



Bio-economy Roundtable on Sustainable Capital Formation

Toronto, Ontario

Wednesday, June 16, 2010



Overview

The use of biotechnology in commercial applications to improve human health, tackle environmental challenges, feed the world's growing population, and change the way the world does business, has been addressed in a variety of case studies, policy briefs and reports at the public and private levels. The value of biotechnology to the future of Canadians, the economy, and society in general, is no more evident than in the OECD's landmark report, *The Bioeconomy to 2030: Designing a Policy Agenda*. The report asserts "the biological sciences are adding value to a host of products and services, producing what some have labeled the "bio-economy." BIOTECanada has estimated the biotechnology industry has a national footprint in the vicinity of \$84.7 billion of Canada's gross domestic product, or 6.9% of Canada's overall economy.

BIOTECanada's *The Canadian Blueprint, Beyond Moose and Mountains*, lays the foundation for creating the world's leading bio-economy. Our national strategy focuses on three independent priorities: people, capital and operating environment. The Blueprint's priority on capital aims to stimulate new capital formation, achieve world-leading efficiency in the use of capital, and create the most bio-friendly tax regime in the world. The Bio-economy Roundtable on Sustainable Capital Formation was held on Wednesday, June 16, 2010, in support of this priority.

Purpose of the Roundtable

Canada's junior biotechnology companies, those without a commercialised product on the market, make up 90% of the industry.

This roundtable was held to identify, analyse, and propose innovative alternatives to ensure sustainable capital formation for Canada's junior biotechnology companies.

A broad group of industry stakeholders with commercial, financial, legal, and business experience was invited to the roundtable in order to discuss and propose creative funding models. In total, 33 individuals participated in the event (Appendix A). The roundtable was moderated by Janet Dalicandro, Co-founder of Enrichment Enterprises. The roundtable was sponsored by the Business Development Bank of Canada (BDC).

The specific objectives of the meeting were to:

- Identify the intrinsic capital formation problem(s) affecting Canada's junior biotech companies.
- Identify and analyse alternatives against agreed-upon constraints to improve access to capital for Canada's junior biotech companies.
- Agree-upon and propose one (1) or more fundamental solutions aimed at solving the identified capital formation problems affecting Canada's junior biotech companies.



Setting the Stage: Beyond Moose and Mountains

Peter Brenders, President and CEO of BIOTECanada, provided a synopsis of the Canadian Blueprint to build the country's bio-economy. This national strategy, developed by the national and regional biotechnology organisations, highlights how Canada can move beyond its traditional economic drivers.

Biotechnology, in one way or another, contributes to more than \$80 billion of economic activity in Canada. The potential for growth is high; however, Canada's biotech firms report ongoing challenges in three core areas: people, capital, and operating environment.

The primary challenge facing Canadian biotechnology companies is access to capital. The question posed to the roundtable was "how do we stimulate sustainable capital formation for this growing industry?" The Blueprint outlines several methods or options which could sustain the industry:

- a capital gains tax exemption,
- a bio-credit program for products manufactured in Canada,
- an R&D investment incentive program,
- an intellectual property tax credit,
- increased government funding for proof-of-concept innovation,
- and a \$20 billion biotech R&D program (BIOPARTNER).

Over the last several years, the industry has seen progress on several proposals by provincial and federal governments to improve the capital formation environment. However, foreign governments have also taken a variety of steps to protect their respective high-tech and/or biotechnology industries. Noted examples included nations such as the United States, Australia, the United Kingdom, Singapore, Taiwan, France, and Israel. Although Canada has made significant investments in academic and public research, our nation's corresponding contribution to private sector business research has failed to remain competitive with international investments.

Roundtable participants noted the Canadian private equity market was currently at a standstill and venture capital had been consistently decreasing over the last three years. Compared to the United States, Canada lags proportionally in terms of institutional commitments to venture funds and venture capital investments in life sciences.

BIOTECanada estimated approximately \$1.2 billion per year was required to sustain the industry. Similarly, Burrill & Company estimated the industry required a capital infusion of \$1 billion per year. Consensus estimates suggested approximately \$1-\$1.5 billion a year would sustain the industry at current levels. Roundtable participants felt the solutions selected would need to stimulate these levels of capital annually.



Political Climate

Walter Robinson, Principal at TACTIX and guest speaker at the roundtable, provided a summary of the current federal political climate, the Conservative government, and the challenge surrounding *Federal Budget 2011*.

Several political conditions affecting a potential request to the federal government were noted:

- A divided and fractious minority Parliament at the federal level makes agreement difficult on financial issues.
- The Conservative government has placed an emphasis on demonstrating the strength of Canada's economy compared to the rest of the world. The federal government's position is that the positive performance of Canada's economy over the past year is, in part, a testament to its short-term fiscal stimulus efforts, the Economic Action Plan, expected to be completed in the present fiscal year (2010-2011).
- Reducing the budget deficit and restoring fiscal balance will be the thematic framework for future budgets over a three to five year time-frame.

Any proposal made at the national level should be framed in terms of its national implications. As the federal government continues to balance its budget, there is an opportunity to concentrate on costless or very low cost proposals – in terms of budget or policy asks – with a demonstrated return on investment (ROI).

According to Mr. Robinson, the enormous value proposition for biotech and

biopharma was seen as undefined and obscure to the Canadian government and the public in general. The commercial application of biotechnology has the opportunity to save lives, feed Canadians, and solve the most pressing environmental issues. This must be clearly and better communicated to the general public and key government stakeholders.

The life sciences industry was not seen as championed within the federal government while bio-energy and cleantech, in general, had champions. Moreover, biotechnology had no supportive funding program at Industry Canada, as opposed to the Automotive Innovation Fund (AIF) for the automotive sector or the Strategic Aerospace and Defense Initiative (SADI) for the aerospace sector.

The implementation of a flow-through shares program for the biotechnology sector had been discussed over the last five years or so. Budget 2010 included a provision to include further flow-through deductions for the cleantech sector. The policy rationale in support of this measure was to balance flow-through deductions already applied to the oil, gas, and mining sectors, with more equivalent treatment for the clean energy sector.

The declining venture capital market and any possible effects on the federal government's newly launched *Digital Economy Strategy* as well as the federal government's review of overall research and development activities, announced in Budget 2010, presented opportunities to improve the capital formation environment for biotechnology.



Mr. Robinson suggested Finance Canada should be the primary agent for change. Garnering support from the Minister was identified as a key component to any successful proposal. Messages that the government should create the conditions for capital formation were noted to have much higher probability of success rather than simply asking for a cash injection into the industry.

Insight into the U.S. Venture Capital Market

Dennis Purcell, Senior Managing Partner at Aisling Capital, presented his perspective on the risk capital environment in the United States.

The state of the venture capital environment in the United States is not all that different from that in Canada. U.S. venture capitalists faced tremendous difficulty in securing capital commitments as limited partners (LPs) placed most value on liquidity and solvency. Realising a return on an investment in biotechnology or healthcare in general could take up to 15 years, and this was problematic for LPs. Venture capitalists were increasingly becoming less patient with their investments, and this had a direct impact on investments that required longer periods to generate a return.

A U.S. investor viewpoint of Canada's life sciences sector suggested:

- Development skills at the entrepreneurial level were lacking in Canada.
- Commercialising basic science was a primary challenge in Canada.
- Technology transfer in Canada was perceived as weak versus the United States.
- The prevailing biotech funding model must be reconsidered in light of the changing capital environment.

Overall, U.S. venture capital firms looked to fund companies led by individuals with a track-record of entrepreneurial success. The investor was looking for companies that value capital efficiency. In order to sustain the industry, there must be more creative thinking about how to fund biotechs considering these new realities.

Mr. Purcell recommended four points for the roundtable:

1. The entrepreneurial gap in Canada must be addressed. A community of experienced, senior-level managers continues to lag in Canada.
2. Creative, non-government oriented methods of sustaining the industry must be identified.
3. Canada's private equity sector must be involved in any proposal.
4. The biotech sector must realise the lack of risk capital is a national, not regional, problem and the funding gap is occurring in the United States as well.



Roundtable attendees broadly discussed the points raised and emphasised the importance of local venture capital firms. The roundtable agreed that key U.S. investors would only direct their funds in Canada if a local Canadian co-investor accompanied their investment. Considering this, if the Canadian venture market remained at historically-low levels, there would be limited potential to attract U.S. venture capital, therefore perpetuating the declining venture capital market in Canada.

Roundtable attendees discussed the premature spin-out of technologies in Canada and how this had created a culture of risk capital-starved companies. The lack of early-stage capital in Canada to create junior biotech companies was worrisome to both industry and the Canadian government. The group agreed an intersection between the public and private sector must exist in order for Canada's life sciences sector to remain viable. The role of government was viewed as creating the conditions for investment, rather than making direct investments in companies.

Israel's venture capital industry was raised as a paramount model of success. The public-private risk-sharing venture capital model employed by the Government of Israel has paid tremendous dividends to the state. Israel was perceived to have aligned the use of public venture capital dollars with incentives for private-sector investment.

Cross-Country Viewpoints

Betsy Bascom, Vice President, Business Development & Member Services at BIOTECanada, briefed the roundtable on her individual interviews with industry stakeholders across Canada addressing capital formation problems. More than 60 interviews were conducted. Three broad problems were identified by those interviewed: capital, management, and the regulatory environment.

The general consensus in the interviews was that the fundraising model for the typical Canadian biotechnology firm has been broken for quite some time. Many companies went public prematurely and investors placed high valuations on early-stage biotechs while institutional investments were in decline. As a result, there was an insufficient amount of risk capital raised every year to sustain the number of early-stage companies in the Canadian market.

Several potential solutions raised during the interviews included:

- an angel investor tax credit;
- implementation of a flow-through shares program for the biotechnology industry;
- a capital gains tax exemption on high-risk investments;
- implementation of a national fund-of-funds;
- and a government co-investment fund.



Evaluation Criteria

Roundtable attendees discussed a list of constraints, limitations, or 'screen elements' to be applied in the evaluation of potential solutions. Roundtable participants collectively identified the following criteria to be met by any solution:

- demonstrates a measurable return on investment;
- is aligned with the federal government's priorities;
- positively impacts more than one sector;
- acts as structural fix to the fundraising environment;
- drives sustainable economic activity in Canada;
- supports the formation of critical mass in Canada;
- helps raise \$1 - \$1.5 billion for Canada's biotechnology industry;
- and receives broad industry support.

These criteria were developed to provide a reality check on the use of any proposed solution(s).

The Root Problem

Roundtable participants worked to brainstorm and identify the underlying capital formation problem(s) affecting Canada's biotechnology industry. The objective was to agree on a clear definition of the exact capital formation

problem(s) requiring resolution. Tying the problem(s) to the federal government's position was viewed as leading to more realistic proposals.

In a general discussion, participants broadly agreed that the fundamental capital formation problem(s) were shared between government and industry. The identified problems existed within the context of a broken biotech financing ecosystem. The basic infrastructure to support the formation and commercialisation of Canadian biotechnology goods and services was lacking. Unlike other nations with a clear focus on building junior biotech into robust sectors, Canada was viewed to have lost interest in the sector other than bio-based clean technology. Creating the necessary business conditions to ensure the sustainability and growth of the emerging industry was felt to largely fall on the shoulders of the federal government. Supporting capital formation and encouraging efficiency in the industry could be easily achieved with the help of a nationally-defined government plan, with a provision for actively stimulating capital formation for the next generation of biotechnology companies.

There was an extensive discussion about articulating the value of investing R&D in Canada. Venture-backed companies in the United States were noted to contribute tremendously to the nation's gross domestic product (GDP). The value of commercialising biotechnology goods and services in the United States, profoundly supported by venture capital, had been proven to generate substantial social, economic, and fiscal returns.



Canada could reach the same level of success, so long as the necessary tools that would support the development of the junior biotech sector were in place.

The overall problem was felt to have three components:

1. There is a mismatch between the current biotech model and investor opportunities elsewhere.
2. The value proposition of biotechnology has not been understood by the general public.
3. The necessary conditions for sustaining the industry have not been created by government.

A short-list of proposals

Roundtable participants brainstormed potential solutions to the identified problems. Several potential solutions to encourage sustainable capital formation were discussed.

The lack of support for Canada's junior biotechs was seen as a distinct threat to Canada's innovation economy. An innovation tax credit was identified as a potential solution to address the early-stage funding gap. With venture capital dollars continuing to be allocated to later-stage companies, the junior biotech was viewed to be at immediate risk. British Columbia's Small Business Venture Capital Tax Credit, offering a 30% tax credit to individuals and corporations investing in qualified high-tech enterprises and/or qualified venture capital firms,

was raised as a program with tremendous success.

A tax credit program incentivising early-stage investment at the national level was identified as a potential solution to driving sustainable capital formation. The participants also agreed to support any relevant provincial innovation tax credit initiatives.

Extending the applicability of flow-through shares to the life sciences sector was also identified as a potential mechanism to stimulate capital formation. It was noted that the historical record of the flow-through shares program for the oil, gas, and mining sectors demonstrated a huge return on investment to the Canadian government in the form of increased gross domestic product, additional tax revenues, job creation, and other spin-off economic benefits. There are similarities between the biotech and the oil, gas, and mining sectors in terms of the industries' capital-intensive nature, long development cycle, and high-risk profile. Considering these similarities, flow-through shares were identified as an essential tool to create a long-term self-sustaining industry.

The introduction of a "Commercialisation Fund-of-Funds" was identified as a tool to accelerate venture capital activity across all levels of the development lifecycle. The multiplier effect of a fund-of-funds can have the ability to generate 4-5 times additional risk capital for the industry. Roundtable participants reached an agreement that any fund-of-funds should be structured in a way to encourage the commercialisation of biotechnology goods and services in Canada.



Making simple but necessary improvements to the Scientific Research and Experimental Tax Credit (SR&ED) program was viewed as a potential method to sustain the industry.

Refundable SR&ED tax credits provide non-dilutive financing for junior biotechs and in many cases SR&ED tax credits are the only source of capital to the company aside from that provided by equity investors. Increasing the threshold to the upper limits for refundable tax credits would provide a crucially important source of non-dilutive financing to Canadian junior biotechs. In addition, the roundtable felt the Canadian Controlled Private Corporation (CCPC) restriction for SR&ED refundable credits presented a challenge for foreign direct investments (FDI). The program's restriction on refundability to only CCPCs limits its usefulness to support Canadian jobs today and attract foreign companies to operate and do business in Canada.

To stimulate new investment into companies, allowing them to continue commercialisation of innovative research, roundtable participants also pointed to a capital gains tax exemption on new direct investments in R&D intensive companies. Junior biotechs face a drug development cycle of up to 15 years of research and development and numerous multi-million dollar rounds of financing. To ensure continued investment over this time and keep research jobs and innovation in Canada, the roundtable suggested an incentive to drive long-term investment in the form of a capital gains tax exemption.

Finally, roundtable participants evaluated the potential of introducing more

competitive research grants to companies. It was noted that the federal government had a tremendous track-record of support for the granting councils, public research institutions, and post-secondary research institutions. However, providing additional non-dilutive financing to the private business sector, in the form of competitive grants and contribution agreements, was viewed as a potential alternative to ensuring sustainable capital formation.

Participants evaluated each potential solution according to pre-established criteria. Participants engaged in a lively discussion about the merits of each potential solution and whether the solutions fit within the identified constraints.

Proposed Solutions

In the end, roundtable participants agreed to support four solutions deemed the most appropriate according to the identified capital formation problems.

1) Flow-through shares

The roundtable agreed there was much misunderstanding among decision-makers about flow-through shares and how the program is used. Participants felt a clear opportunity existed to redefine how a flow-through shares program could be of value to the industry and the broader economy. Participants felt there was a need to make flow-through shares more equitable and extend the applicability of flow-through shares from the bio-based cleantech sector to all bio-based sectors including health,



agriculture, and industrial biotechnology. The expansion of the federal flow-through shares program to the junior biotech was viewed as the most high-impact alternative to help generate \$1 - \$1.5 billion in yearly capital for the industry.

2) Enhanced SR&ED credits

The roundtable recommended removing the CCPC requirement for refundable tax credits and creating a level-playing field for all biotech companies operating in Canada, regardless of ownership structure.

Removing the CCPC requirement could increase foreign direct investment, create jobs in Canada, and attract foreign talent. With foreign investors bringing more dollars on average than Canadian investors, the CCPC restriction was felt to be an obstacle to the long-term sustainability of the industry, and ultimately, to the growth of next generation high-tech companies, jobs, and marketed goods and services.

In addition, the roundtable recommended further increasing SR&ED thresholds for refundability. Refundable SR&ED tax credits provide much-needed non-dilutive financing. This is of greatest value to junior, pre-commercial biotechs, as more often than not, these firms operate in a year-over-year net loss position, accumulating a tremendous amount of tax losses. Increasing the thresholds for SR&ED refundability generates vital cash flow for Canada's next generation of biotech leaders.

3) Innovation tax credit

The funding gap at the early-stage of drug development was viewed as a significant risk to the next generation of biopharmaceutical development. The roundtable concluded that incentivising corporate and individual investors to fill this gap was a priority. The federal government should create the business conditions to motivate this investment and ultimately fill the funding gap. The federal government should create a 30% investor tax credit for early-stage investments in emerging high-tech sectors and any provincial initiatives should be supported.

4) Commercialisation Fund-of-Funds

The value of a healthy venture capital ecosystem was viewed as critically important to the innovation economy. With commitments to venture capital funds consistently decreasing, it was agreed that steps must be taken to encourage venture financing. The value of venture capital to the federal government can be assessed in terms of its contribution to incremental gross domestic product, revenues and taxes, jobs, and commercial products for export. Attracting venture capital from the United States, Europe, and Asia was deemed critically important to the sustainability of the industry. The roundtable recommended creating a national fund-of-funds directed at commercialising biotechnology goods and services, in order to attract supplementary foreign sources of risk capital. Long-term sustainability of the industry through domestic and foreign sources of capital was deemed a national priority.



Next Steps

BIOTECanada was given the support to prioritise these solutions based on comprehensive analyses, make a recommendation to BIOTECanada's Board of Directors, and proceed with an advocacy plan.

In light of achieving broad consensus on defining the problem, selecting the constraints, and agreeing on several solutions, the roundtable agreed that delivery of a divided or solitary ask to the federal government would be ineffective. All industry stakeholders must collectively deliver one unique message. As a result, targeting all relevant stakeholders from academia and the investment community, to regional and other related associations, was regarded as a crucial component of BIOTECanada's advocacy plan.

BIOTECanada Corporate Overview

Incorporated in 1987 as the Industrial Biotechnology Association of Canada, BIOTECanada serves as the national voice for industry leadership for Canada's biotechnology sector. Through our national network of partner organisations, we inspire our domestic and international community to recognise the value of biotechnology and to provide solutions to the challenges faced by biotech firms today.

About BIOTECanada

BIOTECanada is dedicated to the sustainable commercial development of biotechnology innovation in Canada. It is the national industry-funded association with over 250 member companies representing the broad spectrum of biotech constituents including emerging and established firms in the health, industrial, and agricultural sectors, as well as academic and research institutions and other related organisations.

Mission

BIOTECanada is dedicated to the sustainable commercial development of biotechnology in Canada.

Goal

Our goal is to inspire our domestic and international community to recognise the value of biotechnology in Canada and provide solutions to the challenges our constituents face.



Appendix A: Roundtable Participants

Betsy Bascom, BIOTECanada

Simon Blanchard, Fonds de solidarité FTQ

Peter Brenders, BIOTECanada

Gerry Brunk, Lumira Capital

Janet Dalicandro, Enrichment Enterprises

Wayne Danter, Critical Outcome Technologies

Michelle Doig, Abingworth Management

Barry Foster, Inerkip Capital Management

Kevin French, RBC

Albert Friesen, Medicare

Nancy Harrison, MSI Methylation Sciences

Michael Herman, Gowling Lafleur Henderson LLP

Daniel Hetu, Lumira Capital

Denis Ho, Business Development Bank of Canada

Steven Hurwitz, Choate, Hall & Stewart LLP

Gord Jans, PricewaterhouseCoopers LLP

Paul Karamanoukian, Ernst & Young LLP

Eric Legault, Teralys Capital

Jean-Francois Leprince, CTI Life Sciences Fund

Hector Mackay-Dunn, Farris, Vaughan, Wills & Murphy LLP

Cate McCready, BIOTECanada

John McCulloch, MaRS Discovery District

Murray McLaughlin, Sustainable Chemistry Alliance

James Milway, Institute for Competitiveness & Prosperity

Gibril Muddei, BIOTECanada

Peter Pekos, Dalton Pharma Services

Tony Pullen, Paradigm Capital

Dennis Purcell, Aisling Capital

Owen Roberts, Affinium Pharmaceuticals

Walter Robinson, TACTIX

Bill Stamatis, Deloitte

Rick Sutin, Ogilvy Renault LLP

Andrew Wilkes, Management Initiatives/National Angel Capital Organization