview Assessment. BC Housing prepared a protocol agreement and shared it with Kwikwetlem First Nation. The agreement is intended to recognize that Kwikwetlem First Nation has interest in the Lands.

Building demolition costs are to be funded through revenues from redevelopment of the site. An estimate of the full demolition costs is not expected to be available until a land use plan is completed for government's consideration in early 2015/16, although it may be possible to make some demolition decisions before that time.

IV **CONCLUSION:**

SSBC will continue to manage the remaining operations at the site and BC Housing will continue to lead the long run planning process for the Lands until such time the S. 13, S. 12  
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S. 12, S. 13 SSBC is assuming an operating deficit of  
\$3.1 million annually with no source of funds.

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**PREPARED BY:**

Charles Chan  
Real Estate Manager  
Real Estate Services  
604-660-4379

**REVIEWED BY:**

Michael Blaschuk  
Acting Assistant Deputy Minister  
Integrated Workplace Solutions

*Reviewed  
by MB*

Sarf Ahmed  
Associate Deputy Minister  
Citizens' Services

John Jacobson  
Deputy Minister  
Ministry of Technology, Innovation and  
Citizens' Services



# APPROVAL SLIP

<b>PROGRAM AREA: (Start Date)</b>	<b>July 4, 2013</b>
<b>*Associate DM or ADM OFFICE:</b>	<b>July 11, 2013</b>
<b>*Associate DM or ADM OFFICE:</b>	<b>July 12 2013</b>
<b>*DM OFFICE:</b>	<b>2013</b>
<b>*MINISTER'S OFFICE</b>	<b>2013</b>

*Document For:*  
*Minister*

*Document Type:*  
*IBN*

**CLIFF #:** 98372

**Subject:** Re: S.U.C.C.E.S.S

**Branch Contact:** Seanna

**Branch Phone #:** 2-7983

Date Sent/Received	Approvals	Final Approval (Initials)	Date Approved	Approval Comments
July 10	<b>Program Area - Drafter:</b> Brooke Hayes/Kailee Douglas	<i>[Signature]</i>	July 10/13	
	<b>Manager or Director:</b>			
	<b>Executive Director:</b>			
	<b>Finance Office within ADM office:</b>			
July 10	<b>Manager of Operations:</b> Tara Cameron	TC	July 16/13	
	<b>Associate DM or ADM OFFICE:</b> Bobbi Plecas (*Build in two full days for approval)	BP	July 16/13	
July 17	<b>Associate DM or ADM OFFICE:</b> Sarf Ahmed (*Build in two full days for approval)			
	<b>DM OFFICE - Deputy Minister:</b> John Jacobson (*Build in two full days for approval)			
	<b>GCPE - Communications Director:</b>			
	<b>Minister's Office:</b> Honourable Andrew Wilkinson (*Build in three full days for approval)			

Special instructions and or comments, including special rush or approval instructions etc.





# MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

## BRIEFING NOTE

Ref: 98372

Date: July 16, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister

### FOR INFORMATION

**TOPIC:** Meeting with S.U.C.C.E.S.S.

II **ISSUE:** Request for Minister meeting with S.U.C.C.E.S.S. Board of Directors and CEO.

III **BACKGROUND:**

A letter dated June 11, 2013 initiated a request for a minister meeting with S.U.C.C.E.S.S., the purpose of which is to discuss the improvement of service delivery to the B.C. immigrant community. S.U.C.C.E.S.S. was established in 1973 as a non-profit charitable organization to provide services in immigrant settlement, health and housing.

IV **DISCUSSION:**

In 2011/12 provincial funding accounted for 61.5 per cent of S.U.C.C.E.S.S.'s revenue. In that fiscal year, approximately \$13 M was transferred to S.U.C.C.E.S.S. through agreements with the ministries of Advanced Education; Children and Family Development; Jobs, Tourism and Innovation; Justice; and Social Development.

This funding helps to provide services in settlement, English as a second language training, non-profit housing, counseling, and community development.

In 2011/12, the S.U.C.C.E.S.S. Multi-Level Care Society received \$0.45 M from the Ministry of Social Development for its programs. The S.U.C.C.E.S.S. Multi-Level Care Society has been accredited by Accreditation Canada for three consecutive terms and provides health services such as residential care and assisted living.

Additional subsidiaries of S.U.C.C.E.S.S. are the S.U.C.C.E.S.S. Foundation for raising funds, the S.U.C.C.E.S.S. Housing Society for the provision of low-income housing, and Canada Social Enterprise Inc. for offering vocational training to new immigrants.

TABLE 1: Provincial funding to S.U.C.C.E.S.S. by ministry in 2011/12.

Ministry	Transfers
Advanced Education	\$ 170,071
Children & Family Development	\$ 384,242
Jobs, Tourism & Innovation	\$ 7,575,704
Justice	\$ 39,532
Social Development	\$ 4,790,977
Total	\$ 12,960,526

Source: *Public Accounts 2011/12*. [www.fin.gov.bc.ca/ocq/pa/11\\_12/CRF%20Detailed%20Scheds%20of%20Payments%2011-12.pdf](http://www.fin.gov.bc.ca/ocq/pa/11_12/CRF%20Detailed%20Scheds%20of%20Payments%2011-12.pdf)

S.U.C.C.E.S.S.'s Business Immigrant Integrated Support (BIIS) Program is the first provincially-funded program in Canada to help immigrants start their own business. BIIS is currently funded by the Ministry of Jobs, Tourism, and Skills Training. Its objective is to accelerate the settlement and economic integration process of entrepreneurial immigrants.

S.U.C.C.E.S.S. was represented at the leadership council for the Government Non Profit Initiative (GNPI) until June, 2012. The GNPI leadership council composition is 50 per cent non-profit, and 50 per cent government, typically at the senior management level (DMs for government, CEOs/EDs for non-profit organizations). S.U.C.C.E.S.S. is not a member of any of the active working groups of GNPI.

V **CONCLUSION:**

- The Province has a shared interest in the improvement of service delivery to the immigrant community of B.C. in the areas of settlement, health and housing.
- The Province currently supports shared interests through approximately \$13 M of funding for programs including BIIS.
- S.U.C.C.E.S.S. was represented on the GNPI leadership council until June, 2012.

**PREPARED BY:**

Kailee Douglas  
Project Administrator  
Logistics & Business Services  
778 977-5245

**REVIEWED BY:**

Bobbi Plecas  
Assistant Deputy Minister  
Logistics & Business Services



John Jacobson  
Deputy Minister  
Ministry of Technology, Innovation and  
Citizens' Services

# MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

## BRIEFING NOTE

Ref: 98425

Date: July 10, 2013

I **PREPARED FOR:** The Honourable Andrew Wilkinson, Minister

### FOR INFORMATION

**TOPIC:** BC Association of Institutes & Universities (BCAIU)

**ISSUE:** The President has indicated the BCAIU's interest in discussing issues regarding:

- 1) Commercialization Voucher Program
- 2) PACE Research

## II **BACKGROUND:**

On June 26, 2013, the President of the BC Association of Institutes & Universities (BCAIU), Ruth Wittenberg, wrote a letter to Minister Wilkinson (see Attachments A and B) to raise the issues around the Commercialization Voucher Program and the provincial government access to research (see Attachment C).

The BCAIU is funded by member institutions, which account for over 40 per cent of the students attending public post-secondary institutions in the province. BCAIU member institutions provide a wide-range of developmental, vocational, academic and continuing education programs, preparatory and vocational through graduate degrees.

The BCAIU represents the interests of province's three public institutes and five of the province's eight teaching-intensive universities in British Columbia.

- BC Institute of Technology
- Capilano University
- Justice Institute of British Columbia
- Emily Carr University of Art + Design
- Kwantlen Polytechnic University
- Nicola Valley Institute of Technology
- University of the Fraser Valley
- Vancouver Island University

## III **DISCUSSION:**

### Commercialization Voucher Program

Background	Suggested Response
The previous criterion for the pilot voucher program excluded colleges and teaching universities from participation.	As suggested by the BCAIU, the new Commercialization Voucher program will be open to all graduate students at BC post-secondary institutions.
During the summer and fall of 2011 and 2012, BCAIU wrote to Minister's Bell and Falcon regarding the Commercialization Voucher Program, and the	The funding being used has restrictions that were put in place by the Leading Edge Endowment Fund (LEEF) board as part of the winding-up of that organization and

<p>fact that the criteria for qualification resulted in only the research based Universities to be entitled to apply for funding.</p> <p>The BCAIU suggests that a review of the program and the requirement for qualification are undertaken, so that institutions such as those in BCAIU and other post-secondary institutions in BC can submit proposals and further advance innovation and commercialization in BC.</p>	<p>transfer of funds to BCIC for the Voucher program. These restrictions guide the design and policies of the program (funding is to attract and retain graduate students).</p>
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## PACE Research

Background	Suggested Response
<p>The term PACE research has been coined by the BCAIU in an attempt to capture all their research under one umbrella term. PACE stands for Partnered, Applied &amp; Community Engaged research:</p> <ul style="list-style-type: none"> <li>• Partnered: stakeholder partners directly involved with the research, whether that is an industrial, not-for-profit or public sector partner;</li> <li>• Applied: relates to the application of existing technology, policy or ideas to a specific issue. Very little of the research is considered basic research and much of it is not published or publishable in peer-reviewed journals, because that is not why the research is conducted. Most of it is intended to resolve a specific practical problem, not to increase the academic knowledge base (although that may be an outcome); and</li> <li>• Community Engaged: it is of practical value to the broad community, whether that is because it deals with a local issue or assists a business to grow or change, or contributes to community development or well-being in some other way.</li> </ul> <p>Barriers to PACE research that BCAIU would like to have addressed by the provincial government include:</p> <ol style="list-style-type: none"> <li>a) <u>Faculty contracts</u> (flexibility, release time) – current contracts imply that research does not contribute to teaching;</li> <li>b) <u>Provincial regulations regarding risk management</u> (external contributors must accept unlimited liability for the use of their</li> </ol>	<p>The BC Association of Institutes and Universities (BCAIU) makes significant contributions in meeting the province's labour market needs and to the province's economy.</p> <p>The major factors under control of the provincial government that limit PACE research are inflexibility in faculty contracts and in the funding of the research.</p> <ol style="list-style-type: none"> <li>a) <u>Faculty contracts:</u> The public policy requirements for collective bargaining outline the following provisions: <ul style="list-style-type: none"> <li>• Faculty instructional workload cannot be reduced or otherwise converted to non-instructional duties.</li> <li>• Faculty research time cannot in itself attract compensation in that it cannot be assigned as part of a faculty employee's workload in place of some or all of the employee's instructional or instructional-equivalent duties.</li> </ul> </li> </ol> <p>One of the conditions of the new universities obtaining university status was that they not negotiate collective agreements that reduce workloads for instructors/faculty in order to accommodate research time.</p> <ol style="list-style-type: none"> <li>b) <u>Provincial regulations regarding risk management:</u> It is unclear as to which program area this is referring to (the BC Innovation Council funds, the BC Innovative Clean Energy Fund or the BC Knowledge Development</li> </ol>

<p>contributions);</p> <p>c) <u>Prohibitions on institutions regarding deficits</u> (limits multi-year projects and are inappropriate in that provincial operating grants are not the sole funding sources of institutions);</p> <p>d) <u>Lack of provincial funding</u> – creation of a matching fund is proposed.</p>	<p>Fund. We would like to work with your staff to understand which regulations in each program area are barriers to participation.</p> <p>c) <u>Prohibitions on institutions regarding deficits:</u></p> <p>Financial accountabilities outlined in the Colleges and Institutes Act and University Act were clarified in December 2009 to ensure post-secondary institutions (PSIs) remain in an annual balanced or surplus financial position (no deficits). While this improved the Province's ability to manage impacts to its Fiscal Plan, it has restricted institutions' access to accumulated prior year surplus and constrained their ability to plan for long-term sustainability.</p> <p>The primary reasons for the no deficit clarification were to align PSI fiscal management and accountability with government's; preserve BC's credit rating; and ensure the Province's limited resources were maximized and available to spend on programs and priorities such as health and education.</p> <p>d) <u>Lack of provincial funding:</u></p> <p>The government's expectations of institutions with respect to research are set out in the relevant legislation. AVED does not discourage BCAIU institutions from undertaking applied research; however, other than the British Columbia Knowledge Development Fund (which is restricted to capital funding), AVED does not have any programs to support research.</p> <p>The Technology Strategy emphasizes the use of industry partnerships for all research funding, especially for applied research where there is clear focus is on commercialization.</p> <p>In addition, in the past, colleges and teaching universities have had difficulty raising matching funds required under government supported research programs (for example matching funds for Leading Edge Endowment Fund Regional Innovation Chairs).</p> <p>We recognize the importance of the applied research that most of our post-secondary institutions undertake. It is also important to note that the primary mandate of the teaching-intensive universities and institutes represented by BCAIU is to deliver the post-secondary education and training programs that British Columbians need to be successful in the labour market.</p>
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#### IV CONCLUSION:

##### **Suggested Response:**

- I appreciate the important role teaching universities and institutes play in ensuring we have the educated and skilled individuals British Columbia needs.
- I look forward to talking with you more how we can work together to advance our respective priorities.
- Attachments:
  - Attachment A: BCAIU – Letter to Minister Wilkinson
  - Attachment B: BCAIU – President and Chair of the Board Bios
  - Attachment C: BCAIU – PACE Research paper (January 2013)

##### **PREPARED BY:**

Naomi Pope  
Director  
Technology & innovation Branch  
250 387-6157

##### **REVIEWED BY:**

Kevin Butterworth  
Executive Director  
Technology & Innovation Branch

***Reviewed  
by KB***

John Jacobson  
Deputy Minister  
Ministry of Technology, Innovation and  
Citizen's Services

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***Reviewed  
by JJ***

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June 26, 2013

Honourable Andrew Wilkinson  
Minister of Technology, Innovation and Citizens' Services  
PO Box 9068  
Stn Prov Govt  
Victoria BC, V8W9E2

Dear Minister Wilkinson,

Re Ministerial Accountability Letter

Minister, please accept on behalf of the BC Association of Institutes & Universities our congratulations on your appointment as Minister of Technology, Innovation and Citizen's Services.

Together, BCAIU accounts for over 40 percent of the students attending public post-secondary in BC. We offer a compelling approach to learning by integrating teaching excellence, internship and co-op work experience. Attached is a brochure that provides further details on our association members.

While there is no dispute about the importance of post-secondary education and training, there is little agreement about how to get the most from the system, especially in this difficult fiscal environment. Research is an essential element of quality teaching and learning, and BCAIU members and other teaching intensive degree granting post-secondary institutions have a history of conducting research in partnership with industry that is primarily applied research and scholarly activity that engages with the community. Attached for your information is a section of our recently released white paper specifically focused on the value of research and scholarly activity (Partnered, Applied & Community Engaged – PACE).

There are barriers to our institutions achieving their full potential in PACE research that fall under control of the provincial government. PACE research is primarily funded by federal granting agencies or private, First Nation and local government contributions; \$80 million worth from 2002 through 2012. The provincial government currently provides almost no funding but regulates the same. For risk management reasons, the provincial government requires external contributors to accept unlimited liability for the use of their contribution, a requirement that many potential private contributors view as unfair and inappropriate, and results in limited contributions. Addressing this risk management requirement in a fairer and more constructive way would remove this barrier and help to meet goal seven of your Ministerial accountability



statement; to work with post-secondary institutions to ensure that more of the innovative ideas created on campus become successful commercial ventures.

During the summer and fall of 2011 and 2012, we wrote to Minister's Bell and Falcon regarding the Commercialization Voucher Program, and the fact that the criteria for qualification resulted in only the research based Universities to be entitled to apply for funding. The correspondence between government and ourselves over the course over those two years is attached for your reference. In order to assist in meeting goal seven of your Ministerial accountability statement, we respectfully suggest that a review of the program and the requirement for qualification undertaken, so that institutions such as those in BCAIU and other post-secondary institutions in BC can submit proposals and further advance innovation and commercialization in BC.

We look forward to working with you and your Ministry officials on our mutual goals, and we have contacted your office requesting to meet with you at your earliest convenience.

Yours very truly,

A handwritten signature in black ink, appearing to be 'RW' with a long horizontal stroke extending to the right.

Ruth Wittenberg, President

Cc:

Dr. Mark Evered

BCAIU Board Chair

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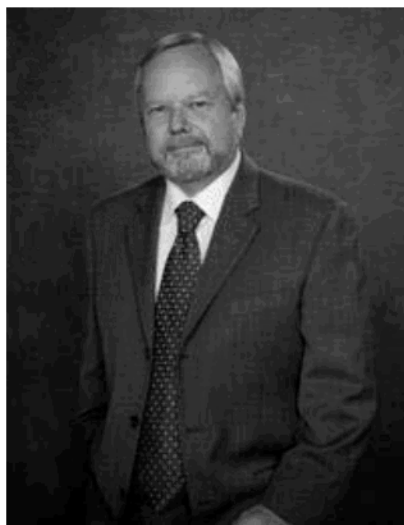


Ruth Wittenberg [ruth.wittenberg@ufv.ca](mailto:ruth.wittenberg@ufv.ca) 250.940.1142

Ruth Wittenberg was appointed President of the BC Association of Institutes + Universities in January 2010. This Association represents a group of public post-secondary institutions that offer a range of post-secondary education, ranging from trades and technical training to masters degrees in specialty areas. The role of the President is to provide counsel to members on strategies and approaches to government to represent members points of view on policy, legislation, or other actions; coordinate research and develop information material to support members views, or as a response to government requests; forecast and evaluate the effects of public policy on members and keep them informed of developments.

Ms. Wittenberg has a BA from the University of Victoria (1979).

Prior to her current position, Ms. Wittenberg was employed by the British Columbia Public Service from 1981 until she assumed the role of the BC Association of Institutes + Universities President. Ms. Wittenberg has held positions in the Ministry of Advanced Education and Labour Market Development (Assistant Deputy Minister, Post Secondary Education Division), Ministry of Education (Assistant Deputy Minister, Management Services Division), the Ministry of Human Resources (Assistant Deputy Minister, Financial and Administrative Services), the Ministry of Finance (Chief Information Officer), the Ministry of Transportation (Manager, Financial Systems and Policy), and at Treasury Board Staff (analyst).



Dr. Mark Evered

Dr. Mark Evered began his term as President and Vice-Chancellor of the University of the Fraser Valley (UFV) on July 1, 2009. He came to UFV from Thompson Rivers University in Kamloops, BC, where he served as provost and vice-president academic. Prior to his move to TRU (then University College of the Cariboo) in 2004, Dr. Evered held the position of associate vice president academic at the University of Saskatchewan, where he was also appointed that university's first vice-provost.

Dr. Evered holds a BSc in biology from McMaster University and a PhD in physiology from the University of Western Ontario. Over the course of his 30-year career, he has held research and academic appointments at Cambridge University, the University of Western Ontario, the Howard Florey Research Institute in Melbourne, and the University of Saskatchewan. He has taught undergraduate and graduate students in a variety of science and health disciplines, supervised M.Sc. and Ph.D. thesis projects, and received a number of teaching awards, including the University of Saskatchewan Master Teacher award. Dr. Evered has also held a variety of academic administrative appointments and served on many university committees and governance bodies. Throughout his career, he has maintained an active research program, presenting his work nationally and internationally, and publishing broadly.

# PACE Research Paper

## Issue

Research is an essential element of quality teaching and learning. This principle is understood and reflected in public policy related to universities worldwide, including BC's research-intensive universities.

BCAIU members and other teaching-intensive degree granting post-secondary institutions have a history of conducting research in partnership with industry that is primarily applied research and scholarly activity that engages with the community. Nevertheless, the provincial government has a longstanding concern that increased research by teaching-intensive degree granting institutions will increase cost and reduce efficiency in providing post-secondary education.

As a result, there are several barriers that limit the conduct of research outside research-intensive universities, to the detriment of the education provided to students and ultimately of participation.

## Background

### Research at BC Post-Secondary Institutions

Scholarly activity and research is a key element of the traditional university model of post-secondary education and of faculty development. The linkage between undergraduate degree-granting ability and scholarly activity and research has evolved and been maintained globally because research is essential to post-secondary teaching. Teaching and research are linked in several ways, including:

- faculty only remain current in their field and effective in imparting knowledge if they engage in research;
- students must engage in and be exposed to research to gain the most valuable skills post-secondary education can impart, the skills associated with inquiry, independent and critical thought and the ability to find, analyze, and communicate relevant information; and
- in the case of applied research, the research in effect becomes the classroom – the distinction between research and learning thus becomes blurred

BC's traditional universities, now referred to as research-intensive universities, have always had a twin focus on research and teaching, with the research enterprise focused on both basic and applied research and with the research most closely tied, from an education perspective, to post-graduate studies. In those universities, as in universities throughout the world, it remains a requirement that faculty conduct and publish academic research as part of their job responsibilities. Promotion, in particular, is usually related to publication quantity and quality.

In BC, there have been degree-granting institutions with varying levels of "research" mandate for many decades, ranging from research being discouraged in the former university colleges to acceptance of applied research mandates at BCIT and ECUA+D.

BCIT has a longstanding explicit expectation that applied research will be undertaken in all of its fields based on its role as BC's first technology focused post-secondary institution. ECUA+D has been solely a degree granting institution for decades and the importance of research at ECUA+D is recognized through an explicit requirement in its collective agreement that faculty engage in research.

The former university colleges did not originally have a mandate to engage in research although they have always engaged in research to some extent. They have now transformed into universities with a teaching focus and now a statutory research mandate. In implementing this transformation, there has been no change to the degree to which research is accepted or encouraged at these universities. This despite the fact that these institutions all have Canada Research Chairs, meeting the same standards for excellence as research universities.

Nevertheless, there is increasing research activity at BCAIU institutions, most of which is Partnered, Applied and Community Engaged (PACE Research). PACE Research is:

- Partnered in the sense that there are stakeholder partners directly involved with the research, whether that is an industrial, not-for-profit or public sector partner;
- Applied because it relates to the application of existing technology, policy or ideas to a specific issue. Very little of the research is considered basic research and much of it is not published or publishable in peer-reviewed journals, because that is not why the research is conducted. Most of it is intended to resolve a specific practical problem, not to increase the academic knowledge base (although that may be an outcome); and
- Community Engaged because it is of practical value to the broad community, whether that is because it deals with a local issue or assists a business to grow or change, or contributes to community development or well-being in some other way.

There are many kinds of projects that fall into the PACE research area, including research supported by:

- Grants from the major granting agencies;
- One or more of the three levels of government through other mechanisms; and
- Industry or non-governmental organizations through grants or contracts.

There is PACE research undertaken at research-intensive universities and much of the PACE research undertaken by BCAIU members is in collaboration with other institutions, including research-intensive universities. There is also some basic and other research that does not fit the PACE research definition undertaken at BCAIU institutions, but most of that research is undertaken at research-intensive universities. The point is that most of the research conducted by BCAIU members is PACE research.

### **PACE Research, Teaching and Participation**

PACE research has been undertaken by most BCAIU members for decades to a greater or lesser extent and the amount of PACE research is growing. The following table is an estimate of the amount of research undertaken from 2002 to 2011.

### BCAIU PACE Research 2002 to 2012

Institution	BCIC & BCKDF & BC ICE	CFI, GRAND NCE & ICP	Research Councils	Western Economic Divers. (\$ thousands)	Canada Research Chairs	Industry Partners	Other	Total
Emily Carr Institute of Art + Design	1,579	2,671	4,963	1,769	1,500	378	-	12,860
BC Institute of Technology	3,717	1,317	2,321	9,522	100	4,800	1,021	22,798
Vancouver Island University	5,813	7,067	3,978	1,594	1,416	1,225	4,316	25,409
University of the Fraser Valley	1,250	834	1,366	31	3,300	-	3,747	10,528
Kwantlen Polytechnic University	2,227	2,711	1,432	-	-	232	977	7,579
<b>Total</b>	<b>14,586</b>	<b>14,600</b>	<b>14,060</b>	<b>12,916</b>	<b>6,316</b>	<b>6,635</b>	<b>10,061</b>	<b>79,174</b>

**Notes:**

BCIC - BC Innovation Council

BCKDF - BC Knowledge Development Fund

BC ICE - BC Innovative Clean Energy Fund

CFI - Canadian Foundation for Innovation

GRAND NCE - GRAND Network for Centres of Excellence

ICP - Indirect Costs Program

Research Councils - National Research Council of Canada, Natural Science and Engineering Research Council, Social Sciences and Humanities Research Council, Canadian Institutes of Health Research

Other includes, for example: Federal and provincial government departments and agencies, local governments, Hakai Network, International Centre for Criminal Law Reform, UN, UNODC, UNICEF, MCFD, Shastri Institute, Tula Foundation, Victoria Foundation, WorkSafe BC, MSFHR, Canadian Health Food Association, etc.

The primary reason the BCAIU institutions have focused on this type of research is that it improves the teaching enterprise of the institutions.

Students especially benefit in two ways. In the majority of cases, undergraduate students are able to participate in the research through experiential learning. The value to the students in terms of developing critical thinking, an appreciation for the value of contributing to community, enhanced citizenship, job-applicable skills and preparation for post graduate education is significant. In some cases, job opportunities also result. In particular, models for industry partnered research that bring prospective employers into direct contact with students—either through institutionally held research contracts or through research co-ops or internships—provide high quality/low cost opportunities for employee recruitment.

Of course, the same is true for some academic research undertaken by research-intensive universities. Research universities and colleges in BC also engage in PACE research and students involved in that research benefit in the same way. In BCAIU institutions it is primarily undergraduate rather than graduate students who benefit in terms of both employability and preparation for post-graduate education.

BCAIU students also benefit because PACE research helps to ensure that faculty and equipment are current. Research helps to keep faculty and facilities up to date with practices and technology that are current in industry, government, and organizations in various sectors (e.g. health and justice). Research also influences curricula, enhancing currency and leading to further research opportunities in a virtuous cycle. That in turn improves the experience and skills of the students. It also teaches them that they have employable skills acquired in the course of their post-secondary education that are applicable to a number of jobs and career opportunities.

There are also valuable benefits of PACE research in addition to its impact on teaching. By its very nature, PACE research is intended to address a specific problem or issue that is of

interest to an external community and/or partner. That also generates a significant benefit, directly or indirectly for that community.

Applied and community engaged research also benefits the institution itself. It keeps the institution relevant and engaged with the communities that it should be interacting with. It is an important tool in the recruitment of those faculty members who value PACE research as an important part of their jobs.

How does this relate to participation rates? The benefits of PACE research all contribute to satisfying the demand by students for post-secondary education that is interesting and relevant to them from an institution that they recognize as being able to give them what they want. It enhances the capacity of institutions to provide the education being demanded by students and society and supports the delivery of quality education. By showing potential students that post-secondary education is practical, relevant, and enhances employability, PACE research promotes student demand. By supplying well-trained graduates, PACE research stimulates industrial demand for employees with appropriate certification. It also shows the community that the institution and post-secondary education are practical and relevant, and thus motivates parents of first generation university students to encourage their children to go on to post-secondary education.

PACE research is an effective way to align student demand for education and industry demand for skilled labour, increasing participation.

### **Project Examples**

The following brief descriptions of a variety of projects at various institutions demonstrates the diversity and value of PACE research.

#### **BCIT: Map with Wheels**

**Problem:** How to mitigate difficulties of commuting to BCIT by bicycle - finding routes, riding partners, and building community.

**Solution:** The mobile wireless application development team in partnership with the Health Technology Research group is designing a mobile and desktop application that will enable riders to create and share routes with other riders, rate routes, indicate hazards, find riding partners, and get route information while riding - all through a mobile phone

#### **BCIT: The Mobility Program**

The Mobility program is a free service for Seniors, Families and Health Professionals.

Through funding from The Public Health Agency of Canada, BCIT, in collaboration with Weber Shandwick Worldwide, created the Mobility program to educate seniors and their families on the positive benefits of using assistive devices or ADs (such as canes, walkers, etc.) and to address the stigma associated with these devices. Our goal is to help seniors change their mindset about ADs and to provide practical information on AD usage through the use of humour and expert advice.

#### **ECUA+D: Ibeam Project, Spring 2013**

The IBEAM project is a collaborative project between Emily Carr University, The City of Vancouver, and Rogers. The project explores the opportunities of collaboration and connection in design for public spaces.

The objective of this project is to design cellular network sites along the right of way with incorporated public amenities such as electric vehicle chargers. These beneficial amenities designed for the public compliment expanding cellular networks with a conscious and exciting approach.

Thinking towards the future of our urban environment, this project is the first of its kind.

### **ECUA+D: Stereoscopic 3D (S3D) Centre**

Movies have been filmed and also projected at 24 frames per second (fps) since the 1920's. The look of 24fps film has become widely known as the 'cinematic aesthetic'. However, due to the slower shutter in recording frames at this rate, certain motion artifacts such as blur and light strobing are noticeable. Motion artifacts are greatly reduced at higher frame rates (HFR) resulting in a more comfortable viewing experience with hyper-real smoother images.

We are researching not only the benefits of higher frame rates in S3D, but also the effect of variable HFR on aesthetic and immersion in the context of a single narrative. What are the creative benefits/drawbacks of using variable frame rates? Does the use of HFR as a 'tool' in this way change the immersive experience for the viewer? We suspect that the question of whether to use HFR in a stereoscopic 3D film within a narrative context depends largely on the content and creative intent of the film itself. We created the short film "L'Âme Soeur (Soul Mate) 3D" as a means to explore these questions in the context of 3DTV and Cinema.

### **ECUA+D: Health Design Lab (HDL)**

Residential Care Aides are required to move patients (to alleviate bedsores, to move people in bed, help them dress, or to allow transfers to and from a wheelchair, etc.) in residential care facilities across British Columbia. To facilitate this, all residential care beds have ceiling mounted lifting devices. However, many Aides choose to bypass the assistive devices and instead manually lift and move patients to save time. This results in a high rate of injury to the Aides and the resulting expense in benefits and work time lost is staggering – \$8 million dollars a year. Emily Carr's Health Design Lab has been asked by project partner Vancouver Coastal Health to apply design research methodologies to examine the problem and suggest strategies and materials to change this behavior and improve lift compliance rates.

### **VIU: Research and Development of Membrane Introduction Tandem Mass Spectrometry (MIMS-MS/MS) as an On-Line Monitoring Platform for Rapid Environmental and Process Monitoring of Statoil Heavy Oil Extraction Operations**

One of several projects related to the use of mass spectrometry, this project will develop new on-line analytical methods for the real-time analysis for chemical determinants of environmental and human health. The objective of this project is to develop a field portable system for the direct observation and quantification of volatile and semi-volatile compounds in complex environmental samples. This project represents a significant international collaboration between Canadian and Norwegian researchers at VIU and the Norwegian University of Science and Technology and will involve important knowledge mobilization into



the oil and gas industry via implementation at StatoilHydro's operations in Alberta. Significant contributions to research training of highly qualified personnel will be made via graduate and post-doctoral opportunities as well as through personnel at StatoilHydro. We anticipate that the outcomes of this work will contribute to new fundamental knowledge (publications, conference presentations). These results will be adapted to the production and environmental monitoring facilities associated with heavy oil extraction operations, for water and atmospheric monitoring.

#### **VIU: ICR Aquatic Foods Initiative (AFI)**

The Aquatic Foods Initiative is a new Institute of Coastal Research program whose mandate is to: develop strategies that increase the economic, cultural, social and ecological values of BC's aquatic food resources. The initiative will feature: 1) applied and interdisciplinary research; 2) engagement with First Nations and coastal communities, stakeholder groups, industry, government, researchers and others; and 3) a strong emphasis on the relationship between aquatic food resources and the well-being and resilience of coastal social-ecological systems.

#### **VIU: Horne Lake Strategic Planning Project**

This applied research project provides community resource support for the Horne Lake Strategic Planning initiative for the purposes of creating a world-class outdoor education centre emphasizing sustainable growth and development and the creation of a collaborative business enterprise with VIU's Deep Bay Ocean Research Station and Milner Gardens. Initiated in 2010 and enhanced in 2011 as an applied community planning project for a senior undergraduate course (TRMT 470 Community Policy and Planning), this alliance between VIU and the community of Horne Lake is a unique blend of private, not-for profit, and regional, provincial and federal parks management. In 2010-11 and 2011-12, the project utilized 10 senior undergraduates researchers as a research team for the Horne Lake Strategic Planning Initiative.

#### **UFV: Evaluation of NCCP Concussion Learning Modules**

An evaluation of how well the learning modules that comprise the National Coach Certification Program (NCCP) of the Coaching Association of Canada deal with the issue of concussions. The NCCP forms the basis of coach training programs for coaches of all sports in Canada, which are then adapted and applied by the various Canadian sports bodies. The project includes extensive consultation with stakeholder communities, including aboriginal communities since the evaluation will assess the Aboriginal Coaching Module among others. Several students will be involved in the project.

#### **UFV: Problem Oriented Policing: A BC Practitioner's Toolkit**

The initial vision and draft of our student Jason Gelderman's practicum project, *A BC Police Practitioner's Toolkit*, became a provincial resource for RCMP and Municipal police department. Containing a 6-lesson crime prevention guide for in-service training, the toolkit contains PowerPoint decks and handouts designed to reinforce effective policing practices surrounding proven crime prevention initiatives, including Crime Reduction. The strength of the student's initial manual brought additional contributors that included Dr. Darryl Plecas, Sgt. Brian Foote (RCMP), S/Sgt. Phil Eastwood, and Annette Vogt (UFV Centre for Safe

Schools) with a forward from “E” Division Deputy Commissioner Gary Bass. This manual was presented to police departments across British Columbia by the BC Chiefs of Police.

### **UFV: Abbotsford Urban Planning**

Cherie Enns has been working with the city of Abbotsford on two major projects, and in doing so, has involved her upper-level planning courses in applied research and problem-based learning. The primary projects have been:

Working with the city to develop a vision for the Civic Precinct (the area around City Hall). This has included organizing the first Farmers Market for this precinct—a project that has grown legs, as this Farmers Market is now an on-going summer event.

Further, Cherie has worked with the city, UFV administrators, and students to develop a vision for the U-District—a distinct university district that would build on and complement UFV’s role within the community.

### **KPU: Surrey's Underutilized ALR Lands**

In an effort to strengthen internal planning and policy for agriculture, the City of Surrey has partnered with Kwantlen Polytechnic University's Institute for Sustainable Horticulture (ISH) to conduct research aimed at strengthening municipal planning and policy for local, small lot agriculture on underutilized ALR lands in the municipality. The objective is to halt loss of ALR land and enhance local production and consumption. In addition to contributing significant funding, Surrey will participate actively in this research initiative through data sharing, staff involvement, and in consultation with its Agricultural Advisory Committee (AAC).

### **KPU: Acting Together**

Acting Together is a strength-based project aimed at preventing youth gang involvement. The project represents collaboration between academic researchers and community partners. It is federally funded through the Community-University Research Alliance (CURA) award of \$1 million by the Social Sciences and Humanities Research Council (SSHRC) of Canada.

The aim of AT-CURA project is to identify factors that prevent youth from violent and gang-related criminal activities. Using mixed methodology of academic research (Quantitative) and community consultations (Qualitative), the project will provide an evidence-based foundation to create programs to foster the identified preventive factors among youth.

### **KPU: The Centre For Interdisciplinary Research: Community Learning and Engagement (CIR:CLE)**

CIR:CLE has conducted a number of applied evaluations of Safe Schools programs in the Surrey School District. Most recently CIR:CLE evaluated an alternative suspension program offered to first time offenders in the district. CIR:CLE projects provide students in Criminology, Sociology and Psychology the opportunity to develop applied research skills in real world settings.

### **BCAIU Initiative to Enhance PACE Research**

There are several factors that have prevented PACE research from achieving its potential to enhance teaching oriented post-secondary institutions and participation at those institutions. These fall into two categories, barriers that can be addressed by the institutions themselves and barriers that can only be addressed by the provincial government.

The BCAIU institutions have concluded that there is much more they can do and have embarked on an initiative to enhance PACE research both individually and collaboratively while continuing to support more traditional academic research.

The first critical step is to better keep track of and measure the impacts of the research. Different institutions have taken different approaches and collected more or less information. The institutions have decided, as a group, to create a database of applied and community engaged research that will at least answer the following questions:

- How many projects?
- In what academic fields?
- How many faculty?
- How many students?
- How much funding? Including support from institution
- From what sources?
- Industry and community impacts?

The institutions will also measure their capacity to conduct PACE research, and how it changes over time, as well as how that capacity compares with the level of research undertaken.

In addition, the institutions will be collaborating on mechanisms to increase the amount and value of PACE research by, for example, increasing the profile of the research activities and results and developing additional funding sources. Research requires significant institutional infrastructure, such as research ethics boards and research coordination structures that exist to varying degrees at different institutions. BCAIU members will work collaboratively to ensure that infrastructure is efficient and effective across the sector, with BCIT and ECUA+D providing leadership and models for the future, as the most experienced institutions.

### **Provincial Government Barriers to PACE Research**

The major factors under control of the provincial government that limit PACE research are inflexibility in faculty contracts and in the funding of the research.

Faculty collective agreements, except in the case of ECUA+D and UFV, are a barrier to research because research is not adequately recognized. Often faculty can only engage in research if they do it on their own time or if there is a “work-around” like using research funding to buy-out teaching time. In other cases, research is undertaken by non-faculty researchers. These approaches, in turn, make it difficult to involve students in the research, reducing the effectiveness of current research in enhancing teaching. The current contract inflexibility severely limits the ability of most BCAIU institutions to increase PACE research.

PACE research is primarily funded by federal granting agencies or by private, NGO, First Nation and local government contributions, in the nature of donations or contract fee-for-service funding. The provincial government currently provides almost no funding but,

despite having no direct funding incentives, regulates research funding. This imposes two barriers to increasing PACE research.

One significant issue is that the provincial government, for risk management reasons, requires external contributors to accept unlimited liability for the use of their contribution, a requirement that many potential private contributors view as unfair and inappropriate, making such contributions difficult to obtain. It is important and appropriate that contributors accept some liability, but unlimited liability seems excessive and unfair. This issue also limits other, non-research related contributions to the institutions, including contributions of equipment by industry in support of trades training and technology teaching programs.

The second barrier is the strict prohibition on institutions having a deficit. It is reasonable and prudent to ensure that institutions operate within their own fiscal capacity. However, a strict no deficit rule in any year is not the only way to ensure that institutions are prudent and this strict requirement has several unintended consequences that limit efficiency, capacity, research and participation.

Multi-year projects where the funding and expenditure often do not fall in the same fiscal period coupled with revenue recognition rules for contributions that may require revenue to be recognized when received mean that contributions in one period that are spent in another could lead to surpluses and deficits that are not currently allowed to be offset in determining fiscal prudence. With a significant proportion of post-secondary funding now coming from external sources, it is no longer appropriate to regulate all institutional finances as if they were annual provincial operating grants. Post-secondary institutions are now complex organizations with many funding sources and areas of spending, and need the flexibility to use their financial capacity to the best effect, subject to overall living within their fiscal resources. The no deficit requirement, while a significant problem for research, goes well beyond that area to limit efficiency throughout the institution.

## The Alternative

BCAIU's position is that given the teaching and other benefits of PACE research, and BCAIU's efforts to increase the amount of PACE research, BCAIU institutions should be rewarded by policy changes that increase institutional flexibility to engage in this kind of research.

In terms of collective bargaining, the provincial government concern has always been that by recognizing any faculty research activity as work to be compensated, the cost of teaching will increase. This implicitly assumes that PACE research does not contribute to teaching, which BCAIU disputes. In addition, there are many BCAIU faculty members who do not now engage in, and have no future interest in engaging in research. BCAIU does not want faculty who are not now required to engage in research to be forced to do so and BCAIU recognizes the current fiscal constraints. BCAIU's proposal is that they be permitted to negotiate with faculty associations limited and incremental flexibility for a portion of the workforce to engage in PACE research as part of their work. Limitations that ensure that faculty FTE targets continue to be met would ensure this change is fiscally responsible now and in the future.

In terms of the risk management requirements related to contribution and the prohibitions against deficits, BCAIU believes that incremental changes can be made that will continue to protect the overall provincial fiscal position and not impose any additional costs while

providing institutions with needed flexibility, lowering the barriers to increased PACE research.

In addition, given the benefits, the provincial government should consider providing a relatively small matching provincial contribution to support enhanced PACE research. By matching a portion of funding raised from other sources, those institutions that are most successful in engaging in PACE research would be rewarded and there would be an incentive for institutions to seek out PACE research opportunities and for industry to partner with the institutions (as they would know their contributions would be matched by government).

## 2013 Meeting Note Advice to Minister

**Meeting Date:** December 9, 2013

**Cliff #:** 98430

**Attendees:** Russ Jones, Acting Auditor General  
Cornell Dover, Assistant Auditor General  
John Jacobson, Deputy Minister  
Sarf Ahmed, Associate Deputy Minister  
Teri Lavine, Chief Financial Officer

**Issue:** Russ Jones was sworn in as the acting Auditor General of British Columbia on May 27, 2013. In this role, Russ Jones is meeting with all ministers to establish relationships and get a sense of the issues that government is facing.

### Conclusion / Next Steps:

- The Ministry has an effective and strong working relationship with the staff at the OAG.

### Background / Facts:

- The Ministry works closely with the Office of the Auditor General (OAG) and may, at times, be involved in other government entity audit engagements (i.e., when our ministry's services form part of the scope of that entity's audit).
- The Ministry's Office of the Chief Financial Officer acts as a liaison between the OAG and the Ministry to ensure the audit process flows smoothly and recommendations/reporting requirements are actioned and followed-up appropriately.

### Analysis:

- As described in appendix A, the OAG is currently working with the Ministry on
  - One follow-up report from past audit work; and
  - Four performance audits.
  - One overview report of capital spending in information technology.

**Attachment:** *Appendix A - A summary of the current year's audit activities for the Ministry.*

**Contact:** John Jacobson, Deputy Minister (250 387-8852)  
Sarf Ahmed, Associate Deputy Minister

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**Past audit work**

- *IT performance audit of the Integrated Justice System (JUSTIN)* – This audit was led through the Ministry of Justice and the report was publicly released in January 2013. The OAG made more than 100 recommendations, 14 of which affect the Ministry. The Ministry's involvement is in relation to the information technology services provided within Shared Services BC and the management of the service provider, HP Advanced Solutions, who are responsible for the infrastructure of the JUSTIN System. A follow-up report is scheduled for October 2013.

**Performance audit work currently underway**

- *Professional Services Contracts Audit* – This is a cross-ministry audit and the objective is to determine whether the government of British Columbia is receiving best value from its contracts for professional and advisory services. This audit aims to answer whether professional and advisory services are procured in a manner that is competitive, fair and cost effective, and whether procurement of professional and advisory services are resulting in the right services at the right price at the right time. According to OAG's schedule, the completion of evidence gathering will be done by the end of November 2013, complete facts and findings and draft report by December 2013, response to ministry of finance by January 2014, and publication of final report by January 2014.
- *Information Technology (IT) General Controls in Government* – In 2012/13 the OAG conducted an audit to assess the maturity of IT general controls across Government organizations. The Ministry was audited on its IT general controls, as well as its cross-government controls. The OAG plans to conduct this assessment annually, and starting in 2014 they will sample and follow up on ministry assessments.
- *Web Application Security Audit* – In 2012/13 the OAG conducted web application vulnerability scans on several ministries' public-facing web applications. For each public-facing web application, the OAG produced vulnerability scan reports that identified the critical, high, medium and low vulnerabilities. Business areas have reviewed and resolved the critical and high vulnerabilities. Since the summer of 2013, business areas have been reviewing and resolving the medium and low vulnerabilities.
- *PRIME BC audit* – The purpose of this audit is to assess the integrity and existence of controls to protect information in the PRIME-BC system (Police Records Information Management Environment). It facilitates information sharing to support police operations across the province and case information from this system are submitted to government as Reports to Crown Counsel. There are two primary questions: 1) Is PRIME-BC adequately secured from internal and external threats; and 2) is unauthorized access to PRIME-BC likely to be discovered?

**Future Audit Work**

*BC Government's capital spending in Information technology*– The OAG has provided a draft report on IT capital spending in ministries, crowns and other public sector organizations such as universities, colleges, school districts, health authorities and that are controlled by or are accountable the provincial government. The report includes breakdowns by sector and year as well as descriptions the IT projects with capital budgets in excess of \$50 million such as E-Health, Integrated Case Management, and the BC Lottery Corporation gaming management system. The report concludes with the statement that the OAG plans to conduct audit work that examines the effectiveness of these projects in achieving benefits and value.

MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

BRIEFING NOTE

Ref: 98442

Date: July 15, 2013

I      **PREPARED FOR:**                      Honourable Andrew Wilkinson, Minister  
**FOR INFORMATION**

**TOPIC:**                                      Canada Starts Here: The B.C. Jobs Plan

II      **ISSUE:** As Chair of the Cabinet Committee on Strong Economy, Minister Shirley Bond is leading the continued implementation of the B.C. Jobs Plan and is refreshing the plan with ambitious new goals.

III     **BACKGROUND:**

Government will continue to report on the B.C. Jobs Plan's actions, outcomes and progress to the public on a regular basis.

Deputy Minister Dave Byng will be leading the work across the ministries through the Deputy's Committee for the Cabinet Committee on Strong Economy.

Minister Bond and Parliamentary Secretary Greg Kylo are meeting with relevant ministers to discuss progress made on the B.C. Jobs Plan.

In addition, Parliamentary Secretary Kylo has requested ministry specific briefings on the priority sectors. For the Ministry of Technology, Innovation and Citizens' Services (MTICS) this would include a briefing on the B.C. Technology Strategy.

IV     **DISCUSSION:**

**B.C. Jobs Plan:** *As part of a broader skills initiative, work with post secondary institutions to promote entrepreneurship education, including expertise on effective business engagement in Asia*

While Advanced Education is the lead on this initiative, there are ongoing BCIC programs aligned to this priority. Examples include the Venture Acceleration Program, mentorship programs and six entrepreneurship@programs.

MTICS has been requested to work with post-secondary institutions to ensure more of the innovative ideas created on campus are put on track to become successful, commercial ventures.

**B.C. Jobs Plan Platform Commitments:** *Provide up to \$500,000 to be accessed by researchers who can demonstrate projects designed to produce new products out of our provincial wood resources.*



MTICS is currently developing a 2013/14 work plan and finalizing a contract with FPIInnovations for the amount of \$1.115 million to support product innovation and commercialization in the bio-economy, including research to support to the next generation wood constructions systems.

The Minister's accountability letter tasked the MTICS with the following Jobs Plan Platform Commitments:

- *Work with the BC Technology Industry Association to encourage the federal government to adopt the provincial Small Business Venture Tax Credit program which would double the tax credits available for B.C. firms;*
- *Expand the value of the Small Business Venture Tax Credit program by an additional \$5million in 2015/16;*
- *Expand the B.C. Training Tax Credit Program to include co-op and intern placements in small technology firms; and,*

**B.C. Technology Strategy:** A six month progress update on all 23 initiatives across government was collected in February 2013. A one-year progress update is planned.

Ministry highlights for 2012/13 are:

- Engaged the Premier's Technology Council to review government's research and innovation investments.
- In 2012, the BCIC Acceleration Network (BCAN) was launched. The BCAN is the BC Innovation Council's largest commercialization initiative and touches all corners of the province. Its objective is to support early-stage entrepreneurs to get their businesses launched. BCAN is already producing strong results, directly leading to new jobs and investment in the province. In its first 12 months:
  - 47 start-ups joined the program;
  - \$4 million attracted in private sector investment;
  - \$1 million in revenues generated; and
  - 140 jobs created for British Columbians.
- In September 2012, the winners of the 12th annual BCIC-New Ventures Competition were announced in Vancouver. In total \$235,000 was awarded in prizes.
- In March 2013, welcomed 200 members of BC's tech community to A Dialogue... Building and Sustaining BC's Technology Ecosystem, a full day event put on by BCIC and partners including BCTIA, DigiBC, LifeSciences BC and Wavefront.
- Through BCIC, contracted with Mitacs to launch a pilot B.C. commercialization voucher program to encourage qualified enterprises to partner with B.C. public post-secondary institutions to accelerate commercialization of B.C. innovations. To date, 39 projects have been approved.

Selected highlights from other ministries include:

- Agreement underway with the federal government to deliver the Remote Communities Integrated Energy Project (includes projects in 4 remote communities in B.C., with case studies and technology demonstrations). *Ministry of Energy, Mines and Natural Gas and Ministry of Environment*
- A \$1.3 million investment in the installation of 13 direct current (DC) fast charging stations was announced in January 2013. The 13 DC fast-charging stations will increase mobility options for plug in electric vehicles and fulfill the government's commitment to complete the B.C. portion of the West Coast Green Highway. *Ministry of Environment and Ministry of Energy, Mines and Natural Gas*
- Since 2011, \$3.56M has been invested in 61 Aboriginal communities to participate in the Clean Energy sector. The province is also expected to finalise 4-6 First Nation Clean

Energy Revenue Sharing Agreements with BC First Nations. *Ministry of Aboriginal Relations and Reconciliation*

- Working with the federal government on the introduction of the Expression of Interest Model for a faster more flexible immigration system. *Ministry of Jobs, Tourism and Skills Training*
- Open Educational Resources site for free public access to online *Ministry of Education*
  - 12 courses now available
  - 28% increase in registrations in Jan 2013
  - More resources planned for release in September 2013

## V **CONCLUSION:**

While the Ministry has links to one initiative in the B.C. Jobs plan, it does have overall accountability for leading the implementation of the B.C. Technology Strategy.

There are also a number of initiatives identified in the Minister's mandate letter that are also identified in the B.C. Jobs Plan Platform Commitments.

### **PREPARED BY:**

Kim Danderfer  
Director, Knowledge Transfer and  
Commercialization  
Technology and Innovation  
250-356-1593

### **REVIEWED BY:**

Kevin Butterworth  
Executive Director  
Technology and Innovation

***Reviewed  
by KB***

---

John Jacobson  
Deputy Minister  
Ministry of Technology, Innovation and  
Citizens' Services

***Reviewed  
by JJ***

---

Hi Kim,

Please prepare a BN as below due to me by end of day today. I've attached extra info.

Thanks,

Kevin

From: Barnes, Renee A CITZ:EX

Sent: Monday, July 15, 2013 12:17 PM

To: Suzanne, Trish M AEIT:EX

Cc: Butterworth, Kevin AEIT:EX

Subject: MIN BRIEFING - July 16 @ 4:45PM re: JTST Jobs Plan sector meetings

Importance: High

Hi Trish,

I'm covering for Diane Taylor today.

I just received this Minister Briefing request for:

Tuesday, July 16

4:5PM – 5:30PM

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TOPIC: Minister to brief on technology focus, barriers and constraints & potential solutions with regards to the Accelerated Jobs Plan.

Attendees: John Jacobson, Kevin Butterworth. More attendees to be determined – will advise ASAP

MEETING MATERIAL REQUEST: Information Briefing Note

- DUE: July 15 (today) end of day – if possible? Please advise!

Apologies on the tight timeline – this request just came in ☹

Many thanks,

REnee

Renee Barnes

Executive Assistant to Sarf Ahmed

Office of the Associate Deputy Minister, Citizens' Services

Ministry of Technology, Innovation and Citizens' Services  
Ph: 250 387-8842 | Email: Renee.Barnes@gov.bc.ca  
2nd Fl, 525 Superior St., Victoria BC V8V 1T7

From: Flesh, Cindy MTIC:EX  
Sent: Monday, July 15, 2013 12:02 PM  
To: Taylor, Diane Ruth CITZ:EX; Barnes, Renee A CITZ:EX  
Subject: FW: JTST Jobs Plan sector meetings

Hello – could I please have staff and a BN – please supply Ministry attendees ASAP - thanks

Cindy Flesh  
Administrative Coordinator to  
the Honourable Andrew Wilkinson  
Minister of Technology, Innovation and Citizens' Services  
Phone: 250- 952-7623  
Fax: 250-952-7628

From: Denniston, Tristan [mailto:Tristan.Denniston@leg.bc.ca]  
Sent: Friday, July 12, 2013 12:29 PM  
To: Flesh, Cindy MTIC:EX  
Cc: Paulson, Aleesa JTST:EX; Dhanowa, Damon JTST:EX  
Subject: RE: JTST Jobs Plan sector meetings

Good Afternoon Cindy,

As per our conversation the meeting will be on the 16th at 4:45 with the Minister to brief on technology focus, barriers and constraints & potential solutions with regards to the Accelerated Jobs Plan.

Thank you,

Tristan M. Denniston  
Legislative Assistant  
BC Government Caucus  
Office: 250-952-7256  
Fax: 250-952-7263

From: Flesh, Cindy MTIC:EX [mailto:Cindy.Flesh@gov.bc.ca]  
Sent: July-12-13 12:24 PM

To: Denniston, Tristan  
Subject: FW: JTST Jobs Plan sector meetings

Cindy Flesh  
Administrative Coordinator to  
the Honourable Andrew Wilkinson  
Minister of Technology, Innovation and Citizens' Services  
Phone: 250- 952-7623  
Fax: 250-952-7628

From: Dhanowa, Damon JTST:EX  
Sent: Wednesday, July 10, 2013 4:10 PM  
To: Flesh, Cindy MTIC:EX  
Cc: Denney, Jay MTIC:EX; Chahal, Jessie MTIC:EX; Hancock, Tom MTIC:EX  
Subject: JTST Jobs Plan sector meetings

Hello – I am looking to set up some meetings in regard to the Jobs Plan. I have your Ministry involved in the below meetings. Please let me know of 30 min slots available for your Minister to participate. I understand the difficulty in fitting these meetings is around estimates, so please include all available slots as the meetings generally have multiple ministries attending.

MoTICS– I have your Ministry participating in 1 of our sector meetings, please let me know of all available slots, thanks.

Sector meeting – Technology

Thanks ☐

Damon Dhanowa  
Executive Assistant  
Honourable Shirley Bond  
Ministry of Jobs, Tourism and Skills Training  
and Minister Responsible for Labour  
☐ damon.dhanowa@gov.bc.ca  
☐ Please consider the environment before printing this email

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From: Byng, Dave A JTST:EX  
Sent: Friday, July 12, 2013 5:26 PM  
To: Carroll, Sandra MIT:EX; Main, Grant TRAN:EX; Carr, Steve EMNG:EX; Henderson, Kim N PREM:EX; Munro, Steve C ABR:EX; Jacobson, John MTIC:EX; Mentzelopoulos, Athana GCPE:EX; Mason, Shanna

JTST:EX; McEwan, Tim JTST:EX; Peterson, Dave FLNR:EX; Gorman, James AEIT:EX; Nikolejsin, Dave EMNG:EX; Shoemaker, Wes ENV:EX; Denlinger, Becky CSCD:EX; Ahmed, Sarf CITZ:EX; Sturko, Derek AGRI:EX

Cc: Fanning, Lindsey JTST:EX; Hohnsbehn, Cathy EMNG:EX; Fekete, Renee MIT:EX; Lewthwaite, Jennifer EAO:EX; Valentine, Lee CSCD:EX; Berkes, Andrea AEIT:EX; Warren, Keira PREM:EX; Taylor, Diane Ruth CITZ:EX; Nicholls, Elizabeth TRAN:EX; Santoso, Patricia JTST:EX; Olson, Lianna GCPE:EX; Eckardt, Dana R ABR:EX; Cochrane, Marlene MEM:EX; Hall, Donna L FLNR:EX; Lee, Bonnie ENV:EX; Crozier, Bev AGRI:EX  
Subject: Refreshing the BC Jobs Plan

Good Afternoon:

As you are all aware, government outlined in its Throne Speech, an on-going commitment to not only support a Strong Economy, but to accelerate progress on the commitments/actions made in the BC Jobs Plan and to look for what more can be done to grow a stronger economy.

To this end, Minister Shirley Bond has been tasked with “refreshing, setting new ambitious goals and continuing implementation of the BC Jobs Plan” and Parliamentary Secretary, Greg Kylo, has been assigned responsibility to ensure progress is made on the BC Jobs Plan and regularly report to Minister Bond, Cabinet and Cabinet Committees.

Government is eager to see progress on the remaining targets and actions, to integrate the platform commitments and to explore bold new ideas to support the long term creation of jobs and investment in BC.

I will be engaging each of you over the coming weeks as Chair of the Deputy Ministers’ Committee on Strong Economy on both fronts. We are on the verge of a number of major investment decisions by industry that can make a meaningful difference in the lives of British Columbians for years to come. But it is clear, the window for these decisions is small and we need to act decisively over the coming months before they close.

Additionally, Assistant Deputy Minister, Shanna Mason, will be the Executive Project Lead within JTSTL, engaging with colleagues within your organisation on the details associated with Jobs Plan related work in progress and bold new ideas over the coming 6-10 weeks.

I would like to ask that each of you identify an ADM contact within your organisation that my staff can work with – and forward that name to Shanna.Mason@gov.bc.ca by July 15, 2013.

Should you have any questions, please do not hesitate to give me a call.

Dave.

MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

BRIEFING NOTE

Ref: 98461

Date: August 22, 2013

**I PREPARED FOR:** Honourable Andrew Wilkinson, Minister

**FOR DECISION**

**TOPIC:** Authority under Section 12 of the *Statistics Act*

**II ISSUE:**

BC Stats requires approval under Section 12 of the *Statistics Act* to jointly collect and share personal information, administrative data, and survey results with Election BC.

**III BACKGROUND:**

Since 2005, BC Stats has supported Elections BC in measuring and improving the quality of the provincial voters list through a combination of voter surveys and the analysis of administrative data. Elections BC will be undertaking an audit of the accuracy of the voters list as of the General Election of May 2013, and is seeking to enter into an agreement with BC Stats for the collection, processing, updating, and sharing of information including voter information and survey results.

BC Stats operates under the legal authority of the *Statistics Act* (the *Act*), Section 12 of which contains provisions for the Minister to enter into agreements for the exchange of information collected jointly with other parties such as ministries, federal departments, and other organizations.

**IV DISCUSSION:**

For this project, BC Stats will collect personal information from Elections BC, and uses this information to undertake a survey. BC Stats will then disclose the survey results, including personal information, to Elections BC for the purpose of auditing and updating the provincial voters list.

Section 12 of the *Act* specifies that, for joint data collection and sharing of information, including personal information and individual survey results, respondents must be notified of the information that is being collected and shared and that respondents have the option not to share their information.

BC Stats has entered into similar agreements with Elections BC in previous years. Legal Services Branch, Ministry of Justice, has reviewed the attached agreement, and the Chief Electoral Officer has approved it.

Elections BC's ability to update voter information using personal information and administrative data obtained from the survey is instrumental to improving the quality of the voters list. The inability for Elections BC to access survey results, including personal information would undermine the fundamental goal of the project.



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## V OPTIONS:

### Option 1:

Proceed with formalizing the joint data collection and information sharing agreement.

#### Stakeholder Relations:

- Elections BC will enter into an agreement with BC Stats for the collection, processing, updating and sharing of information for the purpose of auditing and updating the Provincial Voters List.

#### Outcome:

- BC Stats will provide valuable expertise to Elections BC to measure the quality of the Provincial Voters List.
- Elections BC will receive the information, including personal information, required to improve the quality of the Voter List.

#### Financial:

- BC Stats will recover the costs of the project, estimated to be over \$100,000.

### Option 2:

Do not proceed with formalizing the joint data collection and information sharing agreement.

#### Stakeholder Relations:

- The longstanding relationship between BC Stats and Elections BC could be jeopardized.

#### Outcome:

- Elections BC may choose not to collaborate with BC Stats in the future.
- Elections BC will not receive the information required to improve the quality of the Voter List.

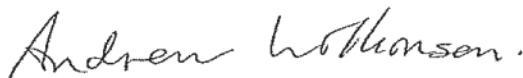
#### Financial:

- BC Stats will not recover the costs of the project.

## VI RECOMMENDATION

**Option 1:** Proceed with formalizing the joint data collection and information sharing agreement.

**Approved / Not Approved**



Honourable Andrew Wilkinson  
Minister

Attachments: Appendix A - Information Sharing Agreement Elections BC



**PREPARED BY:**

Beth Collins, Acting Manager  
Public and Community Research  
BC Stats  
250 508-5808

**REVIEWED BY:**

Angelo Cocco  
Acting Assistant Deputy Minister  
Service BC

*Reviewed by*  
*AC*

---

CJ Ritchie *for* Bette-Jo Hughes  
Associate Deputy Minister and  
Government Chief Information Officer

*Reviewed by*  
*CJ for BJH*

---

John Jacobson  
Deputy Minister

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Pages 104 through 117 redacted for the following reasons:

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S. 3(1)(c)

MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

BRIEFING NOTE

Ref: 98467

Date: August 9, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister

**FOR INFORMATION**

**TOPIC:** Meeting request from Pascal Spothelfer, the University of British Columbia (UBC) Vice-President, Communications and Community Partnerships

II **ISSUE:**

Pascal Spothelfer has requested a meeting with the Minister to discuss how UBC can support the Minister and the Ministry in realizing the mandate objective to, *"Work with post secondary institutions to ensure that more of the innovative ideas created on campus are put on the track to become successful commercial ventures."*

III **BACKGROUND:**

Pascal Spothelfer began a five-year term as the UBC Vice President, Communications and Community Partnership on May 28, 2012. In his corporate career, Spothelfer has worked in Europe for the Boston Consulting Group and Jenoptik AG, before moving to Calgary to lead the restructuring of NovAtel Inc. After a year as Senior VP Strategic Development for Teekay Shipping in Vancouver, Spothelfer served for seven years as the President and CEO of Spectrum Signal Processing in Burnaby.

From 2007 to 2011 Spothelfer was President and CEO of the BC Technology Industry Association (BCTIA) where he actively advocated for the strengthening of B.C.'s knowledge economy.

At the BCIC Technology Summit in March 2013, Pascal Spothelfer moderated a panel titled, "Community Builders: Building the Ecosystem for Growth in B.C." Panelists included Bill Tam of the BCTIA, Brad Lowe of Wavefront, Paul Lee of DigiBC, and Jeff Keen of Accelerate Okanagan. Each panelist spoke briefly about what they are doing (programs/services) and provided their perspective on building an ecosystem to encourage the growth of technology companies within the province.

Born in Switzerland, Pascal Spothelfer graduated with a law degree from the University of Basel, where he also completed his PhD in Law. He received his MBA from INSEAD in Fontainebleau, France.

IV **DISCUSSION:**

Pascal Spothelfer requested a meeting with the Minister to discuss the following:

- UBC's role in the provincial innovation ecosystem and recent campus developments;

- UBC's fall activities, including the President's Board of Trade speech, UBC's innovation strategy, and the innovation roundtable; and
- How UBC can support the Minister and the Ministry in realizing the mandate objective to, *"Work with post secondary institutions to ensure that more of the innovative ideas created on campus are put on the track to become successful commercial ventures."*

#### UBC Entrepreneurship Initiatives

Entrepreneurship@UBC is a campus wide initiative led by the Faculty of Applied Science, the Sauder School of Business, the Faculty of Science and the University Industry Liaison Office (UILO). It is supported by the Faculty of Arts and all the student entrepreneurship clubs on campus.

Students, alumni, faculty and staff have an opportunity to participate in pilot programs by application or invitation. Program examples include: The 3-month Summer Kickstart Accelerator Program, The Lean Launch Pad Accelerator Program, StartupWeekend (and other weekend experiential workshops) and Leadership programs in development.

Offered as part of the entrepreneurship@UBC, the UILO Start-up Services Voucher Program provides up to \$5,000 worth of business services to new ventures formed by recent UBC alumni as well as current UBC students, faculty and staff.

UBC also partnered with BCIC to create the Entrepreneurship@UBC Seed Accelerator Fund, which is a venture fund owned and operated by UBC for the purpose of investing in the next generation of entrepreneurs.

The Seed Accelerator program seeks out very early-stage business opportunities founded by students or alumni who have graduated within the last 3 years. The Seed Accelerator provides mentorship, pre-and post-incorporation services, incubation space, course work, events and unique opportunities for relationship building and learning.

The Seed Fund is governed by an Advisory Board comprised of some of Vancouver's most successful entrepreneurs including Greg Peet, Paul Lee and Peter van der Gracht. An Investment Board makes investment decisions and is chaired by Haig Farris, a well known and accomplished angel investor.

In 2012, Aeos Biomedical Inc was awarded a \$50,000 equity investment from the seed accelerator fund for its product Target Tape TM, a medical adhesive tape that allows doctors to make more precise incisions during surgery.

For other companies associated with Entrepreneurship@UBC go to <http://entrepreneurship.ubc.ca/companies/>

#### UBC Commercialization Initiatives

UBC announced in May 2013 that Cisco will be joining its partners in UBC's living Lab Project that addresses the campus's energy system and energy consumption. Cisco will be directly involved in the Living Lab Initiative, focussing on accelerating the development, demonstration and commercialization of new technologies and solutions.

Specifically, Cisco aims to invest up to \$1 million over five years in collaborative projects. Cisco and UBC will explore solution approaches for a campus-wide Smart Energy System that can integrate energy generation, demand and supply to buildings at UBC's Vancouver campus.

V **CONCLUSION:**

Given the extent of program offerings and support through Entrepreneurship@UBC and UBC's unique partnerships with both BCIC and industry, UBC may offer some unique perspectives on the objective to, "*Work with post secondary institutions to ensure that more of the innovative ideas created on campus are put on the track to become successful commercial ventures.*"

**PREPARED BY:**

Kim Danderfer  
Director of Knowledge Transfer and  
Commercialization  
Technology and Innovation  
250-356-1593

**REVIEWED BY:**

Naomi Pope  
A/Executive Director  
Technology and Innovation

**NP**

John Jacobson  
Deputy Minister  
Technology, Innovation and Citizens'  
Services

**MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES**

**BRIEFING NOTE**

Ref: 98471

Date: August 6, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister  
**FOR INFORMATION**

**TOPIC:** B.C. Innovation Council

II **DATE AND TIME OF MEETING:** August 13, 2013 at 9:00 am to 10:30 am

III **MEETING LOCATION:** S. 15  
s 15 Vancouver

IV **MEETING ATTENDEES:**

John Jacobson, Deputy Minister  
Jill Leversage, Board Chair  
Cheryl Slusarchuk, Director  
Derek Lew, Director  
Lorraine Larkin, Director  
Jonathan Burke, Director (tentative)

V **ISSUE:** The B.C. Innovation Council (BCIC) has requested a meeting to introduce the Minister of Technology, Innovation and Citizens' Services to the Chair of the Board and several Board Directors.

VI **BACKGROUND:**

BCIC is a Crown Corporation of the Province of British Columbia that encourages the development and application of innovative technologies to meet the needs of industry in the province. BCIC accelerates technology commercialization by supporting startups and developing entrepreneurs.

With its partners, BCIC delivers programs and initiatives that promote company growth, resulting in jobs, increased revenue and economic development across the province. Through partnerships and by supporting key industry events, BCIC creates opportunities for British Columbia technology companies to grow their businesses beyond Canada's borders.

The Board of Directors of BCIC is responsible for:

- Setting the strategic direction and approving appropriate plans from management;
- Recruiting and monitoring the executive management;
- Approving major financial decisions, ensuring internal controls are in-place and addressing areas of risk;
- Reviewing corporate performance measures and results; and
- Sharing performance reports regularly with stakeholders.



Currently, the BCIC Board of Directors has seven members (refer to Attachment 1 for biographies):

- Jill Leversage, Chair
- Jonathan Burke
- Gurval Caer
- Robin Ciceri
- Lorraine Larkin
- Derek Lew
- Cheryl Slusarchuk

BCIC Board members do not receive remuneration.

## VII **DISCUSSION:**

### Underway and Ongoing

Key BCIC programs and initiatives that are supporting the priorities of the B.C. Technology Strategy are:

- The Commercial Voucher Program - 39 projects were approved during the first pilot. Work is underway for BCIC to sign an agreement with Mitacs to open applications for a second pilot of the voucher program in September 2013.
- The BCIC Acceleration Network - is an initiative that supports regional expansion by rolling out a structured startup growth and mentorship program throughout British Columbia. The Network requires partners to assess program demand as part of the application process. Recently BCIC has expanded the program to ten partner operated centres across the province.

In keeping with direction coming out of the 2011/12 BCIC mandate review and aligning with the BC Jobs Plan, BCIC is developing a Cross Sector Strategy to diversify BCIC programming into the priority sectors of the Jobs Plan, including Agrifoods, Forestry, International Education, Mining, Natural Gas, Technology, Tourism and Transportation.

### Upcoming

In September 2013, the Ministry will begin to draft BCIC's 2014/15 Government Letter of Expectation (GLE) to confirm BCIC's mandate and outline the Government's high level priorities and direction for BCIC in the coming year. This year the Ministry will be involving BCIC staff early on in the GLE process.

The Minister's mandate letter directive referenced the specific accountability, "*to ensure innovative ideas on campus become commercial ventures.*" The Ministry would like to collaborate with BCIC on potential new programming and improvements to existing programs that would support this initiative.

Recently the terms of reference of Government's Core Review were released. The scope of the Core Review includes the mandates and program delivery models of all ministries, boards, commissions, Crown agencies and the SUCH sector (schools, universities, colleges, and hospitals).

VIII **SUGGESTED RESPONSE:**

Government commends the work of the board and senior staff to ensure BCIC's mandate and programs are aligned with the priorities of the BC Jobs Plan and for the results achieved over the last year in support of the B.C. Technology Strategy.

The ministry supports the board in the hiring of a new permanent CEO, and looks forward to working with BCIC's new CEO and senior staff to implement initiatives that directly support the accelerated development of provincial technology sector.

Government is committed to maintaining ongoing communication and meetings between Ministry Executive and the BCIC Board Chair and CEO will also occur on a quarterly basis to discuss specific goals and performance measures.

IX **ATTACHMENTS:**

Attachment 1 – Board of Directors Biographies

**PREPARED BY:**

Kim Danderfer  
Director of Knowledge Transfer and  
Commercialization  
Technology and Innovation  
250-356-1593

**REVIEWED BY:**

Naomi Pope  
A/Executive Director  
Technology and Innovation

***Reviewed  
by NP***

John Jacobson  
Deputy Minister  
Technology, Innovation and Citizens'  
Services

***Reviewed  
by JJ***

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## Attachment 1: BCIC Board Members Biographies

Jill Leversage (Chair) has over 25 years' experience in the finance industry and has held senior level positions at RBC Capital Markets, BMO Financial and most recently, as Managing Director of Investment Banking at TD Securities. She is currently serving as Chair of the Executive Committee of the Woodward Foundation, Director and Chair of the Audit Committee for Eagle Star Resources, Co-Chair of the Major Gifts Campaign for United Way of the Lower Mainland, Advisor to the Power to Be Adventure Therapy and member of the Minerva Foundation Patron's Circle. Since joining BCIC's Board of Directors in December 2007, Ms. Leversage has played an instrumental role especially in her role as Chair of the Audit Committee. In April 2012, she was appointed to the role of Chair of the Board.

Jonathan Burke is the Vice President of Global Market Development at Westport Innovations Inc, a Vancouver, BC-based leading global supplier of proprietary solutions that allow engines to operate on clean-burning gas. He has over 15 years' experience in corporate and business development and marketing for both private and public technology companies. In addition to his role with BCIC, Mr. Burke is a Director of the California Natural Gas Vehicle Coalition, the Canadian Natural Gas Vehicle Alliance, NGV Global and CALSTART. He holds an MBA from Athabasca University and has completed Executive Education at Stanford University and the Wharton School at the University of Pennsylvania.

Gurval Caer is a co-founder of Blast Radius, a global agency that takes a strategic approach to tackling the complex issues of growing brand and revenue in a digitally connected world. As President and CEO, Mr. Caer has grown the company into a global team of 500 strategists, technologists and creative from 25 nations. He is known for developing innovative strategies for brands such as Nike, Nintendo, Michelin and P&G.

Robin Ciceri is the President of the Research Universities' Council of BC. She joined the Council in November 2009 after a long and distinguished career in the BC government where she held a number of leadership positions. She was the Deputy Minister (DM) for three government ministries: Advanced Education and Labour Market Development, Human Resources, and Small Business and Revenue, and was also the CEO of the Public Sector Employers' Council Secretariat. Ms. Ciceri has a BA in history, a Professional Certificate in Secondary Education and an MPA. She is currently also on the Boards of LifeSciences BC, the BC Council for International Education, and the Immigrant Employment Council of BC.

Lorraine Larkin is a partner with Larkin & Nast Chartered Accountants, specializing in the provision of accounting, taxation and business consulting services to individuals, estates, and corporations. She previously articulated with Coopers & Lybrand Chartered Accountants. Ms. Larkin holds Certified General Accountant and Chartered Accountant designations.

Derek Lew is a partner with the Initio Group, a Vancouver-based early-stage angel investment firm, and is a lawyer experienced in the areas of corporate, commercial and real estate law. Active in his community, he is a Director of the Frank and Joan Lew Charitable Trust and the FJL Housing Society, which focuses on social housing in Vancouver's Downtown Eastside. He is also an active member of the technology start-up community in Vancouver. Mr. Lew holds BA from the UBC and a Bachelor of Laws from the University of Alberta.

Cheryl Slusarchuk is a partner in the law firm McCarthy Tétrault LLP and National Leader of the Technology Group. She practices in the areas of private M&A, outsourcing, cloud and technology transactions, with a focus on cross-border deals and global roll-outs. Ms. Slusarchuk also currently serves on the board of Smart Grid Canada. Previously, she has served as the Chair of a Green Energy Advisory Taskforce, Chair of the Climate Action Team and President of the Premier's Technology Council.

## MINISTRY OF TECHNOLOGY, INNOVATION AND CITIZENS' SERVICES

### BRIEFING NOTE

Ref: 98495

Date: July 26, 2013

I **PREPARED FOR:** Honourable Andrew Wilkinson, Minister  
**FOR INFORMATION**

**TOPIC:** Deaf citizens' access to services

II **ISSUE:**

Service BC service delivery to deaf and hearing impaired citizens.

III **BACKGROUND:**

The Ministry of Technology, Innovation and Citizens' Services (the Ministry) was asked to attend a joint briefing with Honourable Steve Thomson, Minister of Forests, Lands and Natural Resource Operations, and Mr. Norm Letnick, MLA, to discuss issues of deaf and hearing impaired accessibility. The Ministry was specifically requested to provide information regarding deaf citizens' access to sign language interpreters. Deputy Minister John Jacobson and Angelo Cocco, Acting Assistant Deputy Minister for Service BC, attended the July 24, 2013 briefing.

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IV **DISCUSSION:**

Information regarding the prevalence of deafness in the population is difficult to determine, however, there are estimates available that can provide an order of magnitude assessment:

- According to the Deaf Access Office in the Ministry of Children and Family Development, the estimated number of deaf citizens in B.C. is 8,000.
- Information from the BC Early Hearing Program indicates that permanent congenital hearing loss affects at least one to three babies in every 1,000 births; this average extrapolated to the total population implies 9,200 deaf citizens in B.C.

A perspective on Service BC service delivery experience with deaf and hearing impaired citizens was provided at the briefing. This briefing addressed the following points:

- Service BC provides in-person access to hundreds of government services through 61 service centre locations across the province.
- Service BC's interaction with hearing impaired citizens is, primarily, with citizens who have an age-related hearing impairment.
- Citizens with an age-related hearing impairment are very often not familiar with sign language and therefore would likely not request an interpreter.
- There have been very few requests for interpreter services; the interpreter service requests that have arisen relate to Insurance Corporation of British Columbia (ICBC) knowledge testing that is delivered through Service BC.

Regarding the availability of sign language interpreter services in B.C., the briefing included the following points:

- There are several interpreter booking companies in B.C., but all of these companies pull from the same pool of available interpreters.
- Most interpreters are members of the Association of Visual Language Interpreters of Canada; the majority (90%) of Association interpreters are located in the Lower Mainland or on Vancouver Island.
- Interpreter services require advanced notice for service requests.

Technology solutions (e.g., video conferencing, smart phone applications) were discussed as emerging solutions to address service delivery constraints faced in B.C., specifically (i) geographically dispersed general population, (ii) relatively low population prevalence of deaf citizens, and (iii) the concentrated location of limited interpreter resources.

V

#### **CONCLUSION:**

- Service BC is committed to delivering services in an accessible manner to citizens of B.C.
- Service BC does not have a policy that specifically addresses service delivery to citizens who are deaf or hearing impaired; the Division is in the process of developing guidelines to ensure consistency in approach to service delivery for deaf citizens.
- Service BC is connecting with its program area clients (e.g., ICBC, Ministry of Social Development, Residential Tenancy Branch) to identify existing policies and practices.
- Service BC is in contact with the Deaf Access Office, which is coordinating a discussion with key provincial program areas that deliver in-person services. The intent is to ensure that a coordinated, rather than piece meal, approach to service delivery is considered.

#### **PREPARED BY:**

Angelo Cocco  
Acting Assistant Deputy Minister  
Service BC  
250-387-9171

#### **REVIEWED BY:**

Bette-Jo Hughes  
Associate Deputy Minister  
Ministry of Technology, Innovation  
and Citizens' Services

*Reviewed  
by BJH*

John Jacobson  
Deputy Minister