Canadian Life Sciences Industry Forecast 2009

BIOTECanada

PricewaterhouseCoopers

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Introduction

We are pleased to present the findings from PricewaterhouseCoopers' (PwC) Canadian Life Sciences Industry Forecast 2009, completed in collaboration with BIOTECanada. This report is designed to help stakeholders in the Canadian life sciences and biotechnology industry understand the challenges and concerns of their peers, especially in light of recent economic conditions.

Canada's world-renowned life sciences and biotechnology companies are proven leaders in innovation, but they also face increasing global competition and challenging economic conditions. Tightening credit has further limited access to capital, while the volatility in the markets increases valuation risk, putting pressure on share prices and asset values.

Through an online survey conducted in October and November 2008, 167 stakeholders from corporate, academic, government and other organizations in the Canadian life sciences and biotechnology industry were asked a series of questions intended to capture their thoughts on a variety of issues impacting the industry today and in the future.

This is our third report and our findings continue to build on the findings from our 2006 and 2007 Forecast Reports. In our view, the data gathered provides important information on where efforts should be placed to improve Canadian success. We trust you will find the information valuable for broadening the dialogue on these issues.

Peter Brenders
President and CEO
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National Leader, Life Sciences Group
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Key Findings

There are a number of key findings from the forecast that can be used by industry and government to shape the future for the Canadian life sciences and biotechnology industry.

1. Outlook & Challenges
   Confidence is low with two-thirds of respondents saying they are somewhat to not at all confident in the short term outlook for the Canadian industry. The biggest challenge continues to be raising capital.

2. Funding
   Respondents are expecting financing rounds of less than $10 million and there is an increasing pessimism about venture capital as a source of funding.

3. Government Support
   Most respondents are looking to the government to create incentives for risk capital and to create more favourable tax incentives. Given the current economic environment, government will need to act quickly to maximize Canada's potential for success in this globally competitive industry.

4. Products & Profitability
   Amongst respondents not earning revenues, 25% believe it will take over 5 years for their companies to earn revenue. For respondents who do not currently have products for sale, 73% indicated that they are not expecting to have products for sale within the next two years.

5. Mergers & Acquisitions
   M&A continues to be the leading exit strategy foreseen for the industry and the choice of building a sustainable business continues to be the least popular strategy. The main barrier to implementing M&A is valuation issues.

6. Alliances & Collaborations
   Respondents believe collaborative networks will play a key role in business models in the future, however, their current usage and views on potential to achieve business objectives is not as robust as PwC's findings globally.

7. People & Places
   Recruiting experienced senior management is the second most important action industry should take to improve Canada's global competitiveness but respondents are not intending to invest resources to accomplish this goal. An overwhelming majority expects to keep their business operations in Canada but more R&D will be spent outside Canada.

Survey Respondent Profile

A total of 167 respondents contributed to this year's Canadian Life Sciences Industry survey. The respondents from public and private life sciences and biotechnology businesses represent a total of approximately 5,000 employees across Canada and have revenues of approximately $2 billion.

All regions of Canada were represented in this year's survey with 47% of companies' head offices based in Ontario, 30% in Western Canada (Manitoba, Saskatchewan, Alberta and British Columbia), 11% in Quebec, 8% in Atlantic Canada, and 4% from other international locations.

Eighty-three percent of the life science and biotechnology organizations surveyed have less than 100 full-time employees and 25% of respondents surveyed state that they have 5 or fewer full-time employees.

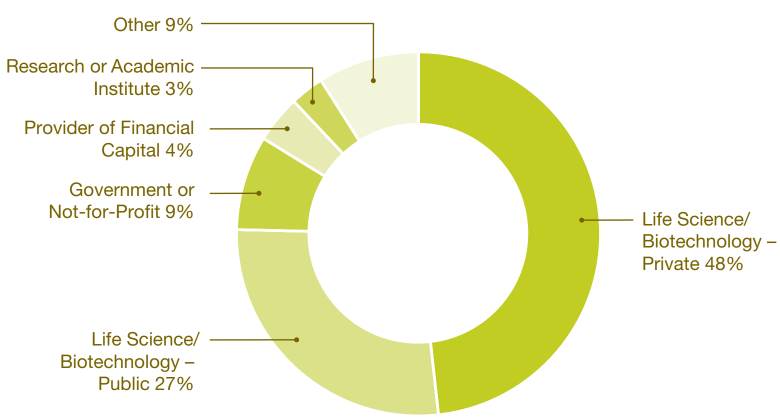
Fifty percent of survey respondents consisted of Chief Executive Officers or Presidents of the organization, 13% were Chief Financial Officers, and the remainder was from various positions such as Chief Operating Officer, Business Development, Regulatory Affairs, etc.

Out of the 125 companies which disclosed whether or not they generated revenues, nearly 60% of respondents reported that they currently generate revenues. Fifty-four percent of revenue generating companies reported revenues of less than $5 million annually.

Companies that were privately held accounted for nearly one-half of all respondents, while public companies represented approximately one-quarter. The remainder of respondents consisted of government/non-profit organizations, providers of financing to life science or biotechnology companies as well as research institutes or academia (Figure 1).

The respondents surveyed offer a wide variety of solutions and products. The largest area of focus for survey respondents in 2009 are Therapeutics (22%), followed by Branded Pharmaceuticals (16%) and Agricultural (9%).

Figure 1: Respondent Business



1. Outlook & Challenges

Industry Confidence

Two thirds of survey respondents say they are somewhat to not at all confident in the Canadian industry's short term outlook.

The main driver for this sentiment can likely be attributed to the current economic crisis. The life sciences industry as a whole is one that is heavily dependent on cash to support research and commercialization of products, so it is not surprising that the industry is heavily impacted by current economic conditions. By comparison, pharmaceutical CEOs who participated in PwC's 12th Annual Global CEO Survey[1] were much more confident than their Canadian counterparts.

As seen in Figure 2, the top three most challenging factors for respondents' organizations over the next two years include raising capital (54%, similar to 2007's result of 53%), product development, (31%, similar to 2007's result of 29%) and attracting and retaining key employees (25%, compared to 2007's result of 39%). The fact that attracting and retaining key employees continues to be one of the top three indicates that talent is highly valued and that respondents recognize the importance of key employees during tough economic times. It is also interesting to note that protecting intellectual property (IP) has increased from 12% in 2007, to 20% in 2009, in percentage of respondents who rank it as a challenging factor, suggesting growing complexity in managing IP portfolios.

The biggest challenge for the Canadian life science and biotechnology industry continues to be the ability to access capital (78% of respondents as per Figure 3), which has consistently been the top choice in all PwC Canadian Life Science Forecast reports to date. Other challenges include access to strategic partners (47%) and development of experienced entrepreneurs (41%). Access to strategic partners is a new selection for the 2009 survey; however, there was little change in the importance of the development of experienced entrepreneurs, compared to 2007, which again suggests that people do make a difference in tough economic times.

Figure 2: Which of the following issues do you feel will be the most challenging over the next two years for your organization? (respondents were asked to select top 3 choices)

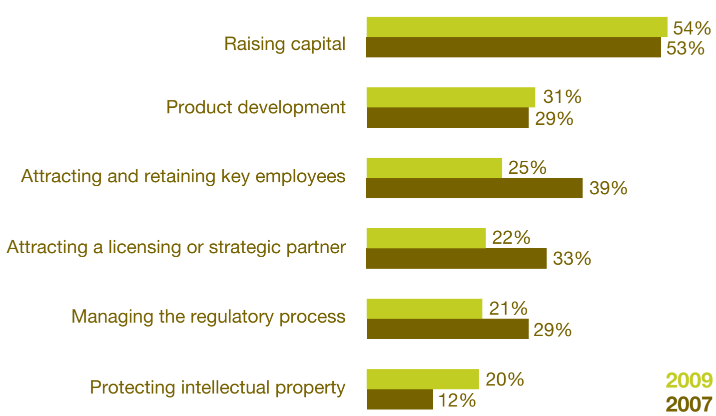
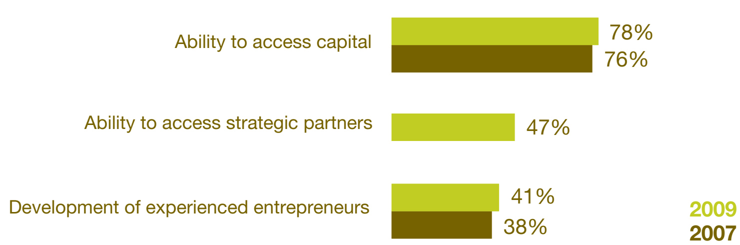


Figure 3: What do you believe are the key challenges for the Canadian life sciences and biotechnology industry to become a stronger global competitor? (respondents were asked to select top 3 choices)



1. PwC's 12th Annual Global CEO Survey was released in January 2009 and is hereinafter referred to as the "2009 PwC Global CEO Survey."

Finally, as seen in Figure 4, the top rated critical success factors for the industry continues to be access to capital, access to talent and tax incentives along with a return to positive financial markets.

Figure 4: How would you rank the following critical success factors for the Canadian life science and biotechnology industry now? (respondents were asked to select top 3 choices)

2. Funding
Changing Expectations

Access to capital plays a critical role in the short term success of the industry.

The importance of capital is strongly supported by our data in figures 2, 3 and 4. Moreover, highlighting current economic conditions, 64% responded that unfavourable industry and market conditions is the top challenge to successfully raising capital for Canadian life science and biotechnology businesses (Figure 5). Accessing capital has always presented a challenge as the industry competes for risk capital with other sectors; however, this situation has been exacerbated by the current economic crisis and the overall decrease in available capital.

Forty-three percent of survey business respondents are currently seeking funding, with an additional 35% seeking funding within the next two years. The dollar amount respondents are seeking is similar to 2007. Only 39% of respondents are seeking over $10 million in funding (Figure 6) and less than $5 million continues to be the most popular choice for respondents (44% in 2009, 42% in 2007). In our view, the funding expectations reflect a weak capital raising environment and funding at this level is clearly insufficient for long term growth.

Figure 5: What do you perceive to be the top three challenges to successfully raising capital for a Canadian life sciences or biotechnology business? (respondents were asked to select top 3 choices)

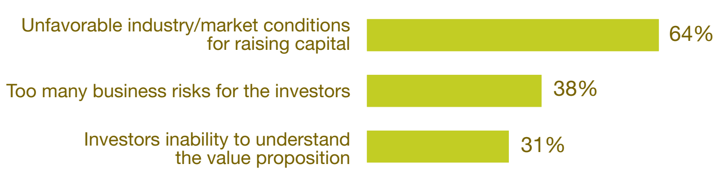
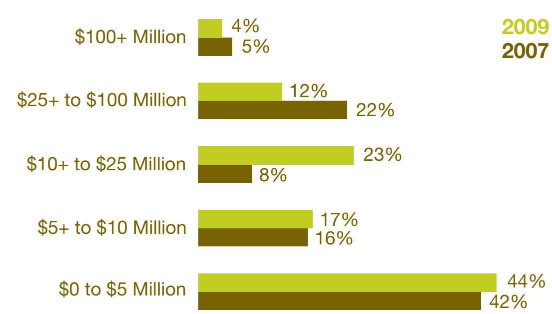


Figure 6: Approximately how much funding will you be seeking in your next round of funding?



Funding

Where do survey respondents believe this money will come from? One-third of respondents expect funding to come from strategic partners (Figure 7). Other major sources include private equity funds (20%), venture capitalists (19%), angel investors (18%) and government (16%). With the public markets being closed, one wonders where the industry will be able to attract the risk capital required to successfully commercialize existing programs if it does not come from venture capital sources. Clearly the expectations of respondents is that strategic partners and private equity funds will fill the gap.

Figure 7 also reveals a disturbing decline in the number of respondents expecting funding from venture capitalists from 48% in 2006, to 19% in 2009. While venture capital funding has always been limited in Canada, it is even more pronounced in this current economic climate. According to Thomson Reuters, 2008 saw the lowest level of venture capital funding in 12 years with $1.3 billion of venture capital funds invested in Canada, compared to $2.1 billion in 2007 — a 38% decline. 27% of the total of these amounts went to the life sciences sector in 2008, compared to 31% in 2007.

By comparison, venture capitalists invested $28 billion in the U.S. in 2008, according to the MoneyTree Report[2]. This represents an 8% decrease in dollars invested and a 4% decrease in deal volume, compared to 2007. Venture capital investment in the life sciences sector decreased to $8 billion in 2008 compared to 9.3 billion in 2007 — a 15% decline. However, the number of life sciences deals only fell by 3% indicating that deals are still getting done albeit at smaller amounts. Life sciences represented 28% of all venture capital investments in the U.S. — the highest of any sector. Not surprisingly, the decline in dollar amounts and deal volumes was the greatest in the fourth quarter of 2008 — when capital market troubles gained momentum.

> "There is no venture capital for life sciences; FIX THAT! Where there is money, there will be people and deals."
>
> 2009 Canadian Life Sciences Industry Forecast respondent

Figure 7: From what sources do you expect to get this funding? (respondents were asked to select top 3 choices)

2. The Moneytree™ Report by PricewaterhouseCoopers and the National Venture Capital Association based on data from Thomson Reuters

3. Government Support
Incentives for Risk Capital

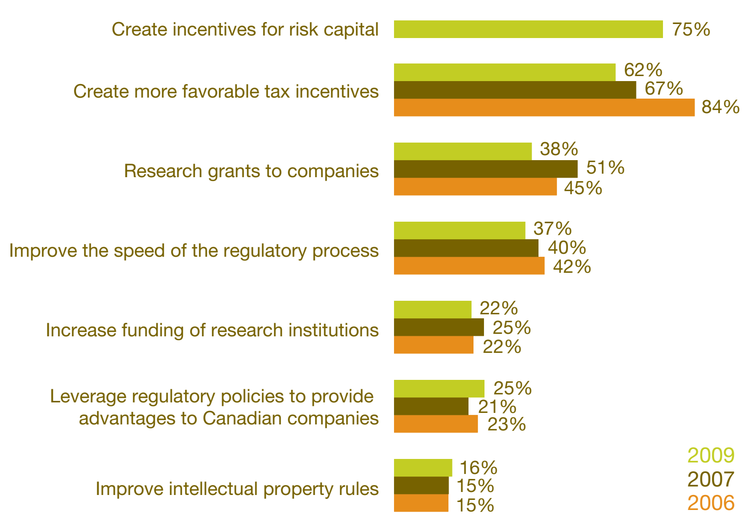
Three quarters of respondents believe that creating incentives for risk capital is the most important action government can take to improve Canada's ability to compete globally in the life science and biotechnology sector.

Respondents also indicate that the federal or provincial governments can also contribute by creating more favorable tax incentives (62%), and providing research grants to companies (38%) (Figure 8). Creating incentives for risk capital is a new choice on the survey this year; in previous years the majority of respondents indicated that creating more favorable tax incentives is the most important action that government can take to improve Canada's ability to compete globally in this sector (67% in 2007 and 84% in 2006). Tax incentives that encourage investment by providers of capital was also the third highest critical success factor for the industry (Figure 4). If government cannot provide support through these primary initiatives, it will likely present the industry with further challenges in competing successfully on the global stage.

While there has been some improvement on the tax front since our 2007 report (notably the increase to refundable R&D tax credits for certain companies and some relaxation of cross-border investment reporting and withholding obligations), these changes are unlikely to sustain the industry in the long-term. Unfortunately, despite significant lobbying efforts, the 2009 Federal budget did not contain any tax or risk capital incentives that will help the industry.

When asked whether the Canadian government should focus their support to specific sub-sectors of the life science and biotechnology industry, one-half responded 'yes'. This is an increase from prior year surveys, where only one-third believed sub-sector support was important and suggests a growing view that specialization is the best way to compete globally. Sub-sectors noted as important to respondents included therapeutics, diagnostic, agricultural and medical devices.

Figure 8: What do you believe are the most important actions that government can take to improve Canada's ability to compete globally in the life sciences and biotechnology industry? (respondents were asked to select top 3 choices)



"While governments provide much needed grant funding, the process and time involved is too long and inefficient."

2009 Canadian Life Sciences Industry Forecast respondent

4. Products & Profitability

The Waiting Game

Nearly three-quarters of companies not currently selling products expect that it will take over two years to bring a product to market.

Nearly 25% of non-revenue earning companies believe it will take over 5 years for their companies to earn revenue (similar to 2007). When respondents, who do not currently have products for sale, were asked if their organization plans to have products for sale within the next two years, 73% answered "no". This is similar to previous years' responses where 71% in 2007 and 62% in 2006 answered "no" to the same question.

For companies who do not currently earn profits, more than 70% believe it will take over three years to generate a profit, with more than 30% responding that it will take over 5 years. These figures have remained relatively consistent over the past 2 years.

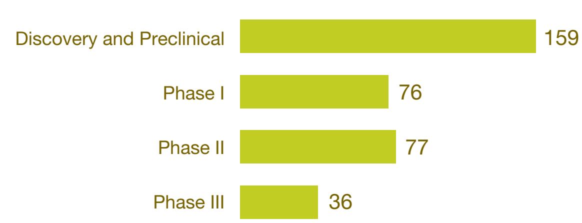
Further evidence of the long timeline to revenues and profits comes from the Canadian Life Sciences Database[3] which indicates that 90% of current products are in the preclinical to Phase II stage of development (Figure 9).

The expected time delay until revenues and profits occur is likely the primary reason survey respondents identified access to capital as one of the top key challenges for the Canadian life science and biotechnology industry.

"If you would have asked what I prefer I would say building and maintaining a sustainable business. Not enough of that in Canada — investors are too quick to push companies to sell"

2009 Canadian Life Sciences Industry Forecast respondent

Figure 9: Number of Biotechnology Therapeutic Products in Canada's Pipeline



3. Data as at February 2009.

5. Mergers & Acquisitions
Another Quiet Year?

Nearly two-thirds of respondents indicate that being acquired or participating in a merger is the most likely scenario for a successful Canadian life sciences or biotechnology business.

In addition, almost half believe that licensing or selling IP or co-development/partnerships is also a likely option (Figure 10). Again, this is likely reflective of current economic conditions, as access to capital is limited and companies will likely seek to pool resources. From a longer term perspective, the relatively low ranking of “Build or maintain a sustainable business” in all of our PwC Canadian Life Science Forecast reports to date suggests that the Canadian industry may never achieve the critical mass and scale required to effectively compete on the global stage without a significant change in operating environment.

Furthermore, respondents believe that strategic alliances will play a more significant role in the growth of their business than M&A (50% versus slightly less than 40%). In contrast, the 11th Annual Global CEO Survey[4] reported equal weighting to these two choices, suggesting a lower bias to implementing M&A in the Canadian market versus the global view.

47% of respondents indicate that valuation issues are the main barriers to M&A in the industry (Figure 11). Valuation issues were also highly rated choices in 2007 and 2006. Other significant barriers to M&A include conflicting management personalities (34% in 2009; 49% in 2007), funding (29% in 2009; 30% in 2007), and lack of interest from large firms (27% in 2009; 32% in 2007).

Given the impact of the current economic crisis on valuations, the views of respondents towards M&A and the low priority for acquisitions from new funds raised (Figure 15), our data suggests 2009 may be another year of relative quiet on the M&A front. However, the current economic situation may force more companies to consider M&A as a survival strategy.

Figure 10: What do you consider to be the most likely scenario for the typical successful Canadian life sciences or biotechnology business? (respondents were asked to select top 3 choices)

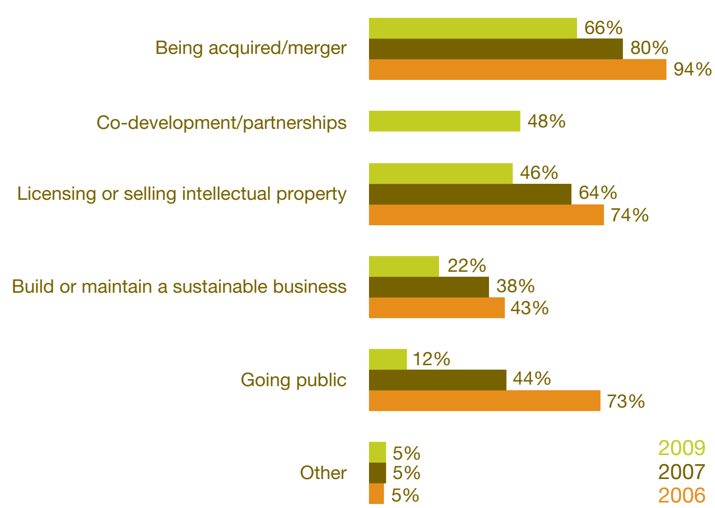
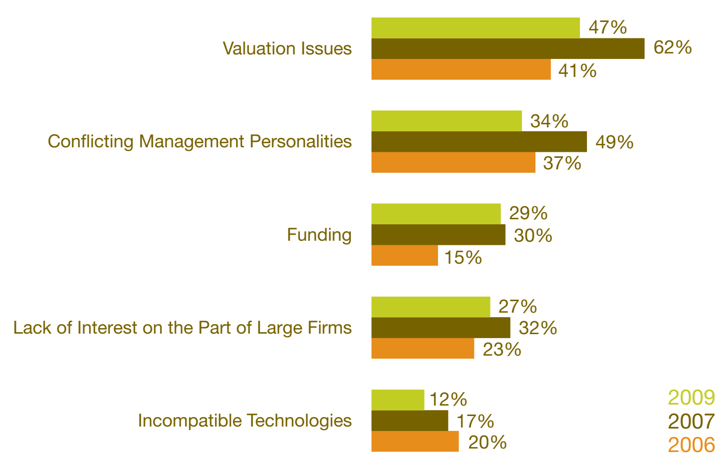


Figure 11: What do you see as the most significant barriers to mergers and acquisitions in the life sciences and biotechnology industry? (respondents were asked to select top 3 choices)



4. The 11th Annual Global CEO Survey was released in January 2008 and is hereinafter referred to as the “2008 PwC Global CEO Survey”.

6. Alliances & Collaborations

Canada vs. Global Perspectives

The results of the 2008 PwC Global CEO Survey indicate the number and variety of collaborations in the sector are on the rise. Although collaborations are viewed favourably by Canadian respondents, collaborations are not fully embraced in practice.

A large majority of Canadian respondents (70%) believe that collaborative networks will play a key role in future business models in the industry, with the belief that the benefits of collaboration outweigh the costs and risks associated with it. However, as seen in Figure 12, Canadian respondents currently use collaborations far less than their global counterparts in a variety of areas including using networks to share best practices, using networks to mitigate operational risk, using networks to reduce costs, using networks to find talent and using networks to address macro-threats.

Moreover, as seen in Figure 13, Canadian respondents generally have a less optimistic view of the potential for collaborations to achieve various business objectives versus global data including critical areas such as learning best practices, increasing innovation and accessing new skills or scarce talent. The survey results imply that in some key areas, although collaboration is a good idea in theory, the practice is not widespread. This may change in the future given the importance of collaborations, strategic alliances and sharing of resources in tough economic times.

As a point of interest, the Netherlands, South Korea, Australia, Israel and the U.S. are known to effectively use collaborative networks by encouraging the formation of centres of excellence and organizations whose mandate is to promote cooperation, sharing of resources and bringing together innovators and investors. By leveraging collaborative networks, these jurisdictions are leaders in commercialization of innovation, as measured by gross expenditure on research and development per capita and number of triadic patent families. Therefore, collaborative networks in these jurisdictions appear to add value and represent a model for Canada to replicate.

Figure 12: To what extent does your organization participate in each of the following types of collaboration across business networks? (Choose one for each statement) (results shown for moderate to significant responses)

Figure 13: How effective are collaborations across business networks in achieving the following range of objectives (Choose one for each statement) (results shown for quite to very effective responses)

Do you support initiatives to change the traditional drug development model towards a live licensing concept?

Live licensing refers to the issuance of a “live license” to market a product on a limited basis once it has demonstrated sufficient efficacy, value and safety in an initial trial population, as opposed to the traditional license granted after a lengthy regulatory approval process. The majority of respondents in this survey (63%) are undecided. However, there is a large variance between those who do support (33%) and those who don’t (4%). This suggests a sentiment among respondents that there needs to be a shift in the regulatory and approval process to bring products to market faster, within the confines of patient safety. PwC’s publication *Pharma 2020: Which Path Will You Take?* forecasts that live licensing will be more prevalent in the future, in order to make more therapies available to a wider group of patients, in a shorter period of time.

7. People & Places

Staying Competitive

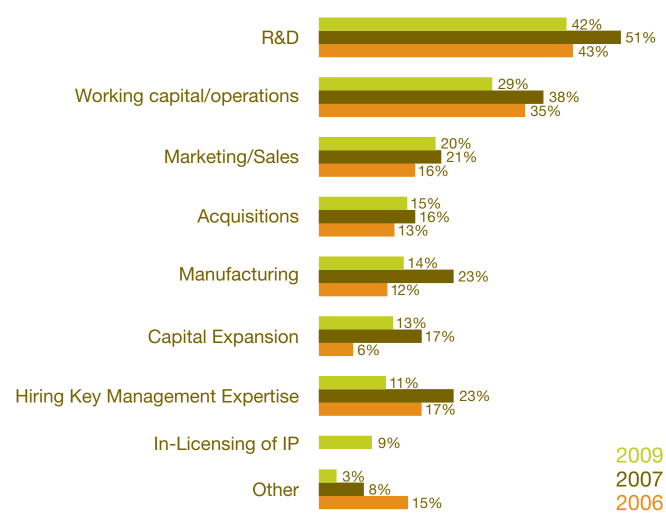
Survey respondents indicate the second most important action industry should take to improve Canada's ability to compete is recruiting experienced senior management.

Since hiring and recruiting experienced management is high on the radar for survey respondents (Figure 14), one would expect their organizations to invest in such recruiting efforts. However, there is an apparent disconnect in the survey results (similar to 2006) in that only 11% seek to use their funds to attract and hire key management expertise. As seen in Figure 15, this was the second lowest response to the use of funds question and represents a significant decline from 2007 and 2006 survey results. Respondents note that the top three positions they find most challenging to hire are: Director of Clinical Development and Director of Regulatory Affairs followed by VP of Business Development and Chief Scientific Officer, which are tied for third.

If recruiting experienced senior management really is the top action industry thinks it must take to improve Canada's ability to compete, companies need to spend the dollars required to attract and retain the best and the brightest minds in the industry.

Figure 14: What do you believe are the most important actions that industry can take to improve Canada's ability to compete globally in the life sciences and biotechnology industry (respondents were asked to select top 3 choices)

Figure 15: What is the most likely use of funds from your round of funding? (respondents were asked to select top 3 choices)



Places

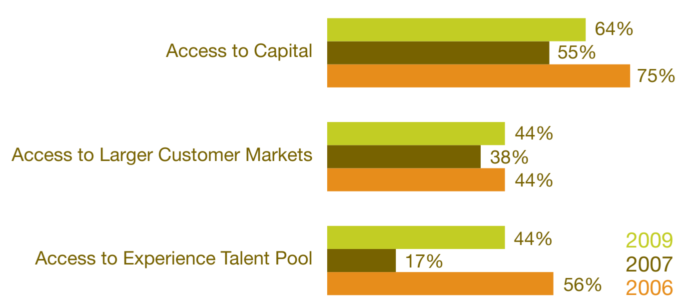
Staying Close to Home

80% of survey respondents have no plans to relocate some or all of their business outside of Canada in the next 2 years.

Of the 20% of respondents planning to relocate, nearly 85% plan to head south to the United States. Primarily, they plan to relocate their sales department (48%) and head office (20%), compared to entire operations (4%). Reasons for planning to move appear to be access to capital, a larger customer market, and a larger talent pool (Figure 16).

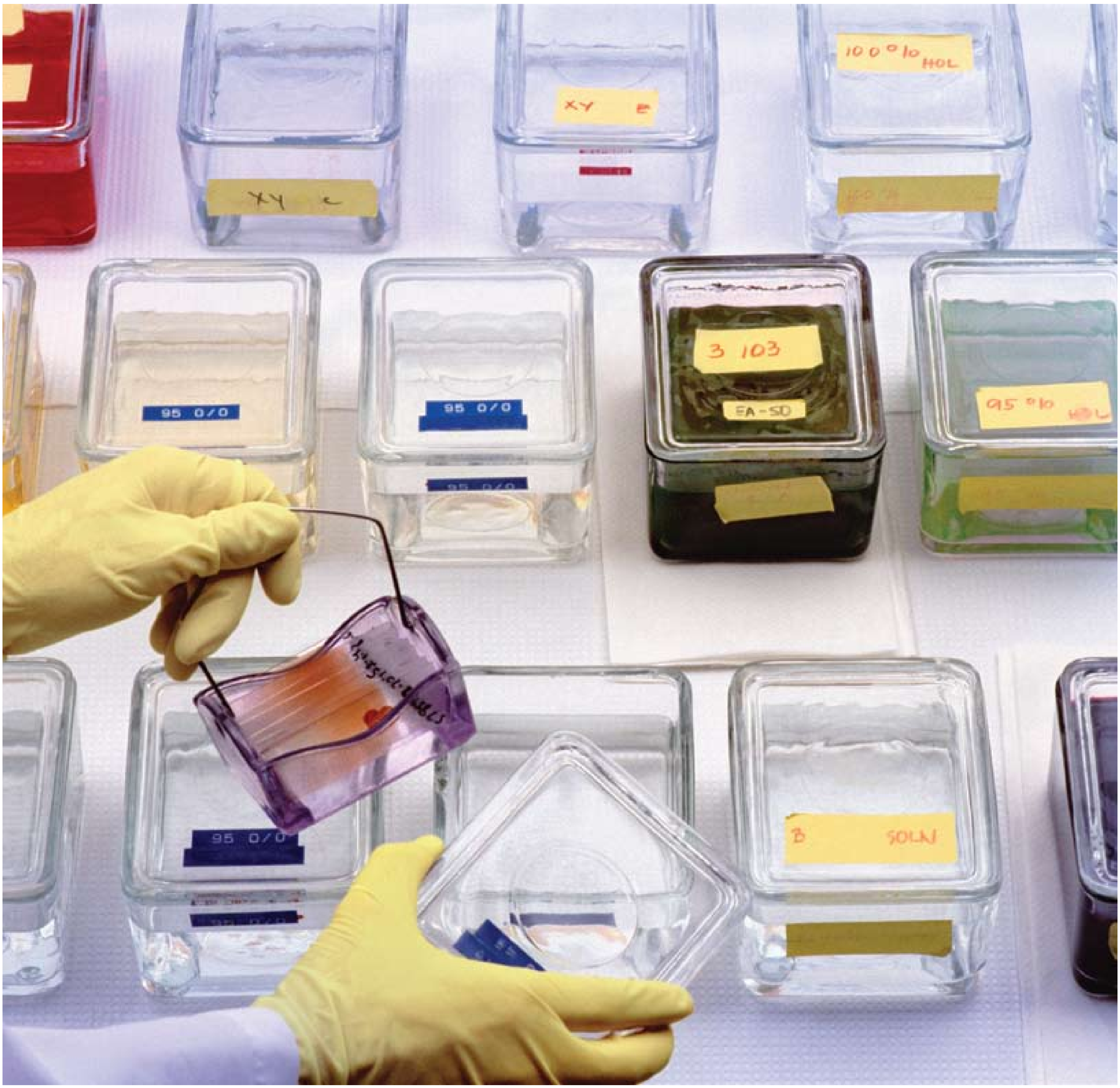
Survey respondents also foresee a large decline in the use of funding directed towards R&D. Only 42% ranked R&D in their top three use of funds (Figure 15) and only 62% intend to perform their R&D activities in Canada over the next two years (75% in 2007 and 58% in 2006). These statistics suggest a declining environment for Canadian based research which is unlikely to help build critical mass in the sector. This will likely be further exacerbated by the government of Canada's 2009 federal budget which allocated relatively few funds for public sector research in life sciences.

Figure 16: What are your main reasons for relocating your business? (respondents were asked to select top 3 choices)



“The entire global health care system is undergoing a seismic shift. The industry is being held far more accountable — for products that demonstrate outcomes at reasonable prices — by all players across the continuum. To flourish, companies will need to invest more in research, understand and demonstrate the value of their products, lower the cost of distribution, collaborate with partners at home and abroad, and provide value-added services to customers. Effectively meeting these challenges will deliver enormous rewards in terms of human health and business success.”

Simon Friend, PwC Global Pharmaceuticals & Life Sciences Industry Leader
11th Annual PwC Global CEO Survey



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2009 12th Annual PwC Global CEO Survey

Pharma 2020: Which Path Will You Take?

Canadian Life Sciences Database

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About PricewaterhouseCoopers

In Canada, PricewaterhouseCoopers has more than 5,200 partners and staff in locations from St. John's, Newfoundland to Vancouver, British Columbia.

Now celebrating 100 years of excellence in Canada, PwC provides industry focused assurance, advisory and tax services for public, private and government clients in corporate accountability, risk management, structuring, mergers and acquisitions, and performance and process improvement.

As part of a larger network of over 154,000 people in 153 countries, PwC works to provide clients with the best of its collective thinking, experience and solutions to build public trust and enhance value for clients and their stakeholders.

PricewaterhouseCoopers Pharmaceuticals and Life Sciences Practice
PricewaterhouseCoopers LLP has extensive experience working with organizations across the industry, including: proprietary and generic drug manufacturers, specialty drug makers, medical device and diagnostics suppliers, biotechnology companies, wholesalers, pharmacy benefit managers, contract research organizations, and industry associations. The firm also authors numerous thought leadership papers on emerging industry issues.
For additional information, please go online to www.pwc.com/ca/lifesciences

About BIOTECanada

BIOTECanada is the national industry-funded association representing the broad spectrum of biotech constituents including emerging, established and related service companies in the health, agricultural, and industrial sectors. 2007 marked the 20th year of the national association dedicated to the promotion and awareness of biotechnology and its public policy issues. Incorporated in 1987 as the Industrial Biotechnology Association of Canada, our national association continues to serve as the voice for industry leadership to build a sustainable environment for the community of researchers and innovators. BIOTECanada is dedicated to the sustainable commercial development of biotechnology in Canada. For additional information, please go online to www.biotech.ca

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