National Game Map
Final Report

Submitted to National Research Council

March 2005

Table of Contents

Project Description

This project extends the work of last year's BC game map and has provided an important resource for understanding the game development sector in Canada. It is **critical** to note that this report is confidential and cannot be publicly distributed in any form. The research gathered has been with the implicit understanding and guarantee of privacy and confidentiality.

To fully develop the new media sector, we need to progressively build renewable data sources, that, when combined, form the structure for long-term sector strategy. The below diagram illustrates the building blocks required to build that strategy, in sequential order, and shows the current gap in our collective industry knowledge.

Data Tool	Digital Games/ Entertainment	Digital Film/Animation	ELearning	Interactive Design	Mobile Tech.	Digital Broadcast
Province Map	✓	✓	✓	X	✓	✓
National Map	✓	X	X	X	X	✓
Database	✓	X	✓	✓	✓	✓
Value Chain	✓	X	✓	X	✓	✓
Technology Competence	✓	X	X	X	X	✓
Market Analysis	X	X	X	X	X	X

The national map and corresponding analyses form one of the last building blocks for the digital entertainment, or games, category. NRC-IRAP now has a substantial amount of data and contextual analysis to enable them to develop and drive key innovation strategy in this sector. The only remaining building block is the market analysis for international business development strategy.

For this project, New Media BC has completed the development of a market map of Canadian game development companies (attached separately) as well as the following activities:

- Profiling of companies in each of the provinces, wherever possible.
- Graphically demonstrating their interrelatedness with respect to technology and market strength.
- Undertaking a high level SWOT review to identify areas of core competence across Canada, as possible.
- Working with defined NRC taxonomies and data sources that could be ported into NRC's database.
- Incorporating the results of the recent digital broadcast delivery project into a media launch initiative

The project was completed on time and all deliverables were achieved. This report and the attached market map represent the summary of work conducted.

Executive Summary

Through this project, we identified more than 300 Canadian companies working in the game technology sector. The majority of the companies can be classified as developers. Indeed, Canada has gained an international reputation for its high quality game design abilities and deep product development experience. It is a growing, robust sector that will continue to flourish if strategic industry and government support can be provided. It is an industry that melds content with technology, culture with industry, and innovation with commercialization.

There are few companies focussing exclusively on either software or hardware innovation for the sole purpose of taking those products to market. Rather, companies that are developing truly innovative software applications are retaining the intellectual property and software deployment as an internal competitive advantage strategy. The proprietary platforms and engines developed are being kept ‘in house’ for the time being, especially those that are next generation based.

Development for next generation consoles will be significantly more expensive to produce. This may manifest in several ways:

- Consolidation may be more prevalent, with large companies continuing to acquire smaller companies who have viable IP or technology but not the infrastructure to support multi-million next generation title development.
- A focus back on tools, technology and processes are being seen as the competitive edge needed for small and mid-size enterprises to compete in a next generation market.
- The acquisition of Criterion (software producers of Renderware) by Electronic Arts, has created some stealth development in smaller companies. There is a concern in the industry of a mega company now owning a dominant tool, and therefore SMEs are determining their backup plans and alternative tool strategies.
- Greater development of original IP may present an opportunity for smaller companies as they compete where they can and develop markets outside of the next generation console sector.

We are also seeing a rise in mobile games, an area in which Canada has been traditionally immature from a global perspective. Given our depth of content development expertise, this may well present pioneering opportunities for new and existing game companies. As well, the barrier to entry is much less in the development of mobile games at this time, although the need for multiple versions for multiple handsets represents a significant challenge. A B.C.-based project called *Mobile MUSE* has been funded through the Canadian Culture Online Program through Canadian Heritage and its long-term aim is to develop Vancouver as a test bed for mobile cultural products.

Overall, it is safe to say that Canada has immense talent in the game technology sector and with progressive government and industry partnerships, the sector could be positioned as a world leader. This project has produced the first-ever national game map and provided a critical resource to the national new media industry. Many of the companies are aware of NRC-IRAP programs and most utilize the SRED program.

The level of innovation in this sector is astounding albeit difficult to support at times because of its proprietary, confidential and sometimes ‘stealth-like’ nature. There is an important role for the NRC to play in the steppingstones between innovation and commercialization. It is critical that technology innovation continue to be supported in this sector if we want to continue to dominate globally in this domain.

Special thanks to At Large Media for their services on data analyses and representation.

Survey Analysis

Overview

The New Media BC Game Technology Survey was in the field in late February – early March 2005. This national study gathered data from companies across the country, and included one-on-one interviews, an on-line survey, phone interviews and research from public sources. Over 300 companies are represented in the data presented.

Canada's game technology industry is spread across the country, with major clusters of activity in BC, Ontario and Quebec. It is comprised largely of small and medium sized businesses. 47% have 5 or fewer employees. 88% of the companies have fewer than 200 employees.

These companies are generating significant revenues. Of those that agreed to identify their revenues, 5% had gross revenues of over 30 million dollars last year, and 11% had revenues between 1 and 10 million.

These companies are vibrant and growing. 43% of them expect more than 10% growth in revenue next year. Almost all of them expect to hire more employees in the next 12 months.

The survey also found that game technology companies are developing a tremendous amount of proprietary technology, with opportunities for commercialization here and abroad. 56% of the companies are currently developing proprietary technology, and almost the same number (55%) expect to be developing proprietary technology in the next 12 months.

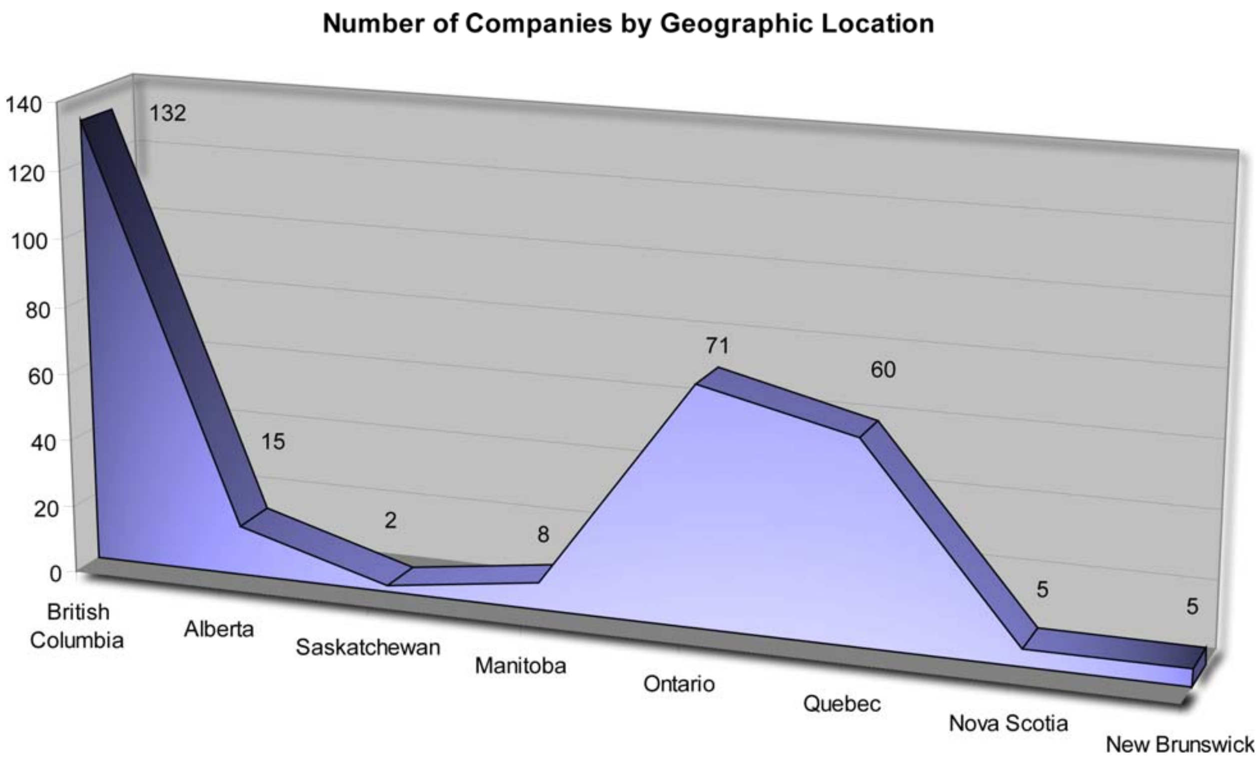
The most common types of proprietary technologies being developed include Game Engine software, Content and Asset Management software, and Internet Distribution software. There appear to be significant opportunities for marketing these technologies – 61% of companies believe they could develop viable commercial products from these technologies, while only 16% report having done so.

The top three markets of interest for Canadian game companies are North America, Europe, and China, however companies identified barriers to marketing their products internationally. Financing, business contacts and market knowledge remain the main barriers. Companies also identified a number of ways in which they could be assisted in developing their products. These include attending technology trade shows, business matching services, workshops, & how-to sessions.

Landscape: Geographic clusters

Canada's game technology companies are centred in British Columbia, Ontario and Quebec. These three provinces account for 88 % of the companies in the survey. Significantly, BC outpaces the other two provinces with 44 % of the companies represented (Ontario is at 24%, Quebec at 20%).

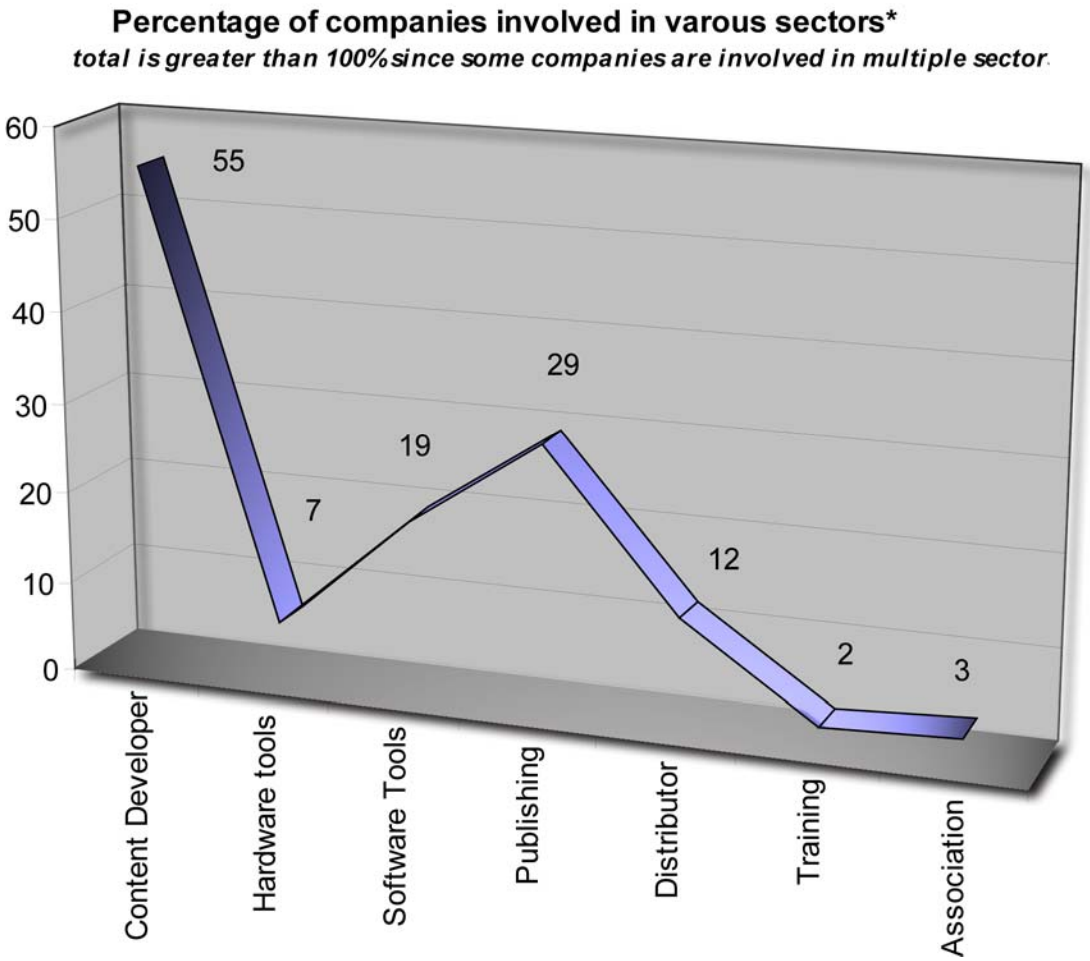
While there are some companies outside major urban centers, almost all development activity is occurring in the major cities of Vancouver, Toronto, and Montreal.



*Current activity in the north and Maritime Provinces is low. There is no representation from Prince Edward Island, Newfoundland and Labrador, Yukon, Northwest Territories or Nunavut in this survey.

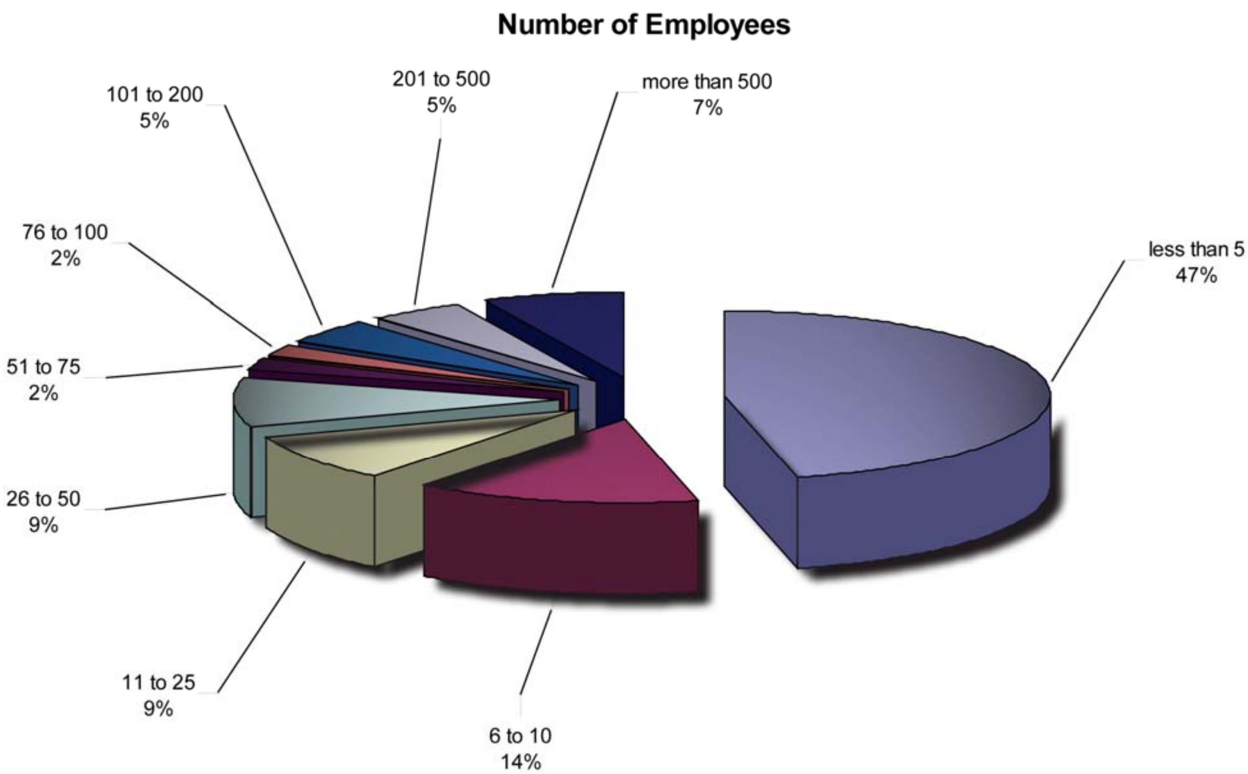
Technologies: Types of technology in development

Most companies are involved in more than one area of technology development. The most common are content development, publishing and software tools are the most active areas of development. More than half the companies surveyed (55 %) are involved in some form of content development, a third are involved in publishing (29%) and a fifth are engaged in developing software tools (20 %).



Size by Employees

The game technology industry in Canada remains largely the domain of small and medium business. While there are many examples of large developers, the vast majority of Canadian companies have fewer than 200 employees (88 %).

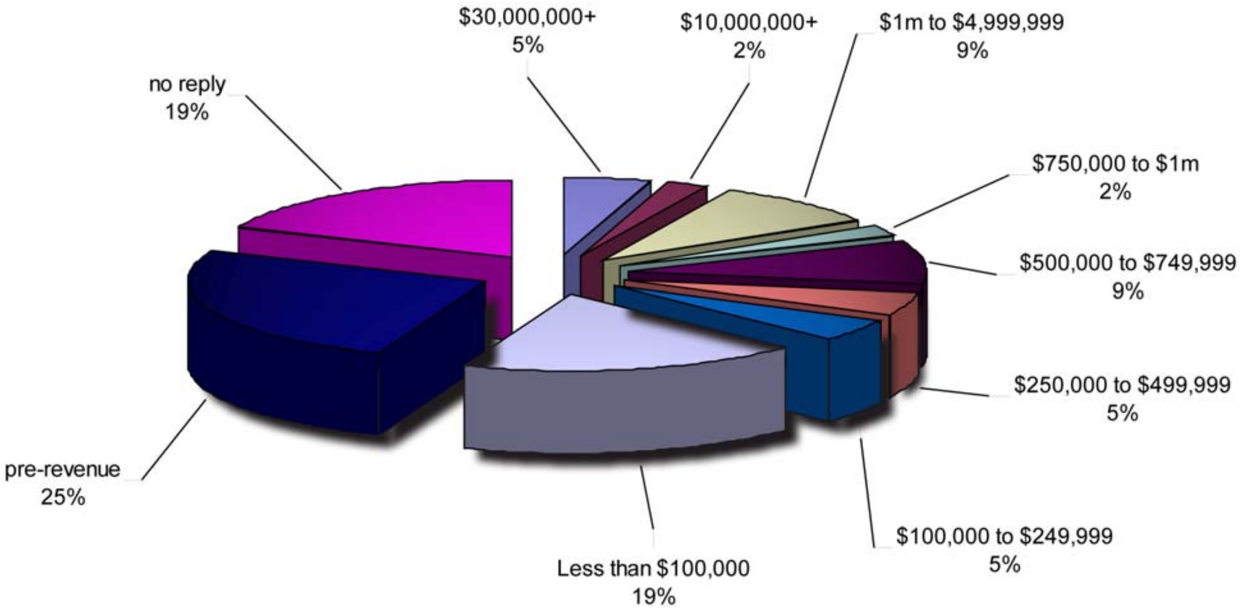


Size by Gross Revenue

Another measure of size is gross revenue, and Canada's game technology companies are generating significant revenues. 16% had revenue last year of over a million dollars (11 % had revenue between 1 and 10 million, and 5 % had revenue of over 30 million dollars).

The industry continues to have a large number of entrepreneurial start-ups. 25 % of those surveyed indicate they are in a pre-revenue phase, and almost 20 % show gross revenue of less than 100,000 dollars.

Gross Revenue last fiscal year



GrowthPredictors

Canadian companies are very optimistic about growth over the next 12 months. Almost all of those surveyed expect to hire new employees in the next year, and most are predicting moderate gains in revenue.

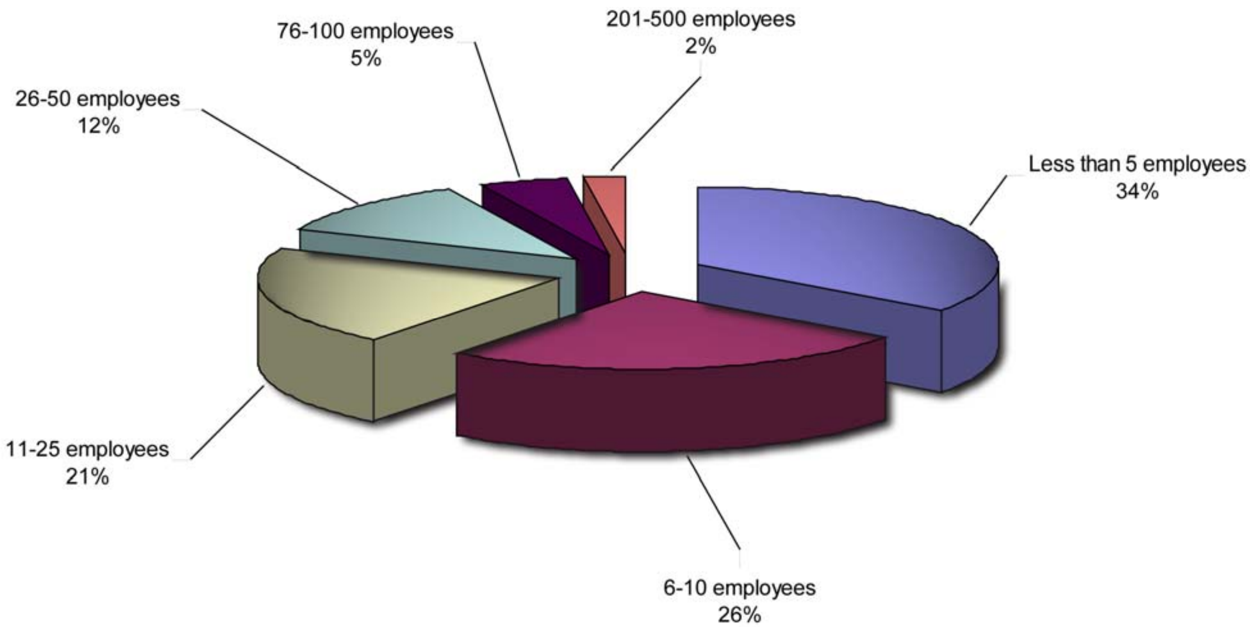
Employee Growth

The vast majority of companies expect to hire between 6 and 50 new employees next year (59%).

It would appear that small companies will likely remain small – 34% of those surveyed expect to hire fewer than 5 new employees next year.

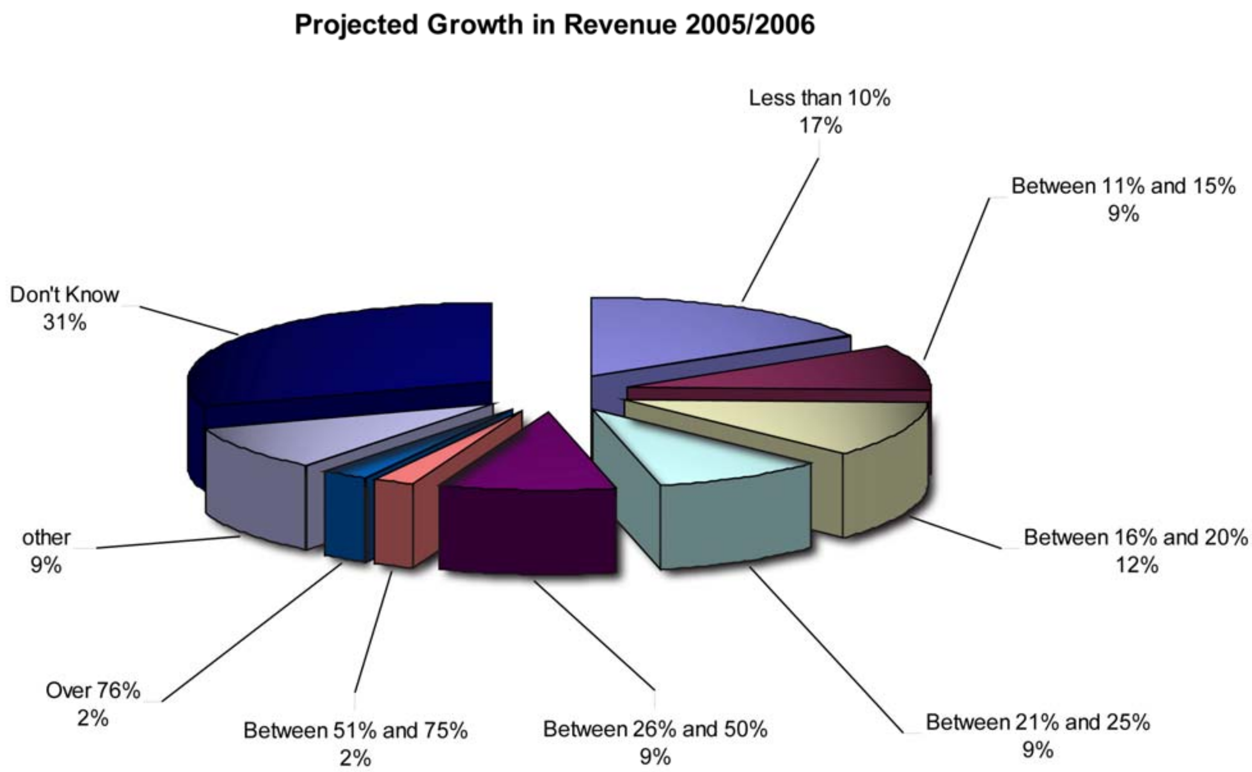
Conversely, large companies expect to hire significant numbers of employees, with 2% of companies predicting they'll hire between 200-500 employees in the next 12 months.

Projected Growth - New Employees in the next 12 months



Revenue Growth

Companies appear equally optimistic about their revenue growth in the next 12 months. 30% of companies expect their gross revenue to increase by between 16-50 percent next year. A significant number expect moderate growth, 17% predicting growth of less than 10 % next year.



Proprietary Technology

More than half of Canada's game technology companies (55%) are developing proprietary technology to aid them in production.

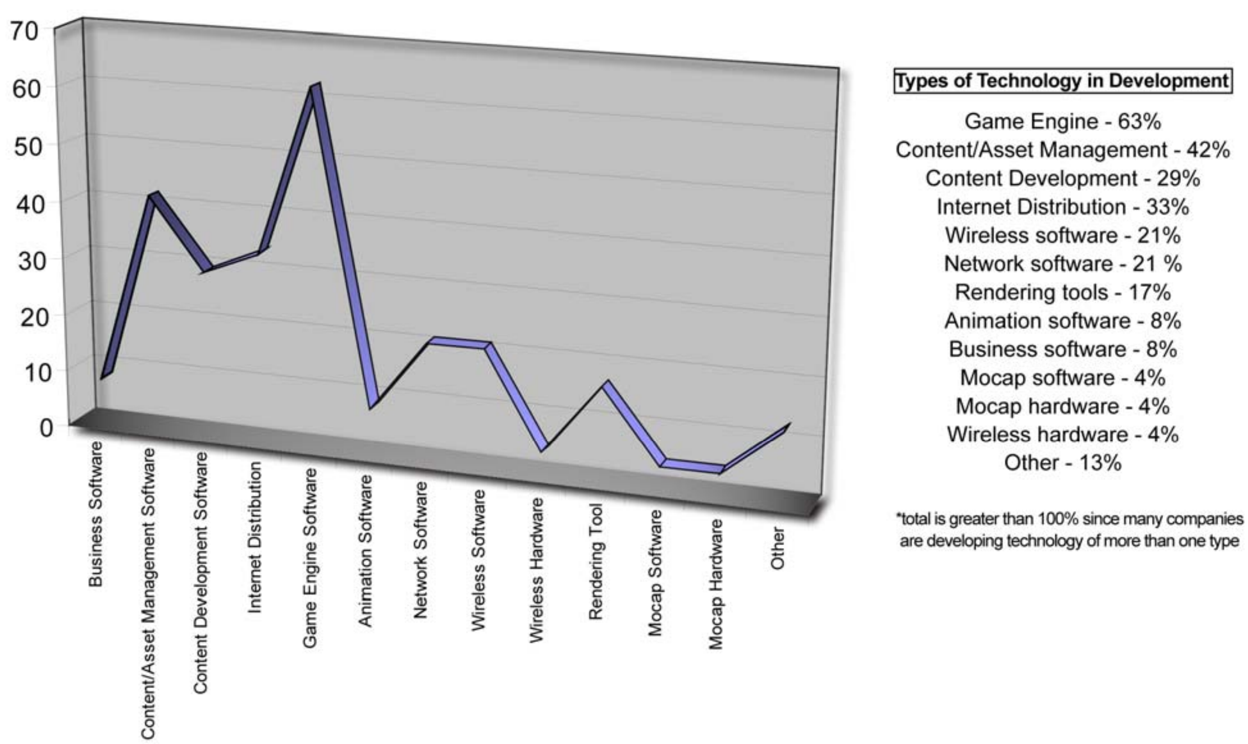
There appears to be a significant opportunity to market these technologies, as many of the companies surveyed indicated they believe the technologies they've developed could be commercialized. While some have already done so (16%), this number is in contrast to the 61% who think their proprietary technology might be commercially viable but who haven't yet commercialized their products.

This trend is likely to continue, as 55% of companies expect to further develop proprietary technology in the next 12 months.

Types of proprietary technology development

Companies were asked to identify the categories that best described the proprietary technology they have developed for the industry. 63% are creating game engine software, 42% content and asset management software, 33 % Internet distribution software, 29% content development software, 21% for both wireless and network software, 17% rendering tools, 8% each for animation and business software, 4% each for mocap software, mocap hardware, and wireless hardware.

Companies with Proprietary Technology:
Percentage of companies* developing proprietary technology



Marketing

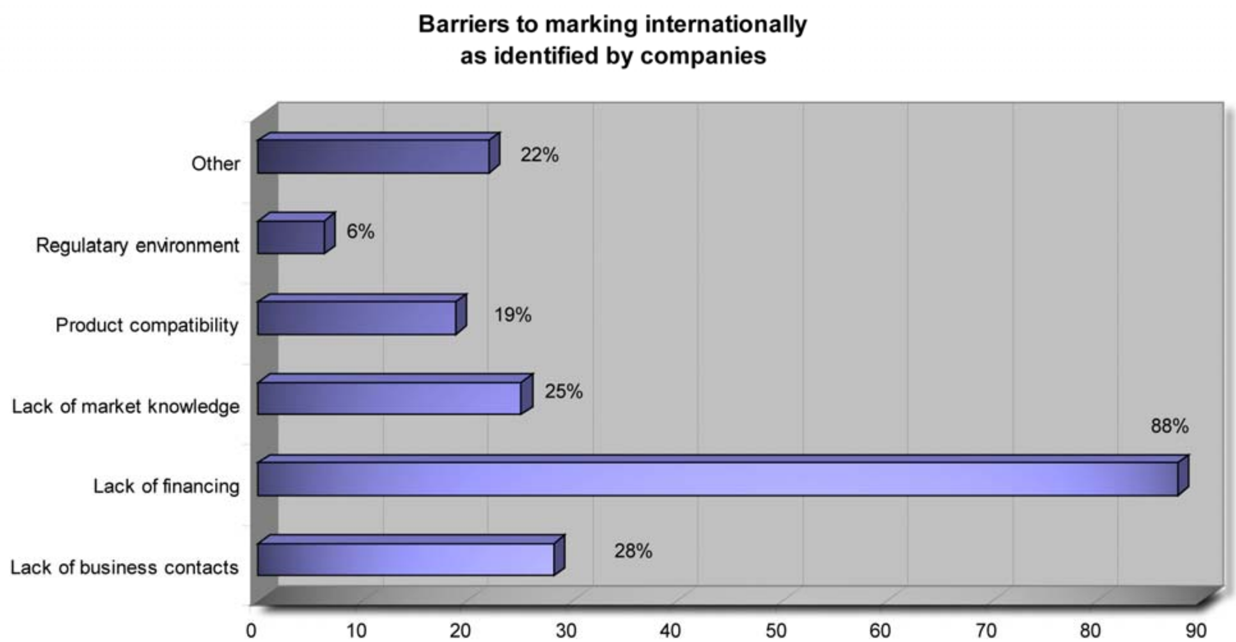
Companies were asked to identify key markets for their technology or applications, as well as to indicate barriers keeping them from those markets. They were also asked to identify areas that they feel could assist them in seeking out those markets.

Key markets

North America is by far the single most important market for these Canadian companies. Over 90% of them identified it as their primary key market. Europe is second at 33%, and China is 3rd at 34%. Additionally, 68% of companies are interested in marketing their technology to Asian markets in the next 12 months.

Key barriers

Not surprisingly, financing is cited as the key barrier to reaching international markets, with 88% of the companies identifying it as a hurdle to marketing internationally. The other major barriers include lack of business contacts (28%) and lack of market knowledge (25%). Product compatibility plays a significant role, with 19% of companies identifying it as a barrier to international markets.

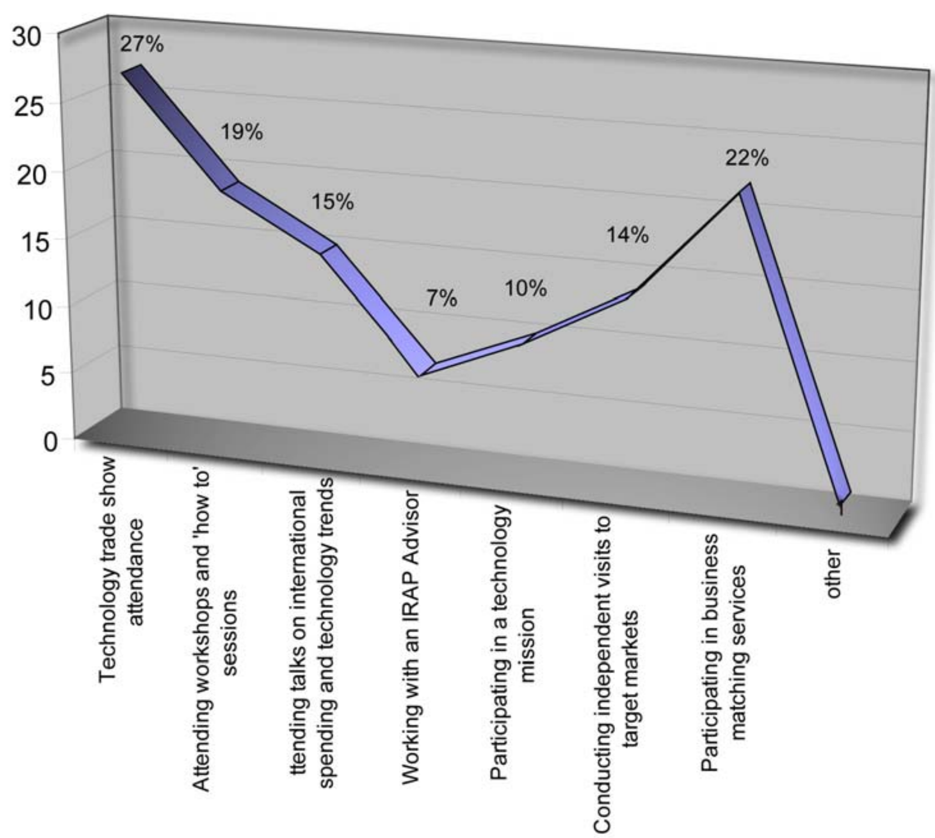


Support needed

Companies were asked to indicate the main areas that would best support them in promoting their technologies or applications internationally.

Attending technology trade shows was the most common answer (27%) followed by partnering and business matching services (22%) and attending workshops & 'how to' sessions (19%).

Top areas of support companies identified to help promote their technologies



Overall SWOT Analysis

As profiled, this sector is rapidly growing with the inherent opportunities and challenges. Outlined below are top-level issues that will need to be addressed by the sector and supporting partners.

Strengths

- Global leader in content development, first in the game and territory staked early
- Seasoned, highly skilled talent, good education programs and emerging pipeline
- Boot-strapping capabilities, high level of innovation with small amount of investment
- High level of innovation taking place with SMEs despite lack of funding, support
- NRC-IRAP has had notable impact on this industry – past programs have worked

Weaknesses

- Minimal independent distribution models (note Bioware online distribution store)
- Lack of visibility, challenges in 'getting to market'
- Lack of value recognized in technology licensing as additional business channel
- Lack of senior experience, need for consultancy help and coaching
- For some companies, lack of funding, time, people
- Work flow processes need to be improved and maximized for next gen titles
- Funding cycles are difficult, long and largely still misunderstood by VCs

Opportunities

- Significant growth level anticipated, need for talent will exceed supply
- Opportunity for educators to develop world class programs to meet this need
- Next generation processes may actually level technology and put more tools in the hands of content creators thus enabling deeper content development
- Recognition of other demographics, the female gamer market, for example
- Mobile and handheld markets are expected to grow rapidly and diversely
- Substantial interest and uptake in location based games and mobile play

Threats

- Lack of senior level/graduate programs to address talent needs
- Difficulty in easily immigrating people and smoothly employing their spouses
- High levels of proprietary innovation dilute technology innovation and products
- Weak performance in getting product to market at the SME level
- Many diverse next gen engines may create greater fragmentation, lesser value
- Consolidation will continue to take place and may weaken the SME sector
- Foreign acquisition of Canadian developed IP and technology is problematic and will weaken the sector in the long run if we cannot jointly develop strategies for retention

Recommendations

Resulting recommendations are drawn from the interview and survey data, and from an overall understanding of the sector and the challenges it faces.

Awareness

A number of companies interviewed for this project were still unaware of NRC-IRAP programs and how they could benefit from them. Continued awareness building and promotion is required.

Mentoring

While cash is king and companies are in critical need for technology innovation support, they also require seasoned management mentoring. In particular, support in process development, commercialization and international business development have been identified as areas in need of support.

Innovation

Funding for new media technology development is desperately lacking. We have consistently demonstrated that given support Canadian companies can build some of the best tools and products in the world. We need to continue to keep this on the forefront of the NRC agenda and continue to find meaningful ways to support innovation.

Pre-commercialization

SMEs need help understanding how to get to market and how to structure their development deals. NRC could definitely play a role in that area.

International Development

Many companies we spoke with did not have substantial international access or data with which to form partnerships. NRC has a role to play in this area.

Training

Previous boot camps and industry workshops have proven very valuable to SMEs and to the senior companies acting in mentoring roles. New Media BC would be pleased to continue this work with NRC.

Appendix B – National Game Map