Macdonald & Associates Limited

Growing the Businesses of Tomorrow:

Challenges and Prospects of Early-Stage Venture Capital Investment in Canada

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Foreword

This report, prepared by Macdonald & Associates Limited for the Business Development Bank of Canada (BDC), Industry Canada, and the Ontario Ministry of Economic Development and Trade (MEDT), considers some of the key issues involved in Canadian venture capital (VC) investment in seed, startup and early-stage firms, after almost a decade of industry activity.

To do this, research work concentrated on two areas. First, using the Macdonald & Associates database, a brief analysis of market trends in Canada and Ontario between 1996 and 2004 was undertaken, with an emphasis on early-stage activity.

Second, a series of interviews were conducted with senior VC professionals with experience in the field. The latter initiative was intended to obtain industry practitioner feedback on the progress of Canadian early-stage activity in recent years, about challenges that confront industry players at present, and about prospects ahead.

Research findings are summarized in the following sections of this report:

Section I provides a very brief introduction to the topic of early-stage investments in the context of venture activity as a whole.

Section II contains a brief statistical analysis of seed, startup and other early-stage activity in the Canadian VC industry since 1996, with particular attention paid to trends over market cycles, by sector, region, investor type, etc., and as compared to selected trends in the American industry. In some cases, feedback on specific data points was obtained from interviewees, some of which is noted in the text.

Section III contains the results of interviews with senior VC professionals in Canada and the United States, based on survey questionnaires developed by Macdonald & Associates. These results touch on a wide variety of issues, and include ratings by angels and VC fund managers of key challenges related to early-stage activity in a Canadian context. This section also includes a brief look at potential public policy recommendations arising from the feedback of professional managers.

Section IV provides a brief conclusion to this report.

A brief description of early-stage investment terms used in this report is contained in Appendix B. For definitions of other market terms, please consult the Glossary at the Macdonald & Associates website at www.canadavc.com.

Macdonald & Associates would like to acknowledge with thanks the generous, expert participation of market participants and analysts in this project. Special thanks are offered to those involved in the project's consultation phase: Gilles Durufle, Andrew Harrison, Claude Haw, Doug Hewson, Stephen Hurwitz, Livia Mahler, Louis Marrett, Rick Norland, Kiera Torkko, Ilse Treurnicht and Sam Znaimer. We would also like to acknowledge the co-operative spirit of the project sponsors at the BDC, Industry Canada and Ontario MEDT.

Executive Summary

Since the late 1990s, Canada's venture capital (VC) industry has witnessed growth in the volume of early-stage transactions involving new businesses in clean technology, communications, information technology (IT), life sciences and other innovative sectors. Indeed, since this time, there has been a fundamental shift in industry focus towards early-stage activity as compared to prior years.

For this reason, the period 1996 to 2004 – which reflected both up- and down-cycles in VC investment – can be regarded as formative years of much Canadian industry activity in early-stage ventures. A key feature of this period was the emergence of a new generation of VC fund managers and funds, formed to apply specialized management practices and techniques to facilitate seed, startup and other early-stage deals.

This new community of balanced/specialty funds with early-stage mandates was largely responsible for the industry's refocus, in partnership with angel investors, and domestic and foreign sources of syndicate capital. As has occurred in the longer history of the United States (US) VC industry, such funds have been pioneers of value-added, early-stage company building in a Canadian market context.

Despite their clear influence on industry trends, early-stage investors have encountered major challenges along the way, not the least of which has been a prolonged market slowdown since 2001, and a difficult fund-raising climate that threatens to undermine or erode progress made to date, and block progress down-the-road.

In addition, seasoned early-stage investors believe strongly that there are lessons to be learned from the experience of recent years. A key message was that the process of early-stage VC investment in Canada must be more strategic, and much better capitalized, going forward, and with even greater onus placed on adding value. This can be achieved, they say, through industry concentration on management skills relevant to growing fledgling firms, more and larger-sized funds, increased deal sizes, and further development of the Canadian ecosystem for venture activity as a whole. By tackling such issues, domestic industry capacity for undertaking early-stage investments can be greatly enhanced.

These are just some of major findings of Growing the Businesses of Tomorrow: Challenges and Prospects of Early-Stage Venture Capital Investment in Canada, which examined early-stage activity in Canada and Ontario since 1996, using statistics extracted from the Macdonald & Associates' database, and comparative US data (Section II of the report, **Trends in Early-Stage Venture Capital Activity in Canada, 1996-2004**), coupled with the insights of senior VC professionals, obtained in interviews conducted by over December 2004 – January 2005 (Section III, **Results of a Survey of Canadian and US VC Professionals**)

Key Findings of the Statistical Analysis

Macdonald & Associates' data show that early-stage activity in the VC industry in Canada (and Ontario) saw exceptional growth in the latter half of the 1990s, as seed, startup and other early-stage deals gained considerable traction with respect to numbers of companies financed and capital invested, and even succeeded in outstripping aggregate trends in peak years of activity.

While activity in early-stage ventures began to decline in absolute terms with the market downturn, its relative share of total VC activity was largely sustained as compared to previous years. For instance, prior to 1999, seed deals accounted for just over 1% of dollars invested annually, but have sustained over 2% since then. Similarly, in the lead-up to 2000, startups obtained just over 10% of industry cash, but have typically registered something closer to an 18% share thereafter.

This attests to the nature of market change since 1996, that the data further show to have been concurrent with greater emphasis of emerging telecommunications, IT, life sciences and other technology-intensive sectors of some critical mass, in key urban regions of the country.

The data further indicated that relatively large company financing sizes, particularly in IT sectors, have been integral to high levels of disbursements going to early-stage activity. The activity of diverse industry players, including government funds, LSVCC and other retrial funds and private-independent funds, contributed to this trend. This activity frequently involved major syndicates that tapped substantial supplementary resources from American VC funds and other foreign investors – at least since 1999 – though non-residents have tended to invest in only a fraction (5-6%) of all Canadian early-stage firms.

Private-independent funds were integral to growth in seed investment up to 2000 and have remained key to activity since then, while LSVCC/retail and government funds have steadily increased their relative shares, especially after 2001.

These trend lines notwithstanding, the data further reveal a major, and persistent gap between the average sizes of Canadian early-stage financings and those in the US. For instance, since 2000, the average capital infusion in related deals in Canada has typically been less than half of the average south-of-the-border.

Key Findings of the Interviews

Reflecting on industry trends, professional managers surveyed for the report agreed that a fundamental shift in focus towards early-stage activity has taken place since the late 1990s, which they linked with the emergence of dedicated Canadian early-stage VC funds (Macdonald & Associates data show most related fund inceptions as occurring between 1995-2001).

While stressing the central importance of this development, VC professionals also emphasized the challenges that early-stage investors now encounter following three years of a slower market, and a fund-raising environment that has become increasingly tough for industry players of all types (a fact that has also been confirmed in Macdonald & Associates' data), chiefly because of limited capital sources. This is an especially critical issue for funds that have recently become fully invested or near fully invested.

Challenges with roots in the market's down-cycle have also existed for an essential partner to venture fund managers undertaking early-stage activity – angel investors. In response, the interviews found that a new strategy being embraced by many Canadian angels was "collectivization", or the forming of groups that provide for risk mitigation and resource sharing. To this end, organizations like the Ottawa Angel Alliance and the Toronto Angel Group have recently been built on a well-established US model.

To clarify the nature and significance of specific issues confronting early-stage investors, interviewees were asked to rate a list of thirteen "challenges", identified in pre-survey consultations by Macdonald & Associates. Industry practitioner rankings of these challenges (see Figure 15, Section III, **Results of a Survey of Canadian and US VC Professionals**) were accompanied by commentary, based on "lessons learned" since the late 1990s. This was mixed with feedback from American fund managers who have addressed similar issues over a longer span of time.

Of the thirteen early-stage "challenges", eight attracted especially high ratings from survey respondents (on a scale of 1-5, an average rating of between 3.2 and 4.4).

The highest rated issue concerned VC professional skills sets relevant to investing in early-stage ventures. Respondents said that such activity required a unique blend of specialized skills that pertain to company creation, including operating experience. Without access to these skills, venture fund managers were unlikely to add sufficient value to assist fledgling firms in their growth.

Industry practitioners also gave some weight to the sector knowledge of early-stage investors, though this challenge was not ranked as highly as company building skills. In general, respondents saw this expertise as being most relevant to very specialized areas of innovative activity (e.g., life sciences).

Survey respondents also argued that first generations of Canadian early-stage VC funds have typically been too small, as both balanced and specialty funds must have adequate resources to handle a full cycle of new and follow-on company financings. For this reason, a goal of new early-stage fund formations must be greater capital depth. This challenge took second spot among interviewees.

Equal significance was accorded to undercapitalization of early-stage transactions in the industry. Survey respondents were not surprised by the Macdonald & Associates' data finding of a Canada-US gap, noting that this has created a major competitive disadvantage for young Canadian technology businesses, given the importance of "time-to-market" in the VC world, and particularly in certain sectors.

VC professionals also placed a great deal of emphasis on the number of active early-stage VC funds. Despite recent fund formations, and several new fund products on offer in 2005, respondents believed there are too few effective early-stage investors in Canada, generally, and in specific regions and sectors.

Among the other highest-rated challenges, the issue of too few local business managers available for company building was singled out, which survey respondents said was a result of nascent Canadian technology sectors. For much the same reason, interviewees also thought there remained too few experienced entrepreneurs to found new businesses, though this situation has improved somewhat recently.

VC professionals were also concerned about the number of co-investors necessary to take venture-backed firms through successive stages of development. With regard to this issue, respondents expressed a strong interest in increasing access to US VC funds, due to their abundant market experience and deep pockets.

Throughout their commentary, Canadian and American industry practitioners proposed various, marketed-based strategic responses for addressing the challenges discussed. They also emphasized that the formative years of early-stage activity in Canada has produced significant VC management talent that must not be squandered in the years ahead – for instance, due to capital supply shortages.

Some Public Policy Recommendations

Professional managers also reflected on the role of federal and provincial governments in the area of early-commercialization, noting that public policy would be most effective by supporting the development of the broader ecosystem in which market activity occurs.

Along these lines, several initiatives by which public policymakers could support early-stage activity in the Canadian VC industry were recommended. These include: Encouraging more institutional investor participation in the market; establishing a government role as limited partner in private funds, perhaps via funds-of-funds; investing in proof-of-principle activity at the front-end of early-stage projects; facilitating entrepreneurial skills development; assisting in the local organization of angel investors, and; removing tax and legal barriers that unnecessarily impair cross-border activity in early-stage syndicates.

I. Introduction

The Unique Role of Venture Capital

Multiple research studies have detailed how VC activity is capable of transforming the innovations of R&D into value, and product ideas into major corporations, through a unique combination of financing and professional management (e.g., see Gompers & Lerner, The Money of Invention, Harvard Business School Press, 2001). A vibrant VC market can – despite its relatively small size – achieve superior, risk-adjusted returns for its investors, and simultaneously have a disproportionately large impact on a nation's economic growth, employment and productivity levels.

This same research frequently discusses how VC investment takes place in a dynamic and always evolving ecosystem. One part of this ecosystem feeds demand – e.g., researchers working on inventions in hospitals, laboratories, post-secondary institutions and centres for research, technology transfer and commercialization, and entrepreneurs working independently or in business to design new technologies or new applications of existing products.

The other part of this ecosystem handles supply – e.g., angel investors, managers of VC funds, and diverse market agents that provide not just money, but also mentoring and other value-added services to activity emerging on the demand side.

A VC market's success in generating value and economic wealth depends on how its ecosystem develops over time. In the United States, VC's birthplace, several decades of activity has created a sophisticated, entrepreneurial environment matched by an investor community with deep pockets and refined practices.

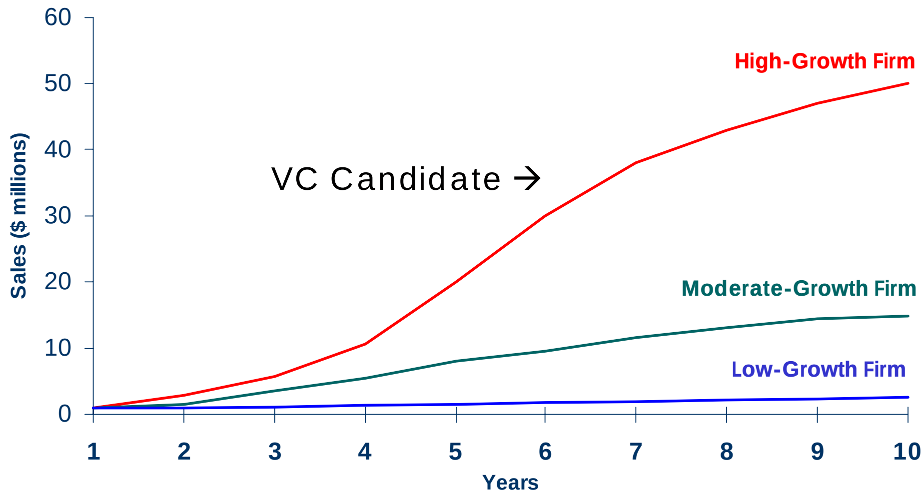
Canada's Evolving Venture Capital Marketplace

In Canada, such activity has also been underway, albeit for a shorter period of time, and involving a comparatively young industry.

It has been widely acknowledged that Canada possesses a rich innovation system, based on significant R&D investments, a growing class of entrepreneurs and business managers in competitive technology sectors, and an increasingly diverse VC industry. It has been further recognized that the Canadian ecosystem for VC activity must continue to evolve if it is to thrive and prosper (e.g., see Macdonald & Associates, *Finding the Key: Canadian Institutional Investors and Private Equity*, 2004).

VC Focuses on Young, High-Growth Firms

FIG 1:
Typical SME Growth Profiles



As the following report will show, a key aspect of recent market development in Canada has been growth in the quantity and quality of early-stage ventures. While the Macdonald & Associates' database indicates that such activity has always been a focus of Canadian VC – helping to spawn major businesses in clean technology, information technology (IT) and life sciences – activity of particular size and scope did not occur until the late 1990s (see Section II, **Trends in Early-Stage Venture Capital Activity in Canada, 1996-2004**).

Challenges to Undertaking Early-Stage Activity

The importance of this trend should not be underestimated. As one professional manager interviewed for this report said, early-stage funds are the "heavy-lifters" of the VC industry. Together with angels, these funds devote time and energy to helping entrepreneurs and inventors turn their concepts into young companies. Ultimately these businesses may, over the course of their lifecycles, create new markets or market niches, or take market share away from well-established competitors.

As VC professionals said repeatedly in interviews (see Section III, **Results of a Survey of Canadian and US VC Professionals**), this process is risky, long-term and management-intensive. Furthermore, it requires skill and patience on the part of VC fund managers, as early-stage investing is replete with trial and error. However, industry practitioners also agreed that, with persistence, the rewards should match the effort, as such activity acts as a pipeline for future high-growth firms (see Fig. 1).

As this report will also show, a number of specialty early-stage VC funds, or balanced funds (i.e., funds organized to integrate a broad market focus) with significant exposure to this activity, have recently been passing through their formative years in the Canadian market. Despite some successes, these funds also face challenges, including a still-evolving ecosystem, a prolonged down-cycle in the VC marketplace in recent years, and shortages of capital supply. These issues are discussed at greater length in Section III.

This report aims to touch on the key challenges currently facing Canadian industry practitioners engaged in early-stage activity, and to reflect some of their concerns and expectations for the future.

II. Trends in Early-Stage Venture Capital Activity in Canada, 1996-2004

II.1 Overview of Statistical Analysis

The following is an overview of essential analytical points contained in Section II.2 **Analysis of Venture Capital Statistics**. More detail information and sources are found in pages 8-24.

Early-stage activity in the Canadian VC industry witnessed exceptional growth in the latter half of the previous decade. During this time, activity in seed, startup and other early-stage deals gained considerable traction with respect to numbers of companies financed and capital invested, and even succeeded in outstripping aggregate market trends.

While activity in early-stage ventures began to decline with the slowing of the market in Canada, beginning in 2001, its relative share of total VC activity was largely sustained as compared to pre-2000 levels, at least on a national basis. In 2004, Canadian early-stage investment saw its first year-over-year growth in absolute terms in three years.

Other key points observed in the 1996-2004 data analysis of Macdonald & Associates include:

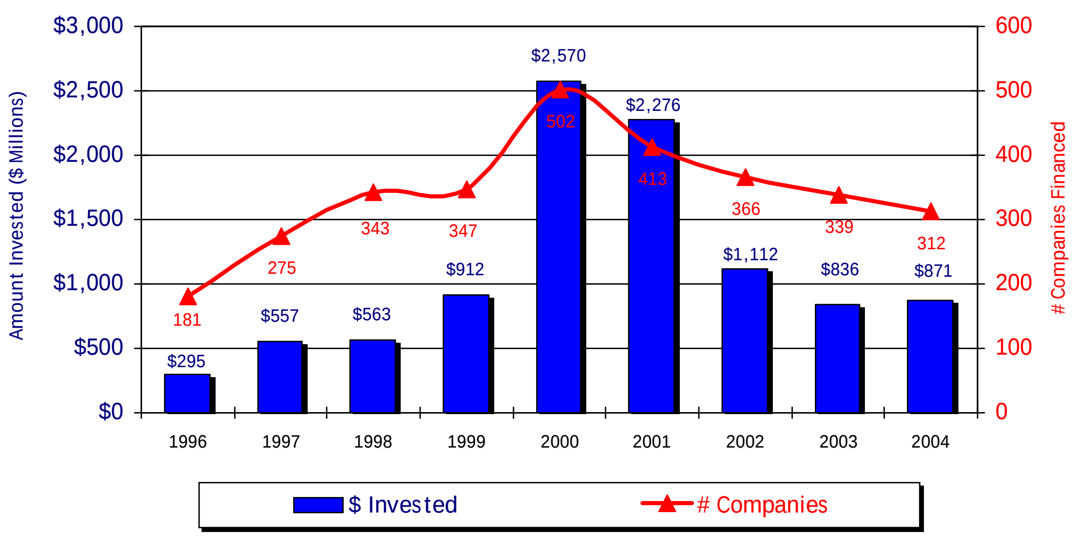
- Early-stage activity in Ontario has tended to follow the same pattern observed on a Canada-wide basis since 1996, but with even more intense activity taking place during the boom years.
- Canadian industry activity in seed and startup deals saw very robust growth in the years immediately preceding 2000, consuming unprecedented VC resources, in part because of increasingly large company financing sizes.
- Prior to 2000, early-stage activity represented approximately one-third of national industry disbursements per annum. In 2000 and thereafter, such activity captured closer to half of resources.
- Prior to 1999, seed transactions accounted for just over 1% of dollars invested annually in the industry in Canada, but have sustained over 2% in subsequent years. Similarly, in the lead-up to 2000, startups obtained just over 10% of industry cash, but have typically registered something closer to an 18% share on average since then.
- Once again, Ontario has followed the same pattern of seed, startup and early-stage investment, but with some weakening of relative shares of total VC activity in recent years.

- National activity in technology sectors, and particularly telecommunications and other IT sectors, as well as life sciences, have tended to drive early-stage trends, with large-sized company financings influencing disbursement streams in the peak years.
- Given the link between local innovative sector clusters and fledgling firms, the lion's share of early-stage activity has occurred in British Columbia, Ontario and Quebec, and in such key Canadian urban centres as Vancouver, the GTA, Ottawa and Montreal.
- Capital-intensive early-stage transactions in IT sectors gave Ontario an above average share of national activity in the boom years.
- Among Canadian industry players, LSVCC/retail funds and private-independent funds have generally been the most active in early-stage activity over market cycles in 1996-2004. Government funds have also assumed a central role, particularly since the market downturn got underway in 2001.
- Private-independent fund activity was integral to growth in seed investment up to 2000 and has remained key to trends, while LSVCC/retail and government funds have steadily increased their relative shares, especially after 2001.
- American VC funds and other foreign investors have brought substantial resources to early-stage investment syndicates in Canada since 1999, accounting for between one-quarter and one-third of total capital invested per annum. However, non-resident disbursements have tended to reach only 5-6% of all early-stage companies receiving VC.
- American and other foreign venture investors have proved especially influential in Ontario-based early-stage trends.
- The average amount invested per Canadian early-stage venture has typically been less than half that of comparable American firms.
- Ontario's early-stage deal capitalization has typically exceeded the national average on an annual basis, but still reflected a shortfall as compared to the United States.

II.2 Analysis of Venture Capital Statistics

Early-Stage VC Activity in Canada Since 1996

FIG 2:
Early-Stage Dollars Invested and Companies Financed in Canada



Prior to the mid-1990s, VC investment in Canada was chiefly geared to businesses that were expanding or otherwise at a late stage of development. Market orientation began to change in a significant way in the lead-up to 2000, as seed, startup and other early-stage deals began to attract more industry attention, and to consume unprecedented capital resources.

To illustrate: Over 1996-1999, early-stage company financings captured roughly one-third of total industry disbursements, however, in 2000, this share rose to 44%.

Of course, 2000 was a peak of venture activity in North America and around the globe. In Canada, rates of capital invested and deals done had been climbing steadily in the latter half of the 1990s, but in the boom time of 1999-2000, they grew to new heights. Indeed, VC dollars invested better than doubled during this time, from $2.6 billion to $5.8 billion.

Naturally in this environment, early-stage ventures were likely to prosper along with the rest of the market. However, growth rates at this end of the investment spectrum were especially robust, outstripping aggregate trends. Between 1999 and 2000, disbursements to early-stage transactions came close to tripling (from $912 million to $2.6 billion). Within this category, startup activity alone grew by a factor of 3.8 times (from $282 million to $1.1 billion).

What explains the dramatic change in the market preferences of VC activity in Canada? Several converging trends help tell the story, said professional managers interviewed for this report.

One factor was an increasing volume of deal flow favouring new generations of firms in IT, life sciences and other sectors. In the boom cycle that culminated in 2000, multiple new business formations – the product of years of R&D and entrepreneurial activity in Canada's innovation system – was matched with growth in available VC resources.

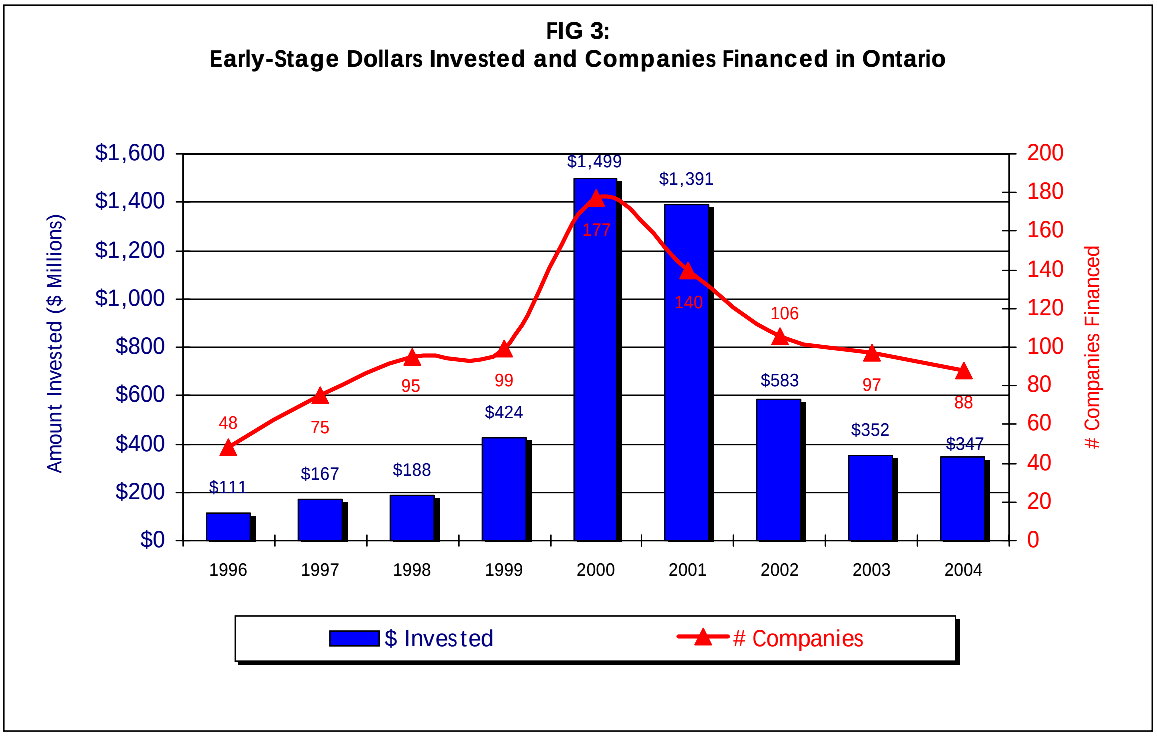
Another variable was emergence of a larger Canadian community of specialty early-stage VC funds, as well as balanced funds with significant exposure to this activity. Many such funds were formed in the years immediately preceding the boom (Macdonald & Associates data show most related fund inceptions occurring between 1995-2001).

In addition, Canadian industry players found new sources of partnership capital for early-stage syndicates. For example, the allure of red-hot technology activity led to fresh resources being pumped into the market by corporate and institutional investors. Perhaps more strategically important – and longer-term – was growth in cross-border activity, particularly as American VC funds discovered attractive deal opportunities in this country, many of them for the first time.

In the post-2000 slowdown, early-stage activity tended to decline with the whole of the market. This was less evident in the first year of the down-cycle, when factors influencing a historically high rate of activity (e.g., new funds, more cross-border activity) remained in play. Regardless, activity fell steadily on a per annum basis until 2004, when an upturn in dollars invested in startup deals signaled some potential stabilization of early-stage VC trends.

However, 2004 also witnessed the third consecutive year of reduced fund-raising in the Canadian VC industry, as new capital commitments totaled $1.7 billion, down by 15% from 2003's $2.0 billion. Industry practitioners identified the current supply situation as a critical concern for seed and other early-stage funds looking to sustain their activity into 2005 and beyond (see also **Early-stage venture capital pools are too small** and **Too few venture capital funds focused on early-stage**, in Section III.3).

Early-Stage VC Activity in Ontario Since 1996



When it comes to early-stage ventures, activity in Ontario between 1996 and 2004 has tended to follow the same pattern observed on a Canada-wide basis.

Up to 1999, early-stage company financings in Ontario absorbed between one-quarter and one-third of total capital invested by the industry. In 2000, disbursements to seed, startup and other early-stage transactions skyrocketed, reaching $1.5 billion, or better than three times the $424 million registered the year before, and 44% of the aggregate amount.

VC professionals interviewed for this report said that many of the same factors influencing the Canadian trend were also evident in Ontario – an enlarged community of balanced and specialty funds with early-stage mandates, matched with fresh deal opportunities in innovative sectors, and particularly in IT. However, beginning in 2000, the province would take an increased proportion of national resources flowing to early-stage activity, in large part because of above average levels of foreign participation (see **Early-Stage Activity Concentrated in BC, Ontario and Quebec**).

Despite steep declines in total VC activity at the time of the market downturn, early-stage activity remained a focus of the industry in Ontario in relative terms. However, while provincial activity as a whole grew in 2004, there was no accompanying growth in early-stage investment, as there was nationwide.

Major Growth in Seed, Startup Activity Prior to Slowdown

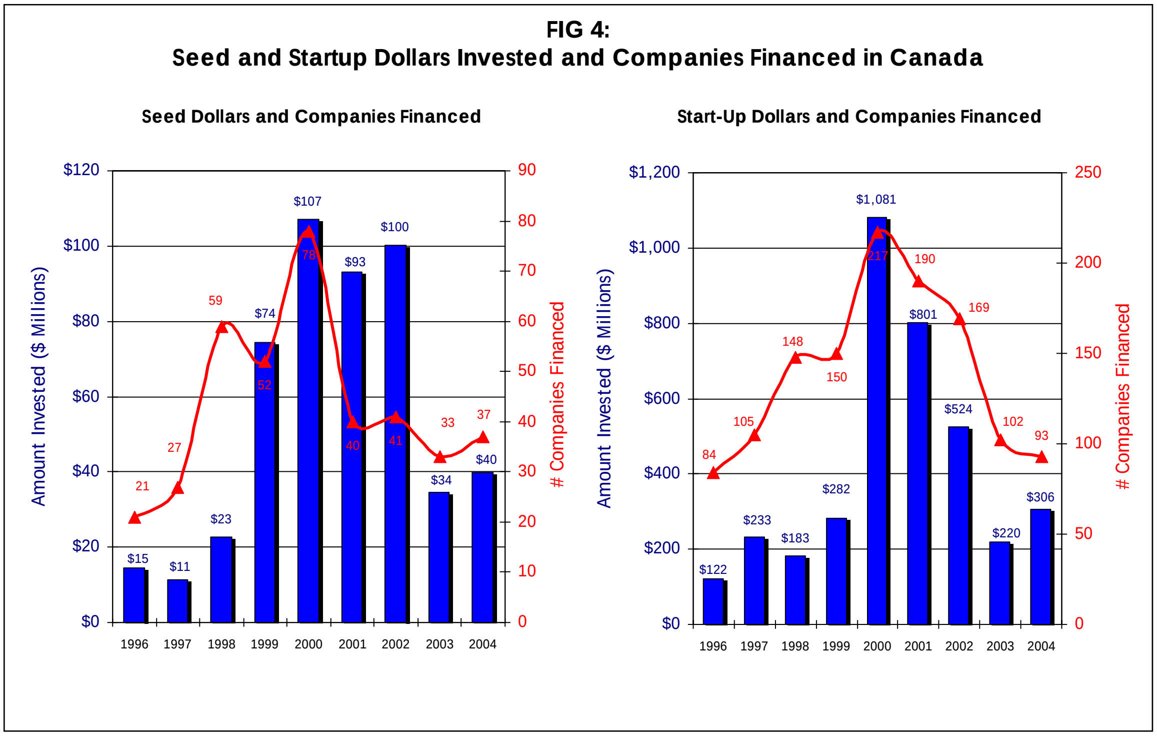


Fig. 4 highlights the particular trajectory of VC activity in seed and startup transactions in Canada in the lead-up to 2000, and in the years of the weaker market that followed.

Industry practitioners interviewed for this report said that an unprecedented stream of seed-related disbursements and deals done was activated during the second half of the decade by the launch of specialty funds. These included the Eastern and Western Technology Seed Investment Funds, managed by Ventures West Management, the three Quebec-based funds managed by T2C2 Capital, funds such as Foragen Technologies LP, Milestone Medica LP and Primaxis Technology Ventures that emerged from a sector-specific initiative of RBC, and activity of BDC Venture Capital Group.

Upward momentum in seed activity was first apparent in 1998, when the number of companies financed doubled on a year-over-year basis. VC invested also doubled at that time, but increased even more appreciably in 1999, and again in 2000, when disbursements hit $107 million.

Ever-larger dollar infusions into seed deals were primarily attributable to highly capital-intensive fledgling firms in IT, such as Inkra Networks of Burnaby, BC ($US26.5 million in 2000). Such transactions pushed the average company financing beyond the million-dollar mark in 1999, and to $2.3 million by 2001.

The pre-2000 growth path for company startup activity was even more impressive, also due to growing numbers of balanced and specialty VC funds prepared to undertake them, according to professional managers.

As was noted earlier, startup activity was a major driver of robust market conditions in 2000, and was hardly less influential in Canadian VC trends in 2001-2002. Once again, a key factor was larger average amounts invested per firm, which saw a dramatic rise between 1999 and 2000, from $1.9 million to $5.0 million. Also like seed deals, heftier disbursements to startups owed chiefly to cash-hungry IT companies, and particularly those in telecommunications.

Despite the post-2000 downturn, activity in seed and startup ventures stayed at fairly high levels – at least by historical standards – until 2003. By then, the climate was less hospitable, as industry players grew cautious, and in some cases, redirected their market focus. However, in 2004, capital invested in startups increased for the first time in three years, to $306 million, while seed activity also made gains, taking $40 million.

For a comparable figure highlighting related trends in Ontario, please see Fig. 16 in Appendix C.

Early-Stage Activity in Post-2000 Sustains Relative Share of Total VC

FIG 5:
Dollars Invested and Companies Financed in Canada by Stage

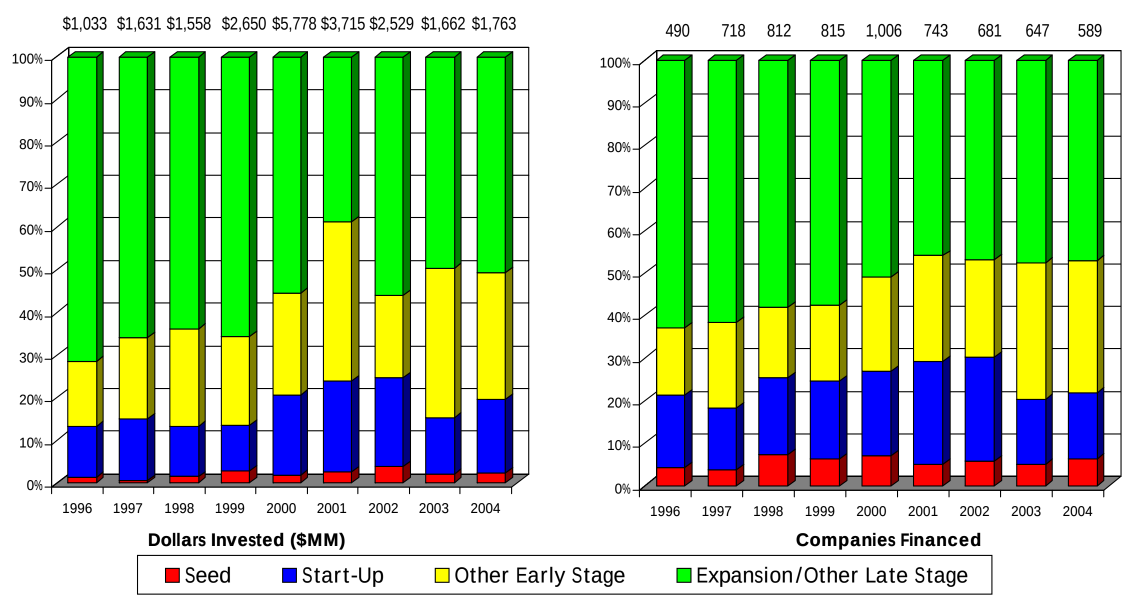


Fig. 5 sheds light on the progress of Canadian VC industry activity in seed, startup and other early-stage deals over the up-and-down market cycles of 1996-2004, as a percentage of overall activity.

As was noted previously, early-stage company financings secured around one-third of total dollars invested annually prior to 2000, when their take rose to 44%. Interestingly, as the market began to soften in 2001, this share nonetheless increased to 61%. As the slowdown deepened in 2002-2003, resources ear marked for early-stage ventures did not revert to pre-2000 levels – on a relative basis at least – but instead remained at close to half of all disbursements.

Moreover, while seed deals accounted for just over 1% of venture disbursements in aggregate prior to 1999, this portion increased to 2.8% in that year, and has tended to stay above the 2.0% mark ever since. Similarly, between 1996 and 1999, startup deals took over 10% of total activity, but beginning in 2000, have more often registered something closer to an 18% share, on average.

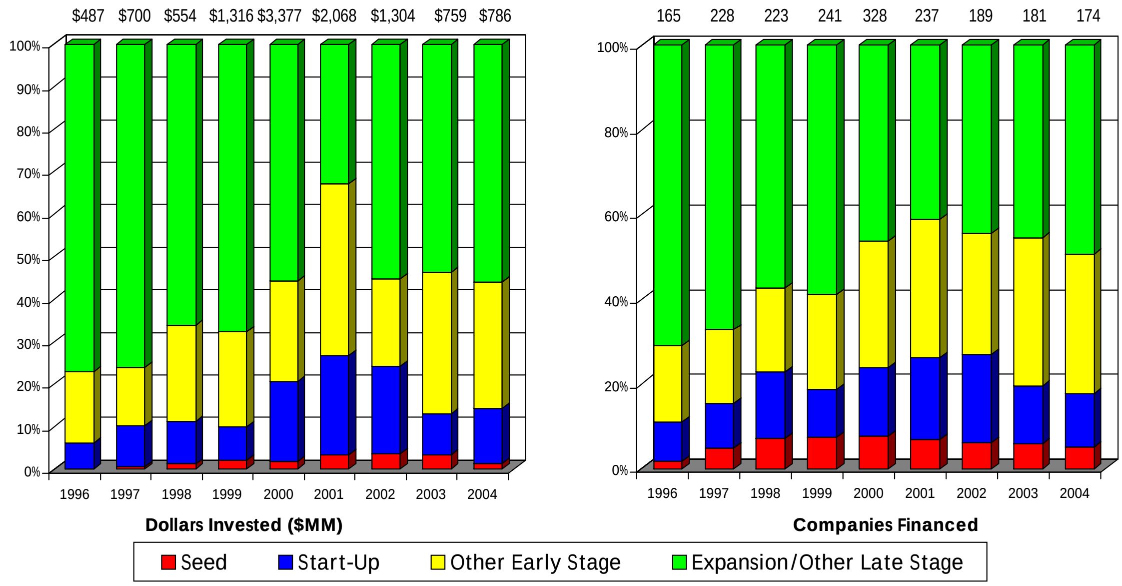
In other words, while absolute VC flowing to early-stage activity has declined since the onset of the market downturn, their share in relative terms has been, for the most part, stable.

Professional managers interviewed for this report argued that the relative share of total activity assumed by early-stage ventures has remained stable due to the continuing influence of balanced and specialty funds with mandates for this activity. Despite the serious stresses imposed on these funds in recent years, VC professionals believed they have facilitated a potentially longer-term shift in market focus.

Several industry practitioners also thought there was a backlog of fledgling firms in Canadian VC portfolios due to the slowdown, as funds have focused on survival strategies for companies financed during the boom years.

Ontario Early-Stage Activity's Share of Cash Shows Decline Recently

FIG 6:
Dollars Invested and Companies Financed in Ontario by Stage



As compared to the entire Canadian VC industry, seed, startup and other early-stage activity in Ontario has responded somewhat differently to changes in market cycles in recent years.

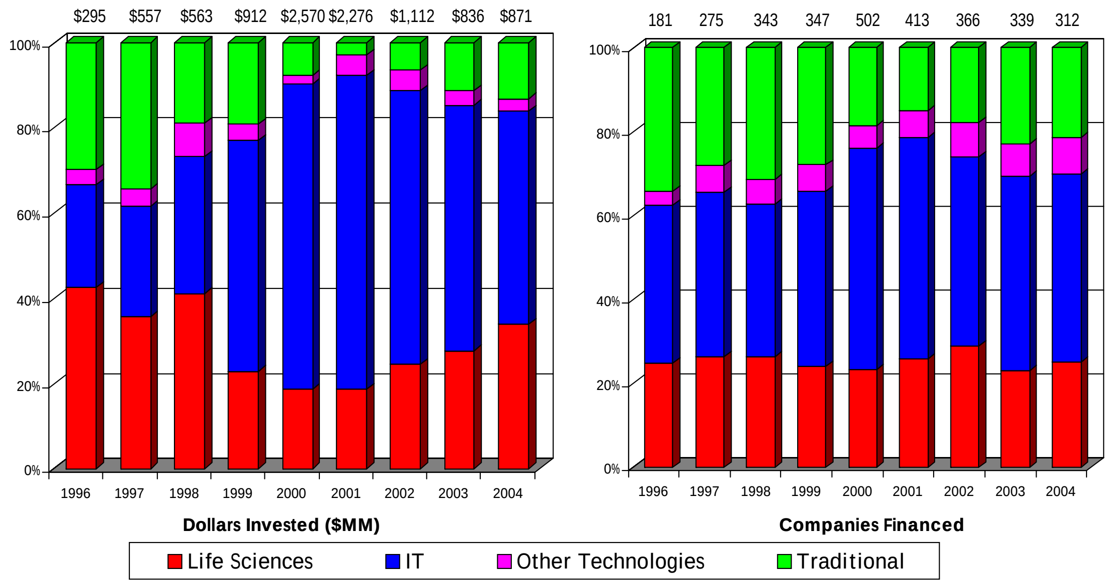
As the down-cycle in the market took hold in 2001, early-stage company financings based in the province continued to attract a major portion of amounts disbursed by the industry, with an all-time height of 67% attained in that year. In addition, in the years that followed, Ontario's overall early-stage activity tended to stay at relatively high levels as a percentage of total VC activity, as compared to the pre-2000 period – just as it did across the country.

Initially, this was also the case for seed deals done in Ontario, which averaged between 3-4% of all industry resources in 2001-2003, or well surpassing levels in the pre-2000 market environment. However, in 2004, provincial seed activity's take dropped to 1%. Similarly, while startups captured approximately one-fifth of total capital invested over 2000-2002, these shares were much lower in 2003 (10%) and 2004 (13%).

The recent decline in seed and startup disbursements in Ontario appears to be influenced chiefly by smaller transaction sizes. In 2004, capital injections in seed ventures averaged $1.1 million, versus an average of $2.3 million the year before, while startup company financings averaged $2.8 million and $4.6 million in 2003 and 2004, respectively, as compared to $6.7 million in 2002.

Emerging Tech Sectors Drive Early-Stage VC Trends

FIG 7:
Early-Stage Dollars Invested and Companies Financed in Canada by Sector



The lead-up to 2000 not only entailed a movement in Canadian venture industry activity away from later-stage deals to early-stage ones, but a shift from traditional businesses to those in technology sectors. Of course, these trends were coupled, as early-stage activity since the late 1990s has typically engaged IT, life sciences and other innovative firms.

Indeed, by 1999, early-stage ventures were spread across a wide array of emerging technology sectors in Canada.

In that year, activity in biopharmaceuticals and other life sciences led in this regard, accounting for nearly one-quarter of early-stage companies financed and disbursements. Since then, this sector has held a comparable share of VC-backed firms, but in 2000-2001, encountered fiercer competition from IT sectors when it came to industry cash.

In 2002-2004, life sciences bounced back, in part because of several major early-stage company financings, such as Xanthus Life Sciences of Montreal ($US30.8 million, 2003) and Aspreva Pharmaceuticals of Victoria, BC ($US57.0 million, 2004). Prior to then, much activity in the life sciences sector was not as dollar-weighted as activity in IT sectors.

In 1999, activity in early-stage IT companies showed clear signs of growth. One of the fastest-growing sectors was internet products, which captured 21% of early-stage resources that year. However, the magnitude of this trend was short-lived, with disbursements falling to 4% by 2002.

There was also mounting industry enthusiasm for young firms in communications and networking in 1999, featuring some exceptionally large early-stage deals in the fibreoptics and photonics space. By 2000-2001, related companies, which rarely assumed more than 10% of all early-stage activity, were absorbing almost one-third of dollars invested. A good example was Tropic Networks of Ottawa, which alone secured $US60 million at the time of its startup in 2000.

In keeping with market realities, many fledgling telecommunications firms have persevered, while others (e.g., Ottawa-based Ceyba) did not survive what proved to be a volatile period in 2002. More recently, early-stage ventures in communications have witnessed some revival in industry interest, and particularly in several key sub-sectors, such as wireless products.

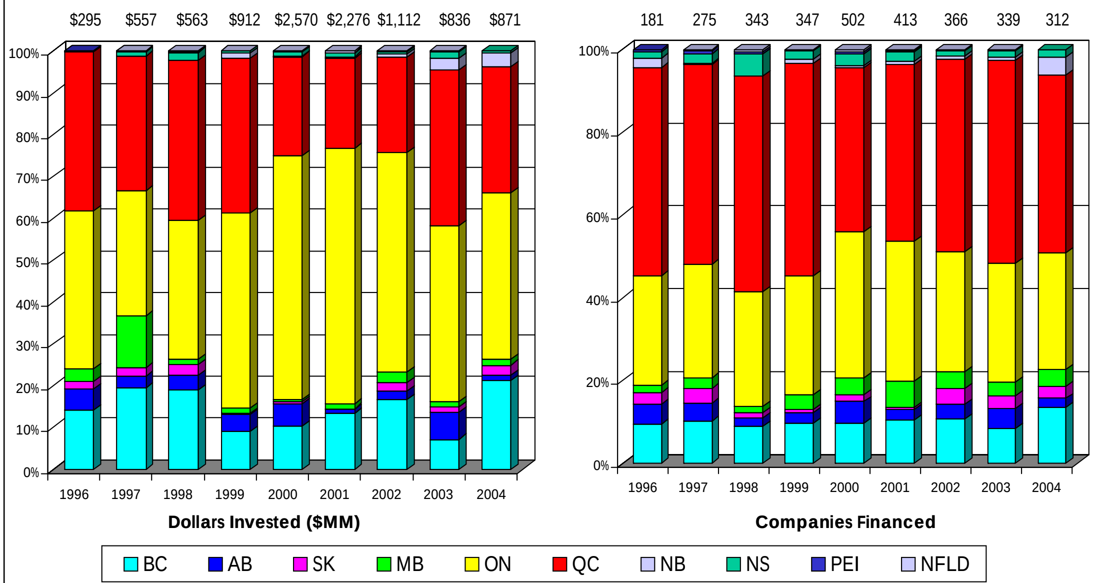
Trend lines for other young IT companies have fluctuated similarly. Despite cyclical swings, firms in electronics and semiconductors have reflected a fairly steady proportion of overall early-stage disbursements, as have firms in computer software.

In 2003 and 2004, market conditions for VC-backed acquisitions and initial public offerings (IPOs) appeared to have improved in North America, benefiting several Canadian technology companies with early-stage origins of only a short time ago. High profile examples include Ottawa's Akara Corporation and Catena Networks (telecommunications), Toronto's Q9 Networks (internet-related) and Workbrain Corporation (software), Mississauga's Chantry Networks (telecommunications) and Burnaby BC's QuestAir Technologies (alternative energy).

For a comparable figure highlighting related trends in Ontario, please see Fig. 17 in Appendix C.

Early-Stage Activity Concentrated in BC, Ontario and Quebec

FIG 8:
Early-Stage Dollars Invested and Companies Financed by Canadian Province



Early-stage activity is closely linked with trends in sector clusters in key urban centres of the country, such as Montreal's life sciences cluster and the information and communications technologies clusters in Ottawa and Toronto. As sector clusters have developed over time, so too has VC deal flow.

Fig. 8 indicates some outcomes of venture activity vis-à-vis sector clusters at the provincial level.

Between 1996 and 2004, most early-stage ventures were concentrated in the three largest provinces: British Columbia, Ontario and Quebec. In fact, over this period, companies financed in these provinces represented 85-90% of the total in this category, as well as over 90% of total dollars invested.

Since the mid-1990s, seed, startup and other early-stage activity in the Quebec market has accounted for nearly half of companies financed on a national basis. Over the same period, comparable activity in Ontario represented 25-30% of all firms, except in 2000-2001, when burgeoning early-stage activity increased the province's share to approximately 35%.

In 1996-1998, there was almost parity between Ontario and Quebec regarding aggregate disbursements to early-stage transactions. This situation changed in 1999, when increasingly large IT deals pushed Ontario's take to 46%. In 2000, the province captured an even greater 58% of Canadian industry resources going to early-stage activity – a level that did not subside significantly until 2004.

The relative capital intensity local sectors helps to explain the discrepancy between Ontario and Quebec since 1999. With the heavier weighting of life sciences deals (which have often been smaller than telecom/IT deals) in Quebec's early-stage activity, for example, it is not surprising that at the peak of venture activity in Canada – 2000 – average capital infusions per firm stood at $3.1 million, as compared to a $8.5 million average in Ontario.

Between 1996 and 2004, the market in British Columbia has consistently reflected around 10% of early-stage company financings nationwide. The province's share of capital invested in this area has fluctuated more widely (e.g., 7% in 2003 versus 21% in 2004), but has generally averaged between 10-15%.

At approximately 10% of the national aggregate per annum, the number of venture-backed firms at an early stage of development in the Prairie provinces has also been fairly consistent over this period, while disbursements to these have tended to fall within the 5-8% zone.

In Atlantic Canada, early-stage activity was steady over 1996-2004 with respect to companies financed, with a 3-5% share of Canadian VC activity. Up to 2002, regional dollar flows rarely exceeded 2% of the aggregate, however, this level rose to 4% in both 2003 and 2004.

Major Canadian Cities Attract Most Early-Stage Dollars

FIG 9:
Early-Stage Dollars Invested by Major Urban Centre

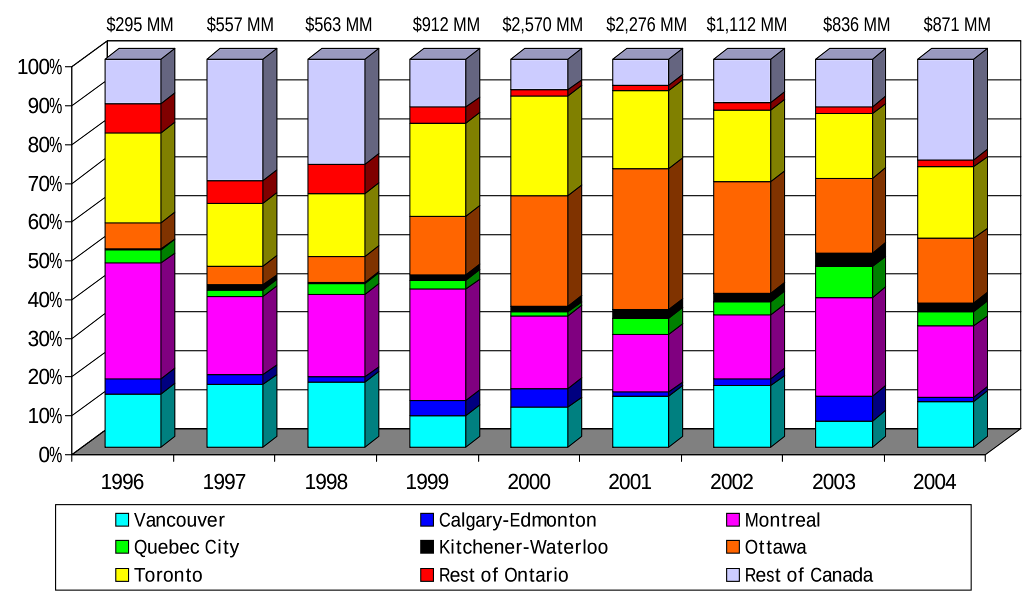


Fig. 9 amplifies on the geographic distribution of early-stage activity in Canada by highlighting disbursement trends by city and region. Above all, the data point to the metropolitan character of much VC investment, which is interested in local sector clusters that have achieved some critical mass.

Ontario's predominant take of dollars invested in seed, startup and other early stage company financings has traditionally been based on activity in the Greater Toronto Area (GTA). In the years prior to 2000, the GTA secured around one-fifth of the national aggregate. However, during this period, it was the Montreal region that succeeded in attracting the largest fraction overall, with roughly one-quarter of disbursements.

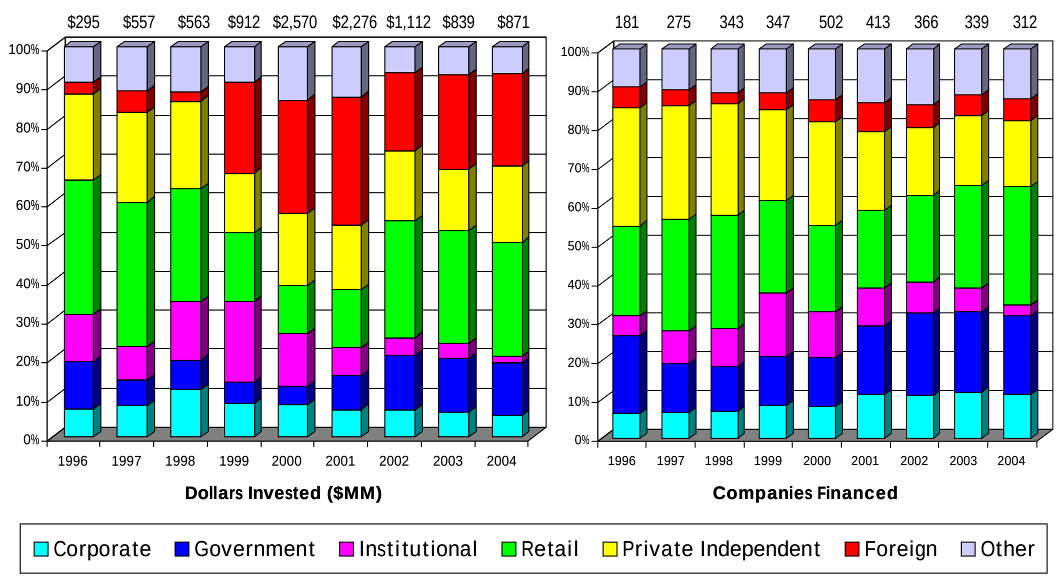
In 2000, the landscape changed considerably, given the increasingly heated investment climate in the Ottawa Valley. In that year, and in each consecutive year until 2003, major early-stage deals in telecommunications and other IT sectors ensured that this region took around 30% of total capital invested in this realm in Canada.

In the post-boom cycle of the market, early-stage activity was more broadly diversified, with communities likes Kitchener-Waterloo and Quebec City registering larger shares of industry disbursements than in past.

After the GTA, Montreal and Ottawa regions, Vancouver has typically held the largest proportion of resources going to early-stage ventures. Not surprisingly, this city has almost always accounted for the lion's share of activity in British Columbia, as has the Calgary-Edmonton region in relation to Alberta.

Retail, Private Funds Most Active Canadian Early-Stage Investors

FIG 10:
Early-Stage Dollars Invested and Companies Financed in Canada by Investor Type



To a greater or less extent, activity in early-stage ventures has been the purview of all fund types in Canada's VC industry – corporate funds, government funds, institutional funds, labour-sponsored venture capital corporations (LSVCCs) and other retail funds, and private-independent funds.

This said, some important changes have occurred over the course of 1996-2004 concerning emphasis of seed, startup and other early-stage deals by Canadian funds, in conjunction with their domestic and foreign sources of partnership capital.

Within the industry, it is LSVCC/retail funds and private-independent funds that have been the most active early-stage investors since 1996, both in terms of VC-backed firms and disbursements.

As regards early-stage transactions, private-independent and retail funds have frequently held comparable shares of total activity. For instance, private funds led other industry players during the boom years of 2000 and 2001, with a respective 27% and 20% of total companies financed, while retail funds gradually increased their shares thereafter, from 22% in 2002 to 30% in 2004.

LSVCC/retail funds have tended to lead when it comes to the dollars invested in early-stage activity. This role was most apparent prior to 1999, and again after 2001, when retail disbursements averaged around 30% of the annual aggregate. Private funds have typically been responsible for close to one-fifth of all market resources flowing in this direction, though this activity has been slightly less robust in post-boom years.

The particular influence of retail funds in early-stage activity during the pre- and post-boom cycles is generally attributable to legislated investment pacing rules governing them. These rules have tended to keep LSVCC activity regular during times of market consolidation.

In absolute terms, both private and retail funds increased their early-stage activity in 2004, as compared to 2003.

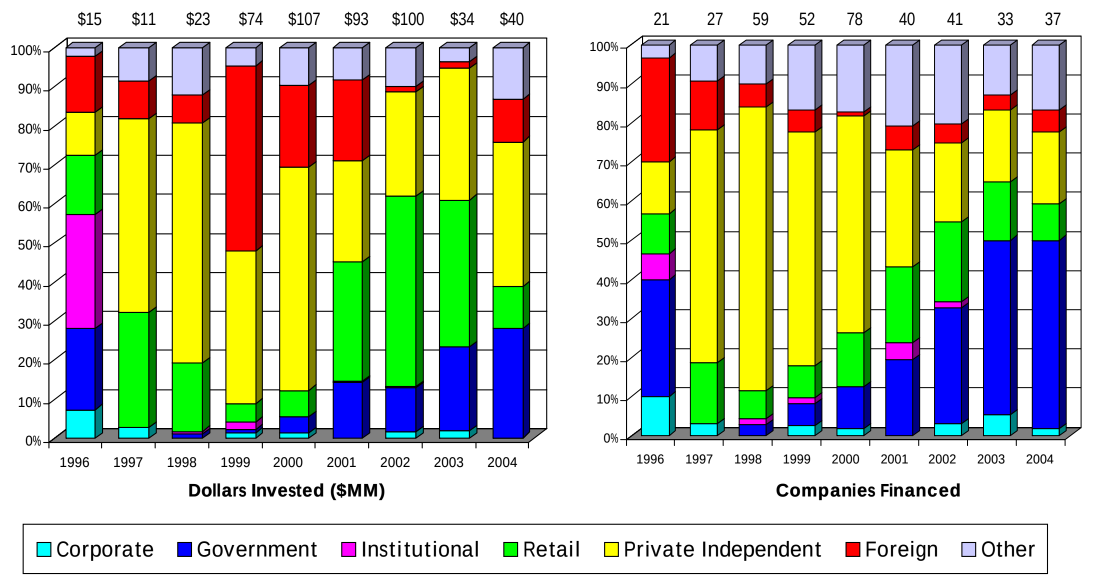
Investment continuity has also been a role for government funds, such as the BDC Venture Capital Group has done nationwide, as well as the Innovatech funds in Quebec. In the period under examination, government funds have typically held third spot among the most active Canadian industry participants in early-stage ventures, with their capital invested experiencing its sharpest increase in 2002-2004, to around 14% of the total.

Another key trend has involved non-resident investors (see also Fig. 12). Beginning in 1999, when they first made a big splash in the Canadian market, foreign investors have added substantial capital depth to early-stage syndicates. As a result, between 1999-2001, non-residents were responsible for the single, largest per annum share of disbursements overall, and between 2002-2004, were second only to retail funds.

For a comparable figure highlighting related trends in Ontario, please see Fig. 18 in Appendix C.

Seed Activity Led by Key Community of VC Funds

FIG 11:
Seed Dollars Invested and Companies Financed in Canada by Investor Type



When seed investment is considered alone, a somewhat different picture of Canadian industry participation emerges. For instance, when market momentum grew behind seed deals in 1998, it was private-independent funds that were at the forefront, with 72% of all companies financed and 61% of all capital invested. This pace was no less evident in 1999-2000, as private funds continued to lead activity.

Even in the down-cycle, private fund activity has been integral, as illustrated in 2003 and 2004, when their share of total seed-related disbursements stood at 34% and 37%, respectively.

Government and LSVCC/retail funds have also played a vital role in getting seed-deals done, and especially once the market began to weaken in 2001. Retail funds were a primary source of Canadian industry resources over 2001-2003, reflecting leading shares of 31%, 49% and 38%, respectively, while government funds proved crucial to the rate of companies financed over the same period, and into 2004, when they reflected 48% of the market total.

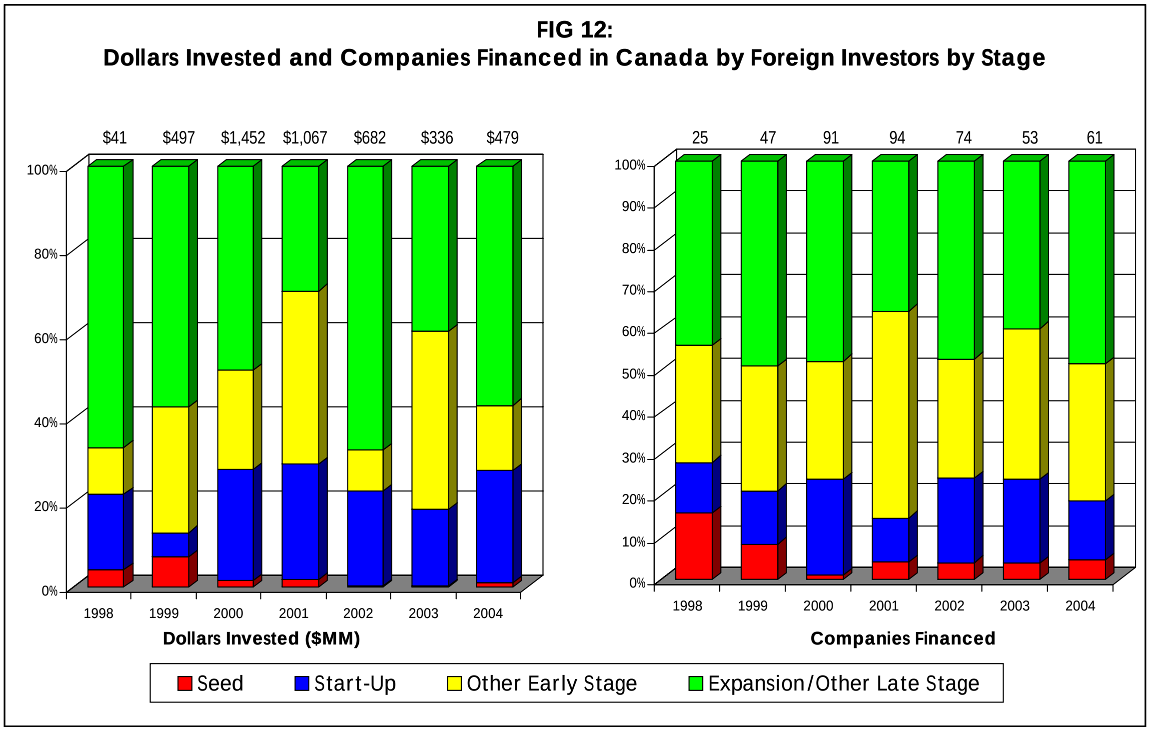
As discussed, seed activity of magnitude since 1998 owed in large part to the formation of balanced and specialty funds with early-stage mandates in the mid-to-late 1990s.

Some of the most active Canadian venture fund managers have included Axis Capital Corporation, BDC Venture Capital Group, Brightspark Ventures, Celtic House Venture Partners, Genesys Capital Partners, GrowthWorks, Quebec's Innovatech funds, MedTech Partners, MSBi Capital, Skypoint Capital Corporation/Venture Coaches, T2C2 Capital, Tech Capital Partners, VenGrowth Capital Partners and Ventures West Management (which includes their administration of the Eastern and Western Technology Seed Investment Funds).

This list, derived from the Macdonald & Associates' database, is based on numbers of VC-backed firms, within a range of 4-29 companies financed in seed transactions over the period 1999-2004. Topping this list was BDC Venture Capital Group.

For a comparable figure highlighting related trends in Ontario, please see Fig. 19 in Appendix C.

US VC Investors Boost Handful of High-Growth Early-Stage Ventures



As discussed, foreign investors have assumed a pre-eminent role in dollars invested in early-stage activity in Canada, at least since 1999. Since then, non-residents, originating chiefly with VC funds based in the United States, have typically accounted for between one-quarter to one-third of total disbursements going to such activity.

This substantial volume of money has reached a small minority of fledgling firms, however. Over the same period, foreign activity has tended to engage only 5-6% of all early-stage companies receiving VC. This discrepancy speaks to the particularly important capital leverage that American funds have brought as co-investors to a select number of firms in communications and other IT sectors, and in more recent years, in life sciences.

As Fig. 12 shows, the early-stage activity of American and other foreign investors has been focused on startups and other early-stage deals and, quite frequently, in syndication with one or more Canadian VC funds. Professional managers interviewed for this report agreed that this suggests something of the value of foreign participation in transactions as high-growth early-stage ventures move up the investment ladder.

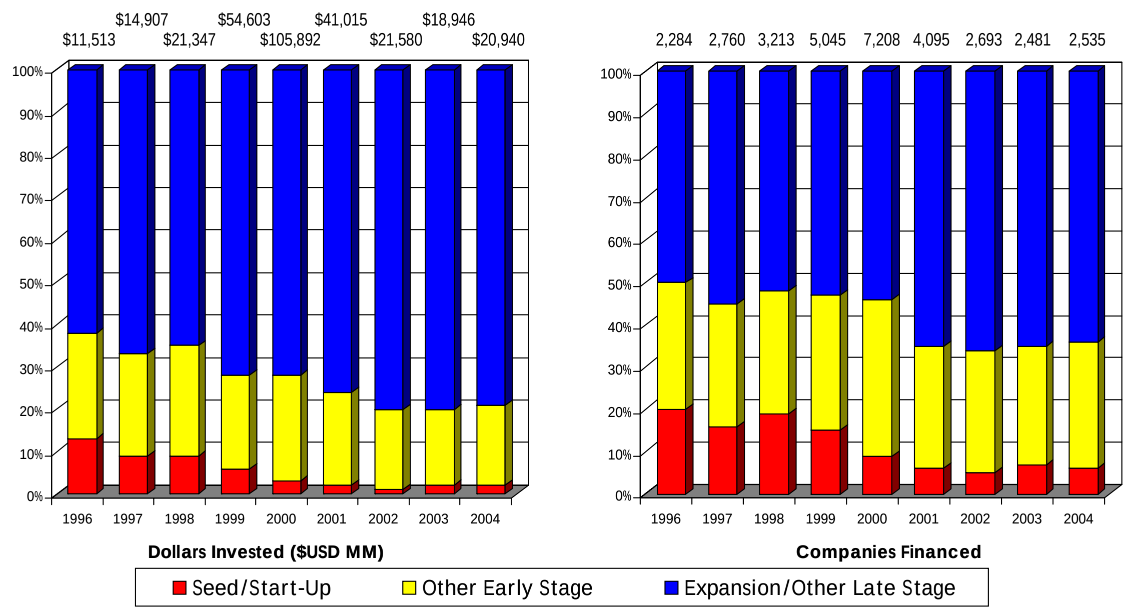
Non-residents have been less active in seed transactions, notwithstanding some major exceptions, such as the 2000 financing of Inkra Networks, noted previously, and the 2002 financing of Ottawa-based NewStep Networks ($22.0 million).

Some of the most active foreign investors in Canadian early-stage ventures (again, based on numbers of companies financed) are situated in New England and California, and include Draper Fisher Jurvetson, Intel Capital Corporation, InterWest Partners, Kodiak Venture Partners, Menlo Ventures, Morgenthaler Ventures, Siemens Venture Capital, and Venture Investment Management Company (VIMAC).

For a comparable figure highlighting related trends in Ontario, please see Fig. 20 in Appendix C.

US VC Industry Inclines More to Late-Stage Activity

FIG 13: Dollars Invested and Companies Financed in the United States by Stage



Source: Thomson Financial Venture Economics / NVCA

According to Thomson Venture Economics, seed, startup and other early-stage activity featured prominently in the American venture industry in the 1980s. However, in the 1990s, and since 2000, industry resources in the United States have generally been geared to transactions involving firms that were expanding or at still later stages of development.

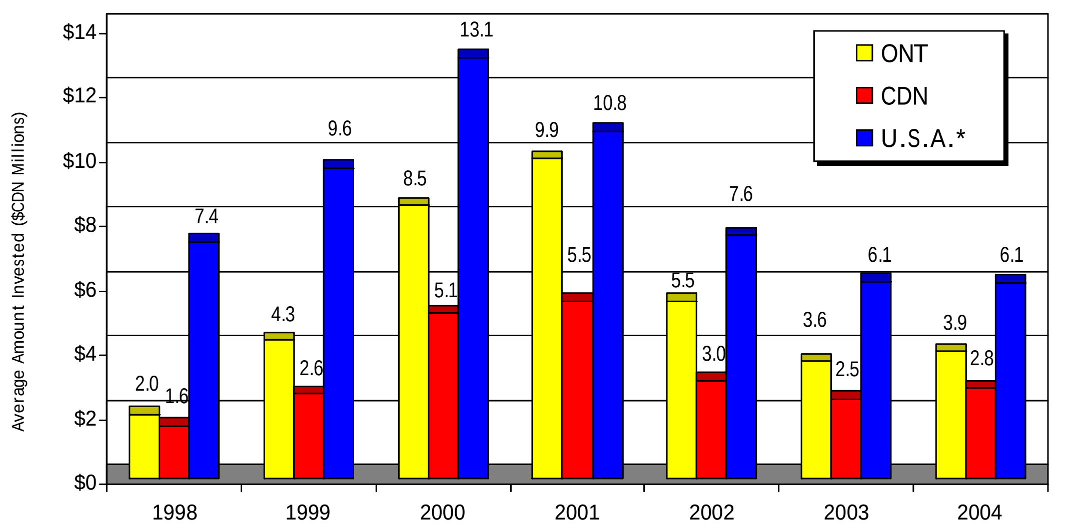
Towards the end of the prior decade, American early-stage company financings represented close to half of all of the total number. This was also the case in the peak year for the market – 2000 – which saw 46% of the record 7,208 VC-backed firms in the United States at an early stage of development. In the period of market slowdown that followed, when total activity in the American industry declined very sharply, this share of companies financed also fell, to a per annum average of 35%.

Capital invested in early-stage ventures observed a similar pattern over this period. In the years immediately preceding 2000, such activity captured approximately 30% of annual disbursements, and in 2000 itself a 27% share. Thereafter, early-stage activity has tended to attract no more than one-fifth of industry cash south-of the border.

As occurred in Canada, there was an upturn in early-stage investment in the American market in 2004, as $US4.2 billion was disbursed in total, up from $US3.8 billion the year before.

Over 2X More Dollars Reach US Early-Stage Firms

FIG 14: Average Amount Invested Per Early-Stage Firm, Ontario, Canada and the United States



** Source: Thomson Financial Venture Economics / NVCA*

Comparisons between Canadian and American VC industries of average dollars invested per company have for some time revealed a significant gap. For example, in 2004, total company financings in Canada (i.e., combining all stages) averaged $3.0 million, or between three and four times less than the average in the United States ($CDN10.9 million).

As Fig. 14 shows, the gap in early-stage deal capitalization is somewhat narrower. Since 2000, the average capital infusion in early-stage ventures in Canada has typically been less than half of the average south-of-the-border.

The situation is somewhat better in Ontario, where well-capitalized transactions involving fledgling IT firms pushed the provincial average to within two-thirds of the American average in 2000, and even higher in 2001. However, in 2002-2004, the average size of Ontario's early-stage company financings has typically lagged its counterpart in the United States by 30% or more.

VC professionals interviewed for this report attached considerable significance to this issue (see **Early-stage firms are undercapitalized relative to competitors** in Section III.3). While some said smaller deal sizes afford the Canadian industry some benefits, due to lower-cost activity, most agreed that they resulted in major competitive disadvantages in the long run, given the importance of "time-to-market" to new innovative business formations.

III. Results of a Survey of Canadian and US VC Professionals

III.1 The Survey Process

To shed light on recent trends on early-stage activity in Canada, Macdonald & Associates conducted interviews with senior professional managers in the VC industry, as well as prominent angel investors (see Appendix A for a full listing).

To facilitate these interviews, Macdonald & Associates developed a survey questionnaire intended to elicit practitioner feedback on multiple topics of relevance. This questionnaire included a section in which angels and VC fund managers gave rankings to current challenges of importance to undertaking early-stage activity in the Canadian market.

Senior professionals representing fifteen VC management companies in Canada were interviewed over the period December 2004 – January 2005. In general, these were professionals who managed balanced or specialty early-stage VC funds with operations across the country, or in specific provinces or regions.

In addition, senior professionals representing two major angel organizations in Canada were interviewed over the same period. While these organizations have broad VC interests, they are essentially based in Ontario.

Finally, to complement Canadian survey responses, Macdonald & Associates also interviewed VC fund managers based in the United States. Using a comparable survey instrument, these interviews focused on the longer-term experience of investment in early-stage ventures south-of-the-border, to elicit feedback on lessons learned.

Senior professionals representing four VC management companies in the United States were interviewed in January 2005. In general, these were professionals who managed specialty early-stage VC funds, and had some knowledge of related activity in Canada.

The findings of the survey process are summarized in the following three sections of this report:

Section III.2 contains a brief introduction to the primary investor relationships that characterize early-stage activity in the Canadian VC industry at the present time. Much of the information in this section derives from interviews with angel investors and venture fund managers. This section also includes an overview of survey responses, using Fig. 15, "Key Challenges to Undertaking Early-Stage Activity in Canada, Professional Manager Ratings By Importance" as a focal point.

Section III.3 contains more detailed commentary on issues by professional managers, again using Fig. 15 as a guide. In general, this commentary interweaves the feedback obtained from both Canadian and American survey respondents, using examples and illustrations as necessary.

Section III.4 considers some of the public policy recommendations arising from survey responses, including some specific proposals by VC professionals relevant to their ratings of "key challenges".

III.2 Overview of Survey Responses

Today, an array of market and non-market investors is active across the early-stage investment spectrum in Canada. Among market participants, the most important are angels, balanced or specialty VC funds with early-stage mandates, and various sources of partnership capital in the Canadian industry, outside of the industry, and outside of the country.

The Role of Angels

Angels are crucial players in a successful VC market, and especially in the realms of pre-seed, seed and startup activity. Research has shown that while most can be defined as well educated individuals of high net wealth, it is those angels with entrepreneurial backgrounds in distinct technology sectors that play a catalytic role in the early days of a high-growth business (e.g., see Riding, Madill & Haines, <u>Practices and Patterns of Informal Investors</u>, 2001). This is because these angels often bring solid company-building skills as a companion to their risk financing.

Using these skills, angels can assess the domain expertise of prospective founding entrepreneurs, and test proprietary ideas and innovations for true commercialization potential. As such, angels are vital screeners of VC deal flow, which make them invaluable to investors that may join them in later financing rounds.

Angels are sometimes called "informal" investors. In one sense, said VC professional interviewed for this report, this term excels at describing their hands-on activity in early-stage situations, as angels frequently develop close, creative bonds with founding entrepreneurs. Indeed, at this level, the investor is commonly indistinguishable from the founder, as the former coaches and mentors entrepreneurs – instilling a market perspective, where necessary – and is otherwise involved in all aspects of the emerging business entity.

"Collectivizing" Angels

Angels work independently and in combination. In the highly evolved American VC market, many angels have embraced "collectivization", or the forming of groups with numerous individual members, such as California's Band of Angels and Tech Coast Angels. These organizations, which mirror the features of funds in the VC industry, sometimes include pools for investment purposes.

There is evidence that this trend is taking hold in the Canadian market. For instance, Band of Scoundrels and Purple Angels have become key investors in Ottawa since their establishment by local angels in 2001. In 2004, these groups determined to leverage still more angel participation through the Ottawa Angel Alliance (OAA), which to date has attracted 60 members. An analog to the OAA is the Toronto Angel Group (TAG) with a current membership of 40, which has grown in collaboration with the Toronto Venture Group (TVG).

Angel "collectivization" is a development of note, as organizations like the OAA and TAG give members a means of risk mitigation – via pooled expertise, networks and resources, access to quality deal flow, investment-cost efficiencies, and other types of strategic support. For this reason, collectivization gives members not just new opportunities, but in the words of one angel interviewed for this report, "safety in numbers".

Angels and VC Fund Managers

The phenomenon of organized angels probably also increases the effectiveness of the overall VC industry. Among its advantages is a point of reference for VC funds interested in angel activity. This includes funds with early-stage mandates, which, over time, have increasingly occupied much of the same market territory as angels.

Survey respondents commented on the topic of market participants in early-stage ventures. A widely held view was that angels and VC fund managers brought very different strengths to this activity that, in part, explains why they typically work side-by-side in seed and startup transactions.

Many of the strengths of the angel investor have already been mentioned. Indeed, it is because of their unique characteristics that some early-stage funds prefer to utilize angels as a source of pre-screened deal opportunities in which value has already been injected. On the other hand, some VC funds have organized themselves to perform the same company building tasks as angels, chiefly by locating the necessary experience and skill sets in general partner (GP) teams.

And while the "informality" of angels lends them a special dynamism in early-stage activity, it may also encourage a lack of structure and discipline, say survey respondents. Fund managers, by contrast, offer years of experience in managing the economics of VC cycles, as well as a structured approach to due diligence, investment agreements and monitoring. In these and other ways, VC funds provide value to angel partners.

Survey respondents agreed that angels are especially motivated about the success of an early-stage situation, given their substantial personal investment. Regardless, like-minded angels and VC funds believe they share a common stake when early-stage ventures develop, and receive follow-on financing rounds. At this point, more partners may enter the picture with syndicate capital, but depending on the state of the market, sometimes at a very high price (from the perspective of existing investors).

The Role of Co-Investors

Angels and early-stage funds put great stock in trustworthy co-investors that bring something to the table at all steps in the process. For instance, when looking for optimally sized capitalization of deals, lead investors tend to prefer domestic or foreign VC funds with a compatible market focus (e.g., by sector), or those with whom they have had good experiences in past.

When these are scare, or when transactions are exceptionally capital-intensive, lead investors may turn to other industry players, or approach non-industry sources, such as Canadian corporations, financial institutions, governments and institutional investors.

Co-investors are also sought out for their strategic merits. In early-stage company financings, lead investors may prefer angels and like-minded venture fund managers as partners because of their reputations for company-building and extensive networks.

In follow-on rounds, the goal may be to introduce syndicate partners with later-stage specialization, for instance, where a portfolio firm needs to be prepared for IPO. American VC funds are increasingly popular as co-investors, because of their abundant market experience, and because of their reach into broader capital and customer markets, among other things.

Rating Challenges to Undertaking Early-Stage Activity

Professional managers in the VC industry were asked to rate a list of thirteen "key challenges" to making seed, startup and other early-stage investments in Canada. These challenges were identified by a small focus group of industry practitioners and analysts prior to development of the survey questionnaire by Macdonald & Associates. Ratings of 1 to 5 pertained to how much emphasis was given to challenges as continuing factors in the Canadian market.

The results of this exercise are found in Fig. 15.

FIG 15: Key Challenges to Undertaking Early-Stage Activity in Canada
Professional Manager Ratings by Importance
(5 = Very Important, 1 = Not Important)

Too few venture fund managers with adequate skills, experience	4.4
Early-stage venture capital pools are too small	4.3
Early-stage firms are undercapitalized relative to competitors	4.3
Too few venture capital funds focused on early-stage	4.2
Too few experienced business managers for company-building	3.9
Too few venture fund managers with sector-specific expertise	3.5
Not enough co-investors, particularly for follow-on financings	3.2
Too few seasoned entrepreneurs	3.2
Scope of venture capital liquidity options too narrow	2.8
Early-stage investors operate with overly restrictive criteria	2.8
Insufficient government support at front-end of early-stage activity	2.5
Inadequate market infrastructure for sourcing quality deal flow	2.4
Regulatory barriers to advancing IP and prototype testing	1.7

Source: Macdonald & Associates Ltd.

Interestingly, VC professionals interviewed for this report gave above average ratings to most of the thirteen challenges, and especially high ratings to at least eight of these. Survey respondents made clear that their attitudes were based on direct experience since the mid-to-late 1990s, when a large number of balanced and specialty early-stage funds were formed, in many cases, for the first time.

There are apparent links between the highest rated challenges, discussed in greater detail in Section III.3, such as "**Early-stage venture capital pools are too small"** and **"Early-stage firms are undercapitalized relative to competitors"**. What is perhaps most telling about these and other issues given prominence is the importance attached by professional managers to ecosystem issues relevant to the still evolving demand and supply sides of Canadian venture activity as a whole.

Many veteran industry practitioners discussed their concerns in these broader terms, noting that several challenges are rooted in fundamental market practices that will change over time, as venture fund managers engaged in early-stage activity became more aware of them, develop new strategies, and generally persevere in "learning by doing", just as their American counterparts have done. Indeed, survey respondents based in the United States industry made the same point.

The following is a brief summary of key observations made by survey respondents about their ratings:

- The highest ranked issue was: **Too few venture fund managers with adequate skills and experience**. Survey respondents said early-stage activity required specialized skills sets relevant to building companies, including operating experience. Without access to these skills, professional managers were unlikely to add sufficient value to assist fledgling firms in their growth and development.
- Two issues tied for second spot: **Early-stage venture capital pools are too small** and **Early-stage firms are undercapitalized relative to competitors**. These issues are probably linked, as both boutique and larger, balanced-integrated VC funds must have access to sufficient resources to handle a full cycle of new and follow-on company financings. This has not always been the case in recent years, one consequence of which has been early-stage deal sizes that are sometimes too small, a situation that can impede rapid growth of young businesses.
- Not far behind was: **Too few venture capital funds focused on early-stage**. Despite recent fund formations, and several new fund products on offer in 2005, respondents believed there are too few effective early-stage investors in Canada, generally, and in specific regions and sectors.
- Also rated highly was: **Too few experienced business managers for company building**. Survey respondents argued that options for drawing on local management talent when building early-stage firms are limited in Canada, as technology sectors have yet to produce large numbers of experienced business executives, particularly in sales and marketing.
- A substantial ranking was also accorded to: **Too few venture fund managers with sector-specific expertise**. Most respondents saw sector knowledge as being coupled

with company building skills and, consequently, of importance to early-stage ventures, particularly in highly specialized areas of innovative activity.

- A significant rating was also given to: **Not enough co-investors, particularly for follow-on financings**. Survey respondents said they too often lacked co-investors in early-stage transactions, or in follow-on financing rounds in later stages. This situation, which is linked to the relative sizes of early-stage funds, has sometimes led to protracted periods for assembling syndicates and undercapitalized deals.
- **Too few seasoned entrepreneurs** also attracted a fairly high rating. Respondents argued that while the pool of entrepreneurial managers with track records in Canada is larger today than in past, more skilled entrepreneurs are needed to increase the rate of quality, early-stage deal opportunities.
- A slightly above average ranking was given to: **Scope of venture capital liquidity options too narrow**. While relatively small domestic capital markets place some limits on the current range of VC liquidity events, survey respondents did not believe that this obstructed their ability to grow major innovative businesses.
- Slightly above average emphasis was also given to: **Early-stage investors operate with overly restrictive criteria**. However, respondents thought that this issue was essentially a function of the market slowdown, and would be addressed by increasing the diversity of balanced and specialty VC funds with early-stage mandates.
- Only moderate emphasis was given to: **Insufficient government support at front-end of early-stage activity**. In general, survey respondents was satisfied by the level of public expenditure on R&D and other aspects of Canada's innovation system, though several argued strongly that government should assume a greater role in proof-of-principle activity.
- A significant challenge was not perceived in relation to: **Inadequate market infrastructure for sourcing quality deal flow**. Respondents said that various agencies that facilitate early-stage activity and market relationships were effective where in use, though some suggested these be extended to certain underserved regions and sector clusters in Canada.
- The lowest ranked issue was: **Regulatory barriers to advancing intellectual property and prototype testing**. The majority of survey respondents did not regard this as a key challenge, though concerns were identified for early-stage ventures in agri-food and perhaps other life sciences activity.

In their feedback, respondents also indicated that government policy-makers had a role in addressing selected challenges (see: III.4 **Public Policy Recommendations Arising from the Interviews**).

III.3 Detailed Commentary on Challenges of Early-Stage VC Activity In Canada

(1) Too few venture fund managers with adequate skills, experience.

Senior VC professionals interviewed for this report put this issue at the top of their list, with a rating of 4.4.

As discussed previously, undertaking seed, startup and other early-stage activity is hugely time-consuming, and requires application of a unique set of management skills, acquired only through years of experience in company creation.

To be successful, angels and venture fund managers must be engaged in almost every dimension of business formation. At the seed level, for example, much of the effort may involve coaching and mentoring founding entrepreneurs, advancing R&D or initial product development, and working through the details of high-growth market plans and strategies.

By the time a startup occurs, attention must be paid to corporate governance and personnel decisions, such as hiring a CEO, or populating Boards of Directors with executives who can share advice and contacts. In these and many other ways, company infrastructure gets developed, always with the aim of injecting competitive advantages relevant to future growth.

In short, early-stage investors add considerable value to VC-backed firms in their first months of life. Industry practitioners with careers in this field said they could not do otherwise, as their interests are inextricably bound to those of founders. Regardless, such activity creates a special breed of venture professional – one that is particularly adept at recognizing good prospects for commercialization, and judging the best means for achieving growth.

Survey respondents believed that it is crucial to recognize the necessity of company building skills sets in early-stage situations. This means that professional managers must be equipped with more than just extensive backgrounds in financial risk intermediation, or even experience in managing the economics of VC investing – as important as these also are.

Along these lines, respondents argued that early-stage investors must show some evidence of operational experience in their professional activity, based or several years of running first-time businesses. In their view, well-established VC funds with early-stage mandates will typically locate operating skills in GP teams, or have networks in which these skills can be readily accessed by GPs.

Where these and other company building skills are not present – in one form or another – said most survey respondents, VC investors are likely to be passive or ineffectual when faced with crucial decisions in a fast-changing early-stage environment. This can unfairly place the onus for success or failure on inexperienced entrepreneurs.

After close to a decade of increased early-stage investing, Canada has grown its stock of experienced specialty, early-stage VC managers. Survey respondents observed that it is important not to squander this talent going-forward.

In addition, some respondents felt there is merit in finding ways to leverage comparable talent among veterans in the United States industry, perhaps through cross-border strategic partnerships, or by encouraging American funds to set up shop in Canada – as New Jersey's ProQuest Investments and California's VantagePoint Venture Partners plan to do in Montreal, in partnership with CDP Capital Private Equity.

(2) Early-stage venture capital pools are too small.

Industry practitioners also gave this issue a high ranking, with an average of 4.3.

VC funds doing seed and startup deals must be large enough to handle considerable up-front costs, especially where fledgling firms are judged to have major growth potential. In addition, once portfolio companies move into new phases of development, there must be cash available for follow-on financings. For these reasons, said survey respondents, fund size matters.

According to respondents, limited resources posed a barrier to many Canadian funds launched in the mid-to-late 1990s. In particular, so-called “boutique” fund managers often operated with pools of less $20 million, $10 million, and even $5 million. While not a handicap in all circumstances, funds of these sizes can end-up relying too heavily on co-investors. Sometimes, difficulties were compounded for funds that failed to conserve money, or have spread it too liberally over too many firms.

Survey respondents felt that all Canadian early-stage funds – both balanced and specialty – need to be larger to be more effective.

Some respondents argued that what the VC industry needs most, however, is more “big” balanced funds in which the ingredients of early-stage activity – professional management skills, sector knowledge, well developed networks – are combined in a single, integrated organization. However, others saw a shortcoming in the large-fund model, as size can create pressures to invest only large sums, and dampen the appetite for extensive early-stage activity.

For some veteran fund managers, this appears not be a problem. For instance, despite having a current fund of $US250 million, Silicon Valley-based Newbury Ventures has been described as possessing a “boutique fund personality”. This is a cultural quality that Newbury achieved strategically, in part through its situation of small GP teams in local IT clusters in the United States, as well as Canada (via Eagle One Ventures), Europe and Israel.

A similar quality has been ascribed to Sanderling Venture Partners, also headquartered in California, given this fund manager’s ability to combine capital depth ($US230 million in Fund VI) with a tailored approach to seed and startup investments in life sciences.

Another route is for independent boutique funds to develop strategic relationships with larger entities. For instance, SAS Investors of New York launched its $US40-million partnership in 2001 with the backing of three major VC funds – Canaan Partners, Rho Capital Partners and Sevin Rosen Funds. In this model, SAS is able to concentrate on a select number of seed and other early-stage technology deals in Northeastern states, drawing on its partners for support and potential follow-on capital, when necessary.

Some survey respondents observed that versions of the SAS model have been tested in the Canadian market, with mixed success. Where problems arose, said respondents, strategic partners tended not share an equal commitment to, or understanding of, early-stage ventures.

Irrespective of the model, one barrier to larger-sized pools in Canada is the reluctance of many pension funds and other institutional investors to participate in the private equity market (see Macdonald & Associates Ltd., Finding the Key, 2004). While several balanced and specialty early-stage fund managers raised new resources in 2004 and early 2005 – including Brightspark Ventures, Celtic House Venture Partners, MSBi Capital and Ventures West Management – in general, there has been intense industry competition over too few sources of institutional money, said respondents.

For this reason, several survey respondents recommended a heightened role for Canadian governments as a source of early-stage fund supply. It was suggested that by acting as lead limited partners, governments might help leverage institutional investors.

Despite tax incentives, LSVCC and other retail funds with an interest in early-stage activity have also encountered pitfalls in fund-raising. For example, challenges exist in Ontario, where the retail marketplace has been crowded in recent years.

Be they limited partnerships or retail funds, potential sources of capital can also be skittish about early-stage VC investment mandates due to perceptions of the inherent risk. American survey respondents said this was also an issue for them south-of-the-border.

(3) Early-stage firms are undercapitalized relative to competitors.

With a rating of 4.3, professional managers also identified this issue as a top challenge.

As discussed in Section 1.2, **Analysis of Venture Capital Statistics**, the average amount invested per early-stage firm in Canada's venture industry has generally been less than half of comparable deals in the American industry (see Fig. 14). In Ontario, average capital infusions were higher due chiefly to well-syndicated IT transactions – especially in 2000 and 2001 – but nonetheless reflected a shortfall as compared to the United States.

The size of early-stage deals tells only part of the story, as the Canada-United States market gap in VC financing rounds of all types – be they early-stage, expansion or later-stage in nature – is very substantial. This fact is of relevance to the progress of fledgling firms, as growth must be adequately financed at all points of the investment continuum.

Survey respondents emphasized this issue because "time-to-market" is an essential factor in successful early-stage ventures.

For instance, when vetting deal flow, VC professionals typically seek entrepreneurial situations where intellectual property and proprietary technology can be rapidly leveraged, often ahead of known sector competitors. If significant cash reserves do not exist in a given fund, or the time taken to assemble syndicates is protracted, the growth path of a firm may be slowed. In such cases, the result can be lost market opportunities.

This also suggests a link between deal sizes and the issue of resources available to VC funds. Several survey respondents argued that young innovative businesses in Canada are put at a disadvantage in a large and extremely competitive North American market when – due to small fund sizes – the seed, startup and other early-stage transactions backing them are too small and incremental.

(4) Too few venture capital funds focused on early-stage.

VC professionals also gave this issue a high priority, according it a rating of 4.2.

Survey respondents tended to agree that the Canadian venture marketplace functions best when there are numerous management companies and funds with diverse market strategies, and oriented to diverse sectors and regions. This includes a variety of funds with clear by-stage VC capabilities, including those positioned across the early-stage investment spectrum.

As discussed in Section 1.2, **Analysis of Venture Capital Statistics**, there appears to be a correlation between the size and scope of early-stage activity in recent years and multiple new balanced and specialty funds. New fund formations, most of which occurred between 1995 and 2001 (source: Macdonald & Associates), prompted intensified activity in the lead-up to 2000 and thereafter, in what appears to have been a fundamental change in industry focus. This is most graphically illustrated in the case of seed activity, beginning in the latter half of the 1990s.

Respondents to the survey saw this correlation, observing that, in the case of seed activity, a number of small boutique funds with roots in local innovation systems, sector clusters, and angel groups were originally at the forefront of trends, along with a handful of larger, balanced funds.

Respondents also spoke of the pressures placed on early-stage funds of all types since the onset of the market downturn in 2001. After a fairly brief boom cycle, many funds were forced to shift gears and concentrate on survival strategies for portfolios firms. Not surprisingly, the sudden change in climate for industry activity had a depressing impact on the returns performance for funds with vintage years immediately prior to that time.

Due to the slowdown's long duration, the universe of active balanced and specialty funds has also contracted somewhat. In keeping with market realities, some funds have closed shop, some have merged, and others have redirected their energies towards later-stage opportunities. In addition, by 2004, many early-stage industry players were either fully funded or fast approaching that status.

During the slowdown, an increasingly important role was assumed by BDC Venture Capital Group, which has since 2002 managed the $100-million BDC Technology Seed Investments (BDCTSI). Using its regional offices across the country, BDCTSI greatly ramped up its activity in pre-seed and seed investments of between $250,000 and $1.5 million in the past year. Indeed, as also discussed in Section 1.2, BDC has been central to seed activity, in both up- and down-cycles of the market (e.g., see: **Seed Activity Led by Key Community of VC Funds**).

As noted previously, 2004 also marked several successful closings of new early-stage funds. In addition, at the outset of 2005, other initiatives were in the offing.

Examples include the new fund offering of Primaxis Technology Ventures – one of the pioneers of seed investment in Ontario's IT sectors – in partnership with Menlo Park's Draper Fisher Jurvetson. 2005 will witness the full launch of DFJ Primaxis Limited Partnership. A key aspect of this new Primaxis fund will be its strategic role in the international DFJ network of affiliated early-stage VC funds.

The Quebec-based GeneChem will launch its second fund in the coming months, with CDP Capital Private Equity as its lead limited partner. With this fund, GeneChem will continue to focus on groundbreaking, early-stage companies in genomics and other life sciences in Canada, the United States and other countries.

On the retail side, GrowthWorks WV Management has established a new seed fund targeted at $40 million, and directed at deal opportunities in Ottawa, Toronto, and Southwestern Ontario. The new GrowthWorks Commercialization Fund is intended in part to emulate features of an earlier provincial model for Community Small Business Investment Funds, which fostered demand-supply relationships at the local level. However, the new fund would have more substantial co-investment capacity, given its access to the larger GrowthWorks pool.

Recent growth in OAA and TAG membership also indicates that more resources might be at hand for angel investors in this space. Survey respondents believed that such "collectivization" should be encouraged, given the vital role of angels as partners to early-stage funds, and as a transactional pipeline into the broader VC market. Indeed, it was argued that such models should be replicated in other Canadian regions.

These initiatives notwithstanding, survey respondents felt that there remain too few effective early-stage investors in Canada that combine sizeable fund sizes and some of the strategic qualities already discussed – such as seasoned professional managers – generally, and in specific, underserved regions and sectors.

(5) Too few experienced business managers for company building.

Industry practitioners also gave fairly strong emphasis to this issue, evident in the 3.9 ranking on average.

As discussed under (1) **Too few venture fund managers with adequate skills, experience**, a major milestone in early-stage company development is the formation of management teams around founders. For angels and VC fund managers, this may involve introducing business leadership to an original team comprised primarily of researcher and technologists. In other cases, the task may be to match the skill sets of new managers with existing ones.

For this reason, one professional manager described early-stage investors as "human resource specialists". Of course, said survey respondents, there is a challenge implicit in the search for experienced CEOs and other top managers, either in the business-world-at-large or, more particularly, in innovative sectors of relevance.

Several decades of venture activity in emerging technology sectors in the United States has, in turn, spawned successive generations of business managers. In Canada's still evolving ecosystem, this process is not nearly so advanced in key sectors, leaving industry players with fewer options for drawing on local management talent.

Survey respondents further observed that differences could be perceived between regional sector clusters, depending on the degree to which these have achieved some critical mass. For instance, in Ottawa, telecommunications and other IT sectors have already produced a batch of senior entrepreneurial managers. By contrast, the national life sciences sector is perceived as still producing its first generation.

In the short-term, said industry practitioners, a strategic solution lies in more extensive foreign activity in early-stage syndicates. Along with abundant capital, such activity facilitates greater Canadian industry access to a broad North American pool of technology managers.

Above all, cross-border partnerships have provided a fresh source of sales and marketing executives. Virtually all survey respondents identified this as an area of major deficiency in Canada, irrespective of the sector context.

Several respondents spoke of new cross-border initiatives intended in part to further open doors. For instance, the DFJ network, to which Primaxis Technology Ventures is now affiliated, comprises 16 like-minded early-stage VC funds and other partners based in 27 regions on three continents. The network allows over 70 GPs to interact strategically, by sharing contacts, resources and market intelligence, and with the capacity to search management pools in the United States and internationally for potential hires.

More than one venture professional suggested that a target group for new hires of early-stage business managers should be Canadian expatriates working in established American technology corporations. Recruiting from these now highly trained executives could lead to, in their words, a "reverse brain-drain".

(6) Too few venture fund managers with sector-specific expertise.

Professional managers also acknowledged the importance of this issue, giving it a rating of 3.5.

Survey respondents noted that, over time, venture activity in Canada has become increasingly differentiated along sector lines, a trend evidenced by the wide variety of fund products on offer by management companies. Today, the industry reflects a growing mix of funds with GP teams specialized to invest in clean technology, communications and IT, life sciences, and sub-sectors of these broader categories.

Most respondents viewed growth in the technology domain expertise of industry players as a step forward. Furthermore, they saw this trend as being necessarily coupled with growth in company building skills in the case of early-stage ventures, given that angels and fund managers typically work in sectors familiar to them. Others said the latter of the two qualities was the more crucial, as sector knowledge can be acquired by various means.

VC professionals with a singular focus on particular sectors or sector clusters tended to feel most strongly about the application of domain expertise in early-stage activity.

A good illustration is seen in the life sciences sector, which most respondents agreed was in an infant state of development in Canada, featuring young companies with unique needs at the time of seed, startup or other early-stage financings.

For instance, VC-backed biopharmaceutical firms progress in a manner unknown to many other technology sectors, with development paths of ten years-plus, due to extended periods of R&D, several phases of clinical trials, regulatory approval procedures, etc. Such firms are likely to develop a platform of one or more products, requiring major cash infusions on an incremental basis, but little prospect of revenues in the short-term (see Norland, "First Principles", Background to Financing Canada's Biotechnology Companies, 2004).

Just as they have in the United States, a number of balanced and specialty VC funds have been formed in Canada to apply a special blend of patience and skill to life sciences businesses in their formative years. Survey respondents observed that a key challenge for professional managers is to target those in the pipeline that can truly grow to create new markets or market niches in a sector that is still emerging on a global basis.

(7) Not enough co-investors, particularly for follow-on financings.

With a rating of 3.2, VC professionals agreed that this issue also held considerable significance.

It has already been observed that over the VC financing history of a young, high-growth business, lead investors will commonly invite co-investors to participate in rounds for various strategic reasons. In addition, as discussed under (2) **Early-stage venture capital pools are too small**, syndicate partners are also regularly sought out when lead investors lack sufficient resources to undertake new or follow-on deals on their own.

Survey respondents argued that the problem of relatively small fund sizes has perhaps created overdependence on co-investment in the Canadian venture industry, for the purpose of increasing deal capitalization levels (see (3) **Early-stage firms are undercapitalized relative to competitors**). Certainly, data from Macdonald & Associates indicate that rates of investment syndication in Canada have risen steadily over time.

For instance, in 1996, the average number of VC investors per deal in Canada was 1.4. By 2001, the average number had climbed to 2.1, and in 2004, the average was 2.4. Interestingly, these overall rates of co-investment have grown irrespective of shifts in average company financing sizes.

Over the same period, rates of co-investment in early-stage transactions have generally trended higher: 1.6 on average in 1996, 2.4 in 2001, and 2.7 in 2004.

Survey respondents believed that, by contrast, co-investment activity in the American industry was less imperative for deal capitalization than it was for obtaining strategic value. Respondents thought this general rule applies to many early-stage funds in the United States, due to their comparatively large sizes.

While co-investors may be necessary to both early-stage and late-stage VC financing rounds in the Canadian market, the experience of many respondents suggests that finding them is not a straightforward proposition. Most spoke of obstacles in the process of assembling early-stage investment syndicates in a timely fashion. Even where co-investors were located, said respondents, there were often numerous complications, born of different fund types and their different governance structures. For instance, government or government-assisted VC funds (e.g., LSVCC/retail funds) are often bound by legal stipulations that unnecessarily complicate syndicate activity.

Survey respondents also felt that some Canadian industry players were simply unsuitable as co-investors. Examples include management firms with later-stage mandates, which do not always understand or appreciate the nature and requirements of VC-backed firms emerging from earlier stages of development.

In addition, while VC professionals welcomed the increasing role of American industry players in early-stage syndicates in Canada, several noted that much of this activity is hampered by legal and tax costs – or perceptions of these costs – depending on the nature of the transaction or the fund structure of the non-resident partner.

For instance, to avoid one set of tax difficulties – including those linked to the Canada-United States Income Tax Convention – American venture investors sometimes invest in private Canadian businesses via offshore subsidiaries, which are covered by more favourable international tax treaties. Alternatively, they may insist that a given Canadian firm become a subsidiary of a Delaware holding company, through an exchangeable share arrangement. These approaches are also fraught with challenges, however, that can end up deterring cross-border activity.

Survey respondents spoke of instances in which American venture fund managers have rejected early-stage co-investment opportunities in Canada out of hand, based on their assumptions about such issues, which they believe are likely to induce legal bills, paperwork, and considerable time taken to avoid still greater costs.

Respondents indicated that, in the absence of sufficient co-investors of various types in follow-on financing rounds, some fledgling Canadian firms might not experience optimal growth on their own, but instead be exited early by VC investors through a merger or acquisition.

As discussed earlier, more opportunities for syndication might be availed by boutique VC funds through collaborative relationships with larger entities. This is the model utilized by SAS Investors, as well as within the DFJ affiliate network. In both cases, partnership capital is made available subject to the standard due diligence procedures of independent, but like-minded, funds.

(8) Too few seasoned entrepreneurs.

Industry practitioners also accorded an above average ranking to this issue: 3.2.

Similar to the discussion under (5) **Too few experienced business managers for company building**, the relative experience of founding entrepreneurs is integrally linked to the demand side of Canada's still evolving ecosystem for venture activity. Survey respondents agreed that as fresh generations of entrepreneurs gain experience in innovative sectors, so too will there be growth in the quality and quantity of deal flow that prompts successful seed, startup and other early-stage ventures.

Respondents also said that the pool of entrepreneurial managers with track records in Canada is probably larger today than it was even a few short years ago, and particularly so in key IT sectors. Indeed, some respondents believed that the Canadian market is currently benefiting from the activity of a relatively new batch of IT-focused "serial" entrepreneurs located primarily in urban centers in Central Canada and on the West Coast.

To enhance entrepreneurial skills, and to tap the knowledge and energy of "serial" entrepreneurs, there appears to be growing interest among Canadian VC professionals in "entrepreneur-in-residence" (EIR) programs.

For instance, the veteran investor, Ventures West Management, sponsors one of the largest EIR programs in the industry, offering seasoned entrepreneurs access to resources and networks as they work towards their next VC-backed opportunities. The EIR program at Ventures West has spawned some major early-stage deals, including the 2002 seed investment in OctigaBay Systems Corporation, which also saw a major acquisition just two years later.

Similar programs are featured in the operations of Skypoint Capital Corporation/Venture Coaches and VenGrowth Capital Partners, among others. Other venture fund managers flagged a desire to launch EIR programs, but currently lack the resources to do so.

There are also programs geared to advancing entrepreneurial and commercialization skills situated outside of the venture industry. Some of the best established of these are found in the United States, including the Ewing Marion Kaufmann Foundation, and entrepreneurship centres at the Massachusetts Institute of Technology, Stanford University and the University of California (Berkley).

American survey respondents said they found such programs useful, but also believed that the best skills training of technology entrepreneurs was to be found in direct activity in the marketplace.

(9) Scope of venture capital liquidity options too narrow.

Professional managers gave this issue slightly above average emphasis, with a rating of 2.8.

Survey respondents said that, in the immediate-term, the primary vehicle for liquidating VC investor shares in portfolio companies was mergers and acquisitions, with established American technology corporations assuming a pre-eminent role in the case of high profile acquisitions. Respondents believed that more IPO opportunities are likely to emerge soon – a view that was also reflected in Deloitte and Touche's Canadian Private Equity Outlook Survey, conducted at the close of 2004.

However, it was acknowledged that the scope of exit avenues in the Canadian industry is currently narrower than in the United States industry, which is a fact of smaller, and less mature, domestic capital markets. While this situation impacts all companies financed with VC, including those at an early stage of development, it does not undermine the ability of the industry to generate major, high-growth innovative businesses, said respondents.

Indeed, a recent report indicates that many young Canadian firms have moved up the VC ladder to graduate from lucrative exit events. Canadian Technology Investment Returns: Comparisons of Exits (Greenstone Venture Partners, 2005) asserts that low domestic investment costs relative to liquidity values has been one of several factors in the success of a larger number of venture-backed acquisitions and IPOs.

Moreover, survey respondents felt that as venture activity in Canada continues to evolve, the variety of exit alternatives will diversify, and include greater access to American public markets, such as NASDAQ.

(10) Early-stage investors operate with overly restrictive criteria.

At 2.8, industry practitioners participating in the survey gave this issue a slightly above average ranking.

Survey respondents argued that the perception of overly restrictive criteria on the part of balanced and specialty early-stage VC funds is probably rooted in the post-2000 market slowdown, when these funds were forced to tighten due diligence procedures, conserve resources, and focus on existing portfolio companies, usually to the exclusion of new deal activity.

This said, there was recognition among respondents that, as discussed in (4) **Too few venture capital funds focused on early-stage**, some VC fund managers have adjusted their investment mandates to increase exposure to later-stage market activity – also as a result of the down-cycle. In these circumstances, the nature and degree of early-stage activity have sometimes also been adjusted.

Ultimately, said survey respondents, a broader and more diversified menu of early-stage options will materialize with a larger universe of Canadian management companies and funds with capabilities in this realm.

(11) Insufficient government support at front-end of early-stage activity.

Overall, this issue attracted only moderate emphasis from professional managers, apparent in its 2.5 rating.

In general, survey respondents felt that governments at the federal and provincial levels are responsible for investing large sums of money in Canada's innovation system. Sizeable tranches of government expenditure support R&D in various private and public sector settings, as well as programs aimed at giving ideas and inventions commercial life, such as the National Research Council's Industrial Research Assistance Program and Technology Partnerships Canada.

In other words, Canadian governments make an important contribution to world-class R&D that will, in many instances, emerge as viable early-stage deal flow of interest to the VC industry.

This being said, venture professionals also believed that government should be more deeply engaged in proof-of-principle activity at the front-end of the commercialization process. Respondents noted that many new business formations are spun out of post-secondary institutions and other research centres in a premature state, and even without adequate validation of new technologies. As a result, Canadian VC funds are too frequently working with "raw material" in seed and startup transactions.

For this reason, survey respondents recommended that governments consider increasing expenditure on proof-of-principle facilities that bridge the gap between basic R&D and early-stage commercialization in the marketplace.

(12) Inadequate market infrastructure for sourcing quality deal flow.

With an average rating of 2.4, VC professionals did not see this issue as being a key challenge.

In the Canadian VC industry, there are a number of agents and intermediaries engaged in matching entrepreneurs with angels and venture fund managers, and otherwise facilitating deal flow and improving the fundamentals of the market's operation. For example, since 1987, Innocentre has performed a variety of roles in this regard, including that of as a business incubator, and today has operations in Alberta, Ontario and Quebec.

Some survey respondents believed that such agency activity was important, and especially in specific regions of the country. Others said that organizations that foster market relationships at the local level, such the Ottawa Centre for Research and Innovation (OCRI) and the TVG should be emulated elsewhere in Canada to promote early-stage activity.

Several respondents emphasized that such models for relationship building at the local level might be of particular value with respect to identifying and organizing angels. For some venture fund managers, this was of special importance given a desire to more frequently engage angels as a source of deal opportunities that were pre-screened and, in many instances, rendered "investment-ready".

(13) Regulatory barriers to advancing intellectual property and prototype testing.

Industry practitioners did not regard this issue to be of substantial concern overall, giving it an average rating of 1.7.

The only specific concern raised by survey respondents pertained to the approach of Canadian regulatory authorities to clinical trials for agri-food products. It was observed that while Canadian standards in this area are not substantially different from those in the United States, the government review procedures in this country are of unduly long duration and can consequently impede “time-to-market” for relevant early-stage ventures.

Respondents believed that other barriers posed by government regulation probably exist for certain types of business formation in the life sciences sector.

III.4 Public Policy Recommendations Arising from the Interviews

Professional managers interviewed for this report were aware of federal and provincial public policy initiatives in the area of early-commercialization. They were generally supportive of these, and other efforts on the part of government officials to increase their understanding of how the outputs of Canada’s innovation system realize their full potential in the marketplace and, wherever possible, to take steps in improving this process.

Survey respondents believed that the best way for government policy-makers to support the role of venture investment was to recognize the importance of the broader ecosystem in which market activity occurs.

This means that the domestic VC industry must be encouraged on its development path, along with the essential sources of quality deal flow – an increasingly solid base of seasoned entrepreneurs and business managers, particularly in emerging sectors, as well as more effective avenues through which new technologies generated in private and public sector research settings are tapped. Survey respondents argued that as this broader ecosystem matures, and the industry continues to focus on creating value for investors, its capacity for undertaking VC activity of all types will also grow and bear fruit.

As stated previously, survey respondents observed that both the demand and supply sides of venture activity have recently passed through several formative years in the Canadian market. On the supply side, this has been especially true for a still young community of balanced and specialty funds with mandates for making early-stage investments.

During the up-and-down market cycles evident since the late 1990s, the VC industry in Canada forged a stock of early-stage investors with fresh experience as company creators, or investors that have deepened this experience. As discussed, respondents feel that such management talent must not be squandered in the years ahead – for instance, due to capital supply shortages. Instead, all industry players should learn from the lessons of recent years, and strive to build on successes.

With these thoughts in mind, respondents made a number of suggestions for government policy-makers interested in supporting the ecosystem in which activity in early-stage ventures takes place. These included:

- **Encouraging institutional investor participation in the market:** Survey respondents said that governments have a key role to play in encouraging more pension funds and other institutional investors to participate in VC as limited partners. To this end, it was acknowledged that federal Minister of Finance's decision to eliminate of the foreign property ceiling in the 2005 budget was a step forward. Respondents believed other initiatives might be taken, such as removal of additional tax barriers, as proposed by the Canadian Venture Capital and Private Equity Association, or the creation of new tax incentives.
- **Government assuming more of a role as limited partner:** Both Canadian and American industry practitioners noted that, even under the best circumstances, some traditional sources of capital might be skittish about seed and other early-stage VC funds. For this reason, and in the interest of leveraging more institutional fund participation, government VC funds should consider increasing their role as lead partners in privately managed partnerships, perhaps by taking a subordinated return. As part of this strategy, several respondents also said that governments should also actively encourage the inception of funds-of-funds.
- **Advancing proof-of-principle activity in commercialization:** Many VC professionals argued that governments should greatly expand their role at the front-end of the commercialization process, whereby ideas and innovations emerging from post-secondary institutions and research centres are validated through proof-of-principle tests – prior to requests for VC financing. Some survey respondents saw this as a vital "missing piece" in Canada's innovation system, the absence of which undermines early-stage activity.
- **Facilitating Canadian entrepreneurial management skills:** Many survey respondents pointed to EIR programs as an important means of developing or utilizing the skills of entrepreneurs. While the VC industry is a primary locus for these, said respondents, governments and other public sector organizations may have a role in supporting related programs, such as has occurred widely in the United States (e.g., Ewing Marion Kaufmann Foundation).
- **Assisting identification and organization of angel investors:** VC professionals view angel investors as strategic partners, both as sources of pre-screened, value-added opportunities, and as company creators alongside fund managers in early-stage activity. Respondents were positive about OAA, TAG and other initiatives whereby angels are organized and higher profile. Several thought governments might assume more of a role in advancing this process in key regions and sector clusters, by supporting OCRI- or TVG-like models, for instance, which have fostered angel-VC fund relationships.
- **Removing barriers to cross-border venture activity:** Professional managers interviewed for this report acknowledged the increased activity of American VC funds and other foreign investors in Canadian early-stage transactions, as well as the implicit value of this trend in terms of access to resources, expertise, markets, etc. For this reason, most respondents said governments should investigate potential legal barriers that might unnecessarily impede or impair this activity, such as been suggested when non-

residents invest in private Canadian businesses through Delaware or offshore subsidiaries. Governments should also consider any unintended tax policy obstacles to the ability of American/foreign VC funds to establish permanent residence in Canada.

- **Addressing regulatory obstacles to early-stage VC investment:** While industry practitioners did not regard the regulatory standards of Canadian governments as a barrier to most early-stage activity, there was concern about how lengthy review procedures might unintentionally slow activity in agri-food and, perhaps, elsewhere in the life sciences sector. For this reason, some respondents recommended that governments consult with VC professionals on this topic and ensure that unnecessary delays do not occur.
- **Other areas of concern:** Without formulating specific proposals, survey respondents raised other issues they believed should be considered by governments, including: the potential role of Canadian expatriates in new business formations at home; geographic restrictions on government or government-assisted VC funds (e.g., LSVCC/retail funds) in an increasingly North American market, and other legal stipulations that unnecessarily complicate co-investment activity.

IV. Concluding Remarks

All professional managers interviewed for this report – Canadian angels and venture fund managers, as well as American VC industry practitioners – agreed there was a very strong business case for seed, startup and other early-stage investments in the Canadian market, now and in future.

In fact, survey respondents were generally bullish on future prospects for early-stage deal opportunities in Canada, due to a rich innovation system, inherent attributes of firms emerging in technology sector clusters across the country, and an increasingly large and experienced stock of VC investors capable of originating and leading company financings, as compared to less than a decade ago. The believed that by enhancing domestic capacity for undertaking early-stage investments, Canadian industry players could build on the trends highlighted in Section II of the report (**Trends in Early-Stage Venture Capital Activity in Canada, 1996-2004**), and address key gaps in activity (e.g., deal sizes, activity in certain regions and sectors, etc.).

Along these lines, respondents further indicated that, while specific challenges to early-stage activity certainly exist at present, these can be overcome by more effective partnerships and strategies that will ultimately enhance returns performance, and contribute substantially to Canadian economic competitiveness and prosperity. Above all, they said, industry players must continue to “learn by doing”, and develop market infrastructure and practices that support effective commercialization of ideas and inventions, entrepreneurship, and value-added company building.

Of course, industry efforts must be matched by evolution elsewhere in the ecosystem that supports venture activity. In addition, as survey respondents emphasized, growth in VC investment in early-stage activity to new levels relies on improvements in the capital supply conditions underlying the Canadian market as a whole. A VC supply situation that does not see improvements in the near-term, concluded respondents, threatens to undermine or erode progress since the 1990s, and block progress going forward.

Appendix A: Canadian and US Professional Managers Interviewed for This Report

Doug Hewson, Managing Partner
Axis Capital Corporation

Rainer Paduch
Band of Scoundrels and Ottawa Angel Alliance

Robert Inglese, Vice-President, Technology Seed Investments
BDC Venture Capital Group

Sophie Forest, Managing Partner
Brightspark Ventures

Andrew Waitman, Managing Partner, CFA
Celtic House Venture Partners

Randy Glein, Special Partner
Draper Fisher Jurvetson

Noubar Afeyan, Senior Managing Director and CEO
Flagship Ventures

Murray McLaughlin, President and CEO
Foragen Technologies Management

Louis Lacasse, President
GeneChem

Damian Lamb, Managing Director
Genesys Capital Partners

Livia Mahler, Partner
Greenstone Venture Partners

Les Lyall, Senior Vice-President
GrowthWorks

Bernard Hamel, Chairman and Senior General Partner
GTI Capital

Cédric Bisson, Partner (Life Sciences)
Chris Arsenault, Partner (InfoTech)
MSBi Capital

Jay Morrison, Managing Partner

Ken Wigglesworth, Principal (Eagle One Ventures)
Newbury Ventures

Ilse Treurnicht, President and CEO
Andrew Harrison, Associate
Primaxis Technology Ventures

Ramana Jampala, Partner
SAS Investors

Claude Haw, General Partner
Skypoint Capital Corporation

Bernard Coupal, President
T2C2 Capital

Ron Thompson
Toronto Angel Group

Sam Znaimer, Senior Vice-President
Ventures West Management

Appendix B: A Brief Description of Stages of Company Development

The following is based on standard research methodologies used in Canada and the United States for tracking activity in the venture capital market.

Pre-Seed
- Typically, an innovative idea is developed in a research setting
- Early assessment of commercial potential occurs
- Particular attention is paid to intellectual property concerns

Seed-Stage
- First steps in an evolving business entity
- Typically, the business/product remains in conceptual phase
- The focus is on R&D and/or initial product development

Startup-Stage
- From concept to company formation
- Key elements of business management infrastructure are developed
- The focus is on continued development of one or more products
- Often, this phase is pre-revenue

Other Early-Stage
- From company formation to commercial operation
- Business management infrastructure is further developed
- Activity often includes initial marketing, sales and revenues
- Product development may include prototype testing (IT) or clinical trials (life sciences)

Expansion-Stage
- Company moves to full commercial operation
- Marketing and sales volume intensified, with one or more revenue-generating products
- Often, the business is breaking-even or profitable
- Some product development may still be taking place

Other Late-Stage
- An established company with full productive capacity
- The focus is on a range of high growth objectives
- Typically, there is a regular profit stream
- If the company is troubled, it may attempt a restart

Appendix C: Supplementary Figures

FIG 16: Seed and Startup Dollars Invested and Companies Financed in Ontario

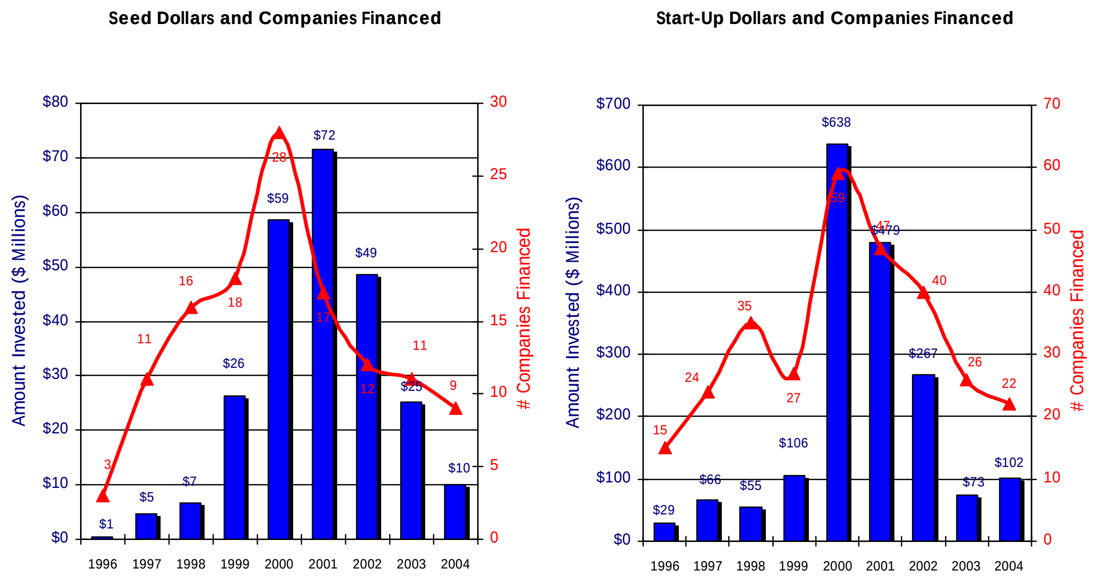


FIG 17: Early Stage Dollars Invested and Companies Financed in Ontario by Sector

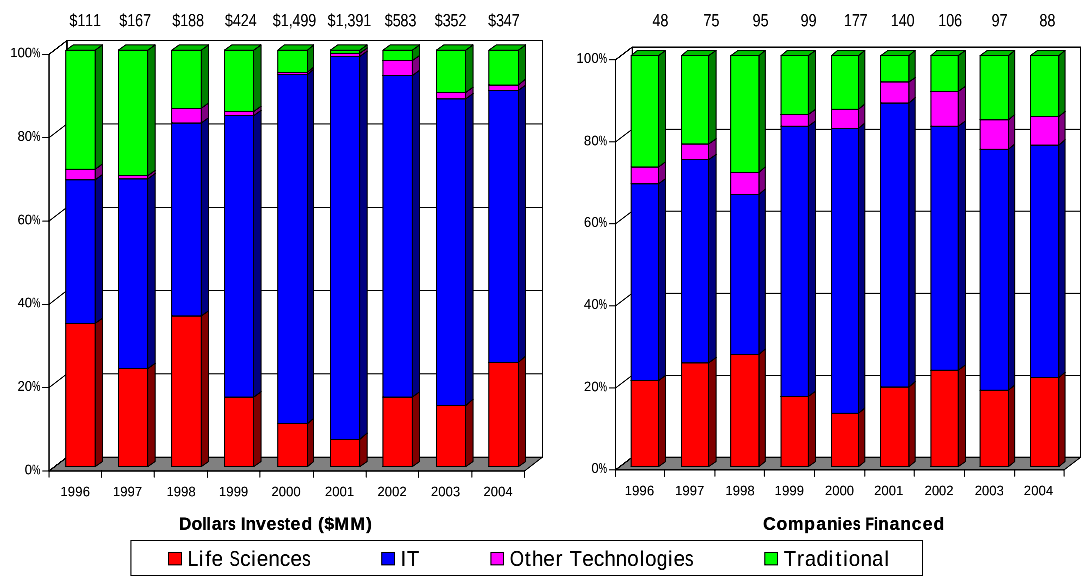


FIG 18: Early Stage Dollars Invested and Companies Financed in Ontario by Investor Type

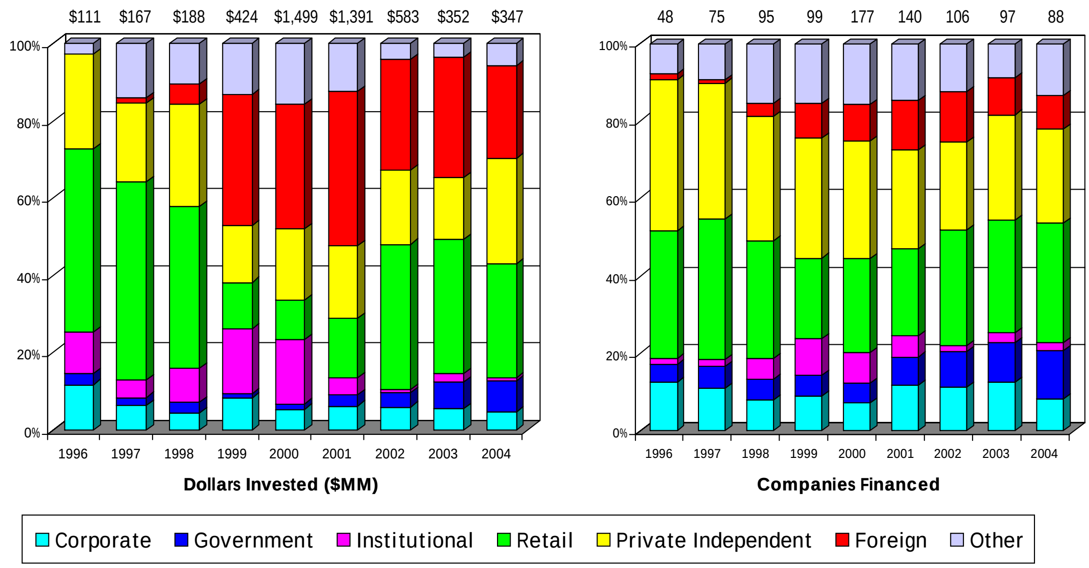


FIG 19: Seed Dollars Invested and Companies Financed in Ontario by Investor Type

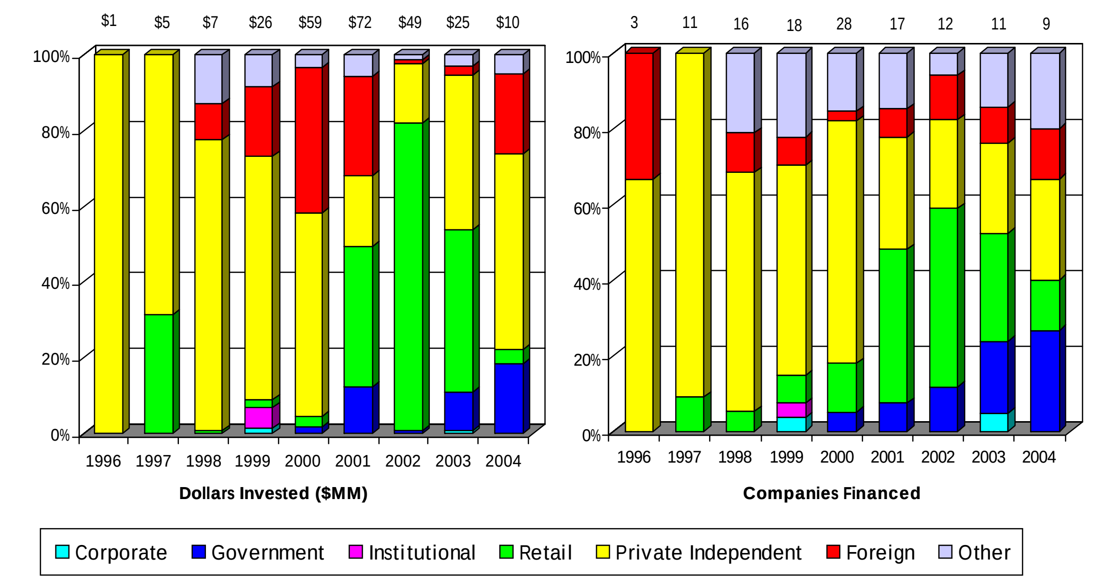


FIG 20: Dollars Invested and Companies Financed in Ontario by Foreign Investors by Stage