

The State of the Technology Industry in BC

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What Makes Up Our Technology Sector?

- **Information technology** - software products and services.
- **Life sciences** - biotech, pharmaceuticals, medical devices and labs.
- **Communications** - telecom, internet, wireless and new media.
- **Energy** - hydroelectric, alternative fuel cells and others.
- **Electronics** - integrated circuits, semiconductors and opto-electronics (photonics).
- **Manufacturing** - marine, aerospace, computer hardware, telecom and IT.

(Source: BC Gov't; Vancouver Board of Trade)

What Does the Tech Sector Mean To BC?

It is a growing sector:

- In recent years, the tech sector has outperformed the BC economy.
- GDP from tech sector doubled in the 1990s, from \$1.7B in 1991 to \$3.78B in 2000.
- In 2000, it represented 3.9% of BC's total GDP, up 16.5% from 1999.
- In 2000, revenues generated by the tech sector were \$8.0B+, up from \$5.6B in 1995.
- Exports of tech products totalled \$946.8M in 2000, representing 3% of BC's total exports.

(Source: BC Stats; Science Council of BC; MacDonald & Assoc.)

What Does The Tech Sector Mean To Our Workforce?

The impact on employment is profound:

- In 2001, there were over 8,000 technology businesses in BC.
- Over 60,000 people were employed in the technology sector, representing 3.5% of working British Columbians.
- Between 2000 and 2001, employment by BC's top 100 tech companies increased by 5.8% compared to negative overall employment growth in BC of -0.03% overall.
- In 2000, the technology industry accounted for \$2.8B in wages and salaries paid.

(Source: BC Stats; www.bctechnology.com)

Top 10 Tech Companies In BC (by revenues)

<u>Company</u>	<u>Employees</u>	<u>Public</u>	<u>Revenues</u>	<u>Sector</u>
Creo	4,100	TSX	\$1.018B	Hardware
MDA	1,820	TSX	\$481M	Hardware and Software
PMC-Sierra	1,150	NASDAQ	\$346M	Semiconductors
Xantrex	650	Private	\$170M	Electronics
Seanix	140	Private	\$152M	Hardware
QLT	347	TSX	\$129M	Biotech
Pivotal	700	NASDAQ/TSX	\$128M	Software
Sierra	881	TSX	\$128M	Software
AimGlobal	350	TSX/AMEX	\$123M	Tech Manufacturing
Creation	571	Private	\$94M	Tech Manufacturing

(Source: www.bctechnology.com)

Top 10 Financings By BC Techs

<u>Company</u>	<u>Size</u>	<u>Sector</u>
Telus	\$9.2B	Telecom
PMC Sierra	\$437M	Semiconductor
Xenon	\$74M	Biotech
Xantrex	\$58M	Electronics
Inex	\$43M	Biotech
Nxtphase	\$41M	Electronics
Cellfor	\$35M	Biotech
MDA	\$35M	Hardware and Software
Convedia	\$31M	Telecom
Roundheaven	\$31M	Internet

(Source: Business in Vancouver)

So What Are The Challenges Facing Us?

The most often cited challenges:

- Government red-tape and over taxation.
- Lack of government incentives.
- Lack of infrastructure (physical, financial, networks etc.).
- Shrinking IT budgets (a worldwide problem).
- Shortfall of R&D investment and funding.
- Brain drain and lack of skilled workers.
- Lack of venture capital.

(Source: Cdn. Manuf. & Exporters Assoc.; Science Council of BC; www. Itac.com)

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Human Resource Challenges

We do not supply the bodies we need:

- The brain drain continues to result in skilled university professors, entrepreneurs and successful young companies moving south of the border.
- Recent studies have shown that at its peak, the local technology industry could have employed 14% more employees than were available.
- Projections suggest that by 2005, the supply of skilled technology employees in BC will meet only 1/3 of the demand.

(Source: Cdn. Manuf. & Exporters Assoc.; Science Council of BC; www. Itac.com)

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Venture Capital Challenges – Money Raised

The current situation:

- Our labour sponsored funds (LSFs) remain capped at \$80.0M per year, as compared to Ontario and Quebec which have no cap.
- BC is the only one of the three high-growth technology hotspots in Canada (Ontario, Quebec) with a cap on LSFs.
- Ontario and Quebec have raised almost the entire \$8.4B raised by LSFs in Canada to date.
- BC has only one LSF (Working Opportunity Fund) as compared to Ontario's current 17 LSFs.
- Currently Quebec has more than twice our total number of VCs with Ontario having ten times our number of VCs.

(Source: MacDonald & Assoc.; Cdn. Venture Capital Assoc.)

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Venture Capital Challenges—Money Invested

Compared to the rest of Canada, we lag behind on venture capital invested:

- In 1999, BC accounted for 7% of Canadian VC investments while in 2000 BC attracted 10% of such VC investment.
- In 2001, average VC investment in BC was \$1.8M, compared to national average of \$4.5M.
- In 2001, the number of VC deals done in BC was 278, as compared to 726 in Ontario and 774 in Quebec.
- In 2001, the VC dollars invested in BC totalled \$500M, as compared to over \$2.0B in Ontario and nearly a \$1.0B in Quebec.

(Source: MacDonald & Associates; Cdn. Venture Capital Assoc.)

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Does Anyone Care?

Yes!!!! - The prevailing belief is that the technology industry represents an integral part of our future:

- BC is the most connected province in the country with 68% of all British Columbians having internet access either at work or home.
- 43% of British Columbians identify the technology sector as the single most important industry for the future of BC, ahead of both tourism and forestry.
- Small businesses in BC are the most connected in the country, 74% to the national average of 69%.
- 44% of venture capital investment in BC from 1996-01 went to into IT investments, with Life Sciences ranking a close second at 36%.

(Source: BC Gov't; www.innovationstrategy.com; Science Council of BC)

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So What Are Our Strengths?

There are a number often cited:

- Superior R&D tax incentives.
 - Lower benefit and payroll taxes.
 - High quality workforce.
 - Advanced education system and network of research centres.
 - Strong industry organizations.
 - Strong programs supporting the industry.
- ...and our Ace in the Hole, prime geographic location for both work and play.

(Source: Science Council of BC; BC Gov't)


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Our Competitive Advantage in Numbers

Leaving aside quality of life, the numbers look good too:

- On R&D, our after tax (credits) cost of \$100 of R&D is \$44 as compared to \$59 in Seattle.
- On corporate taxes, our rate of 33% is the second lowest in Canada and comparable to Seattle (31%).
- Our occupancy costs are very competitive, \$150 per square metre in Vancouver as compared to \$400 in Seattle.
- Our payroll costs (salary, benefits and payroll taxes) are 30% below those in Seattle, on average.

(Source: Business in Vancouver)




The Road Ahead

The BC Government needs to take a leadership role. The Government points to the following as its commitment so far:

- A 25% reduction in personal income tax.
- A 3% reduction in corporate taxes.
- A promised reduction of red-tape by 1/3 by 2004.
- More flexible employment standards and labour laws.
- The establishment of the Premier's Technology Council.


(Source: BC Gov't)



... But The Road Is Bumpy

While expressing its love for the technology industry, the Government has:

- Cut staff at the Science Council of BC
- Axed the very popular Technology BC grants.
- Effectively closed the doors on Tech BC
- Failed to materially improve the climate for raising venture capital in this Province.
- Not moved far enough on tax and labour/employment law reform.




So What Can We Expect In The Future?

A mixed bag:

- Slow growth in the technology sector mirroring the overall economy.
- A ever increasing slice of the overall economic pie in BC being taken up by the technology sector for the foreseeable future.

If in doubt, just ask yourself:

"Where would I be today without the internet, my computer, my cel phone, my palm pilot, my"



Where Is Our Local Industry Going?

Infotech

- Digital Convergence (melding of entertainment, communications & computers).
- Data sharing & peer to peer technologies.
- Conferencing/wireless solutions.

Manufacturing

- Fuel cells/nanotechnology.
- Advanced materials/semiconductors.

Biotech

- Genomics/Proteomics/Bioinformatics.
- Biopharmaceuticals.




Anatomy of the Internet Boom – Part I

Did you know that:

- More venture capital was invested in technology companies during the boom in the late 90's than in the entire history of the U.S.
- At that time, consumer spending hit record proportions and internet adoption and usage exceeded even the most bold projections.
- IT WAS A TIME WHEN IT WAS VERY EASY TO BECOME BLINDED BY THE TECHNOLOGY BOOM.

But, to go forward blindly means that you are bound to encounter some pain

(Source: F'd companies: spectacular dot com failures)



Anatomy of the Internet Boom – Part II

... let's take the story of *OnlineChoice.com*, as an example:

- This was a purchaser aggregator – a very popular internet business.
- They raised US\$20M and one time employed 70 people.
- In the late 90's, their founder was named *Entrepreneur of the Year* by Ernst & Young.
- In Feb. of 2001, the founder turned down an offer to buy the company for US\$300M.
- In June 2001 (just three months later...), the company went Chapter 7.
- The assets were subsequently acquired for US\$70K.

FOLLOWING ALONG BLINDLY CAN COST YOU BIG TIME!

(Source: F'd companies: spectacular dot com failures)

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Anatomy of the Internet Boom – Part III

.... or how about the story of *Modo*:

- A wireless pager/palm pilot type hybrid device.
- Displayed information on restaurants, bars and other entertainment venues in New York, Los Angeles and San Francisco.
- They burned through US\$40M in venture capital and shut down a mere five weeks after actually launching their service ... and one day before their official office launch party!

IT HAPPENED BLINDINGLY FAST!

(Source: F'd companies: spectacular dot com failures)

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Anatomy of the Internet Boom – Part IV

... I mean, what were people thinking? Take the story of *PNV* for instance:

- Their stated mission was to be "... the leading provider of bundled telecommunications, cable television and internet access services to truck drivers in the privacy and convenience of their truck cabs."
- Just what we need, a truck driver driving 80,000 pounds of metal down the highway at high speed looking at pictures of Britney Spears on his laptop instead of the road!!!

WERE WE BLINDED BY GREED?

(Source: F'd companies: spectacular dot com failures)

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Anatomy of the Internet Boom – Part V

So what did we learn from the boom? How about:

- It would be a good idea to actually have a business model for your business.
- It would be preferable if the founder was old enough to drive.
- Revenues and cash flow are not dirty concepts unworthy of true entrepreneurs.
- People will not buy, subscribe to or use just anything (popular culture notwithstanding).

So of course we have learned our lesson, right? Well, at least until the next time!

(Source: F'd companies: spectacular dot com failures)

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