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BC's IT Industry

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Executive Summary

Introduction

This study assessed the export performance of the information technology (IT) industry in British Columbia. The findings are preliminary and exploratory in nature, yet also revealing. This report gains its value as an extensive overview of the IT industry, specific to one geographic region of the country. The report identifies critical areas where more focused research is needed to provide the level of insight required to support further actionable recommendations. Further research should start with a qualitative assessment of the findings through focus groups and structured interviews to determine "why" findings are as they are.

For the purpose of this study, the IT industry was segmented into three groups: telecommunications equipment firms, software & services firms, and hardware & peripherals firms. The IT industry in Canada generates over $43 billion of products and services every year, making it the single most important sector for economic development in the country. With world IT revenues growing at an annual rate of 9.2%, the importance of this industry to Canada is second to none.

The B.C. region accounts for 15% of total firms in the industry. These firms are predominately characterized as being smaller in size than firms in other regions of the country. Export performance is critical to survival in this global industry. An accurate understanding of how firms are performing in export markets is essential on two counts: individual firms can assess how their activities and strategies relate to those of the industry, and government agencies can better understand the activities and the needs of the industry, as they must, before re-designing or developing new export assistance programs and services. This study is beneficial as it speaks to both individual firms and to government agencies responsible for international trade development.

Export Performance:

On a national basis, the IT industry exports some 74% of total output, 65% of which is directed to the U.S. market. In B.C., an average of 53% of total output is directed to the U.S. The reality in this industry is that exports are mandatory for survival. North American markets, though large, are becoming less attractive owing to declining growth rates, and increasing competitive pressure. The growth in world IT markets such as Asia and the Americas provide both the opportunity to diversity exports, and to find niche markets where competitive pressures are less intense and sales margins are higher. For newly established niche firms, otherwise called SME's, future growth is dependent on their ability to succeed beyond U.S. markets, referred to in this report as "unfamiliar" markets.

This study makes the point that current export performance to such important, yet "unfamiliar" markets like S.E. Asia and the Americas is poor. While firms in this region have demonstrated a strong 41% growth in export intensity (% of total sales derived from exports) over the period 1990-1993, overall exports. The average firm in B.C. exported 48% of total sales in 1993, up from 34% in 1990, and this average is projected to reach 59% by 1996. Over the period 1993-96, export focus on the U.S. will decline modestly from 53% of total exports to 50%, and marginal export growth is expected to be achieved through entrance into those quickly emerging "unfamiliar" markets in S.E. Asia and the Americas. S.E. Asia is expected to account for 9% of total exports in 1996, up from 6% in 1993, while Latin America is projected to reach 3% of total export sales, up from 1% in 1993.

Diversification of exports into markets outside the U.S. is expected given the exploding growth in some world markets. However, the projected rate of export growth to S.E. Asia and to the Americas, in particular, over the period 1993-96 is surprisingly conservative. In the case of NAFTA, Canada has a comparative advantage in Mexico vis-à-vis all its competitors, except the U.S. It appears this strategic advantage will not be parlayed into the number of Canadian success stories as should be realized given the nature of this advantage. Firms appear to be more concerned with capitalizing on their previous efforts in S.E. Asia than gaining "first mover" advantage into Latin America.

"The Case for Software":

The research findings also present the case that the software industry is qualitatively different from both telecommunications equipment and hardware & peripherals firms. Software firms were found to be substantially smaller in annual sales, export sales and the average number of employees per firm. Software firms also were much less likely to invest in export development in terms of the percentage of marketing man-hours spent on international activities, and the percentage of the annual marketing budget allocated to international activities.

However, these firms have not shied away from the export challenge. Over the period 1990-93, software firms experienced greater growth rates in export intensity than did both telecommunications and hardware firms. Further, their projected export sales over the period 1993-96 indicate still greater growth rates in the export intensity of software firms compared to the rest of the IT industry. The software industry in this region appears to be rapidly gaining international competitiveness. Given the qualitative differences between software firms and other IT firms, more research is required to understand how to support the export development needs of this vital, emerging industry.

The study also assessed the use, the importance and the perceived effectiveness of sixteen government and private sector export promotion programs. Although this part of the study (Phase II) was not included in the scope of this report, summary findings have been included to round out the position that software firms are different that other IT firms; they have different needs, and therefore they need to be treated differently by export promotion programs. As evidence of this difference, software firms indicated significantly less use, and perceived that current export programs are significantly less important and less effective in meeting their needs, compared to both telecommunications and hardware firms.

Management Orientation:

Although the average B.C. firm exported only 48% of total revenue, compared to the national average of 74%, the research findings did indicate strong management motivation and commitment to exporting. These management orientations are necessary, but not sufficient factors in realizing successful export development Pre-survey interviews revealed strong "gaps" in the day-to-day tactical abilities of firms in pursing exports: qualified, product-specific market information, names of potential agents/partners in the host country were the most commonly mentioned. The findings in Phase II of the research assessed these tactical needs in much greater detail.

The survey was directed at the President, or head of marketing in the firm. The results revealed that 61% of individuals, who retain primary responsibility for exporting, have only the export experience gained in the current firm. Some 35% have export experience with other firms, 19% have worked abroad, 11% have some international training gained in Canada, and finally, 8% have some international training gained abroad.

As it appears, the majority of firms are operating in a truly global industry where international success is mandatory for most firms, with key marketing personnel that have very limited international business experience and training. These factors, combined with pre-survey interview results present a strong case for programs that effectively develop the international managerial skills required to boost the ability of firms in pursuing exports. The FiTT initiative (GeoFiTT/SectorFiTT programs) appear to "fit that bill", however, these programs seem to have lost momentum since their introduction. Clearly, there is an expressed demand, in this region, for this level of managerial development. If warranted, further resources must be given to these programs to ensure their continued improvement and delivery, particularly to the IT industry.

Firms with High Export Orientation:

Firms with a single view to international markets (spending 80% or more of their marketing man-hours on international activities) were found to be equal in size, in terms of annual sales and number of employees, compared to the sample as a whole. However, one important difference emerged. These high "man-hour" firms generated export contracts with significantly larger dollar values compared to their own domestic contracts.

Firms having, essentially, a single view to domestic markets (dedicating less than 20% of marketing man-hours to international activities) reported their export contracts had smaller dollar values compared to their own domestic contracts.

Not only are the high "man-hour" firms generating more absolute numbers of contracts in a given year, as would be expected, but their contracts have individual dollar values significantly larger than their domestic contracts. The difficulty of obtaining financing for international contracts is exponentially exacerbated for these "star" exporters, which as previously mentioned, have the same firm size characteristics as the general population of firms: smaller in size and fewer employees compared to average firms in other regions of Canada.

Market Research Methods:

Firms were asked to assess how frequently they used six primary and secondary market research methods, and to indicate how effective these methods have been. The results showed higher "effectiveness" scores for primary research methods compared to secondary methods, as would be expected. However, the findings indicated one method in particular was much more successful, in proportion to how often it was used: market research in the foreign country. The benefits of conducting highly tailored research in the foreign market is obvious, but the fact that it was the least used of all primary research methods may be the result of two reasons: the high cost of performing custom research in the foreign market, and the possible lack of in-house talent to perform this research effectively. The latter speculation is quite possible given earlier findings on the limited international business experience and training of the key marketing figure in the firm.

Both of these speculative reasons lend strong conceptual support for the development of a networking facility in Canada. A networking facility has been called for in other research reports and requested by other interest groups. The findings in this report, though preliminary, seem to convey a similar message. A networking facility could serve many purposes, just a few of which would be the identification of suitable firms in the domestic market for partnering, in terms of joint product development, product bundling & systems integrating, and the identification of joint market research interests. The identification of suitable partners for these types of ventures develops greater distinctive competencies within the firm, which in turn, leads to greater competitive advantages gained through management development, cost sharing and strategic partnering. All of these benefits can, and should, be accrued before going abroad. This is especially the true for SME's, hampered by limited resources and international experience, as was found in this study.

Strategic Partnering Activities:

The use of strategic partnering activities was examined in two separate areas of the survey. The first section asked firms to assess the relative frequency of use, and amount of success in using sixteen possible international sales strategies. The results reveal that strategic partnering activities were used less than expected, and were less successful that direct sales methods. The exception was the use of distributors in foreign countries which ranked nearly as successful as direct methods of involvement, such as the use of a firms' own sales representatives abroad, and the use of sales offices' abroad. Other strategic partnering activities such as joint ventures abroad and alliances with foreign firms were used much less, and were reported to be less successful than the other methods above. The use of domestically based third parties, such as leads supplied by industry associations ranked mid-scale in terms of success, while the use of consultants abroad and leads supplied by government agencies ranked last, among the sixteen methods.

In terms of specific joint venture activities, the most frequently used activity was joint marketing which was used by 44% of companies, then joint distribution, 30%; joint R&D, 24%; joint market research, 15%; and finally joint financing, 14%. The overall usage of these partnering methods is low relative to the perceived need for these activities. Furthermore, firms indicated relatively low to medium levels of importance for each of the above joint activities. More research needs to be performed to qualify the reasons for such low usage and importance scores.

Strategic partnerships are reported to be "high level" in nature, and significant in their importance to SME's in international markets. It would normally be expected that such partnerships would be denoted by the heavy use of formal written agreements. The results indicated approximately 50% of the reported agreements were "informal" in nature. The use of informal agreements appear to be as important, on average, as formal agreements.

How are firms benefiting by these informal agreements? How are they finding these partners? In government circles particularly, the use of strategic partnering seems to be heralded as the "only" method firms' should be using to expand exports. While these findings don't necessarily rebuff this perception, it does downplay the importance of strategic partnering activities in this region. Before goverment programs "ramp up" with more strategic partnering programs, the precise needs of IT firms need to be understood. These questions need to be examined further to present a full picture of the importance and the use of strategic partnering activities in this industry.

Entering Unfamiliar Markets:

Previous research in the arena of international marketing points to reality that firms who export primary to "familiar" markets such as the U.S.A., do not develop the necessary international skills to be successful exporters into "unfamiliar" markets. Paradoxically, it is "unfamiliar" markets such as those in Asia and the Americas that currently possess the greatest export growth opportunities.

An assessment of the methods and overall success of B.C. firms in entering five key Asian markets (Japan, Korea, China, Taiwan, and Malaysia) was performed for two reasons:

- to determine how the industry has handled the important Asian market, and to determine how much success has been achieved;
- to use the "Asian experience" as an example of how B.C. firms may treat entry into other important, yet "unfamiliar" countries.

Currently, Asia accounts for only 6% of B.C.'s exports, whereas the national average is 8%. Over 50% of the industry reported "no involvement" in any of these Asian markets. Of those firms active in at least one Asian market, only one in five firms entered that market proactively. These result indicate a comparatively low level of " export readiness" of B.C. firms in entering Asia, a region where B.C. has had a strong focus for some time. Coincidentally, the incidence of firms granting exclusivity in their distribution agreements was high (Korea 59%, Taiwan 44%, Malaysia 40%, Japan 35%, and China 32%) considering the tremendous growth rates and the overall importance of Asian markets. Why are B.C. firms giving away so much, so early in the game? This continued approach will affect this region's downstream performance in Asia.

British Columbia bills itself as "Canada's gateway to Asia", therefore, the comparatively low levels of involvement in Asia, along with the high levels of "exclusive" distribution agreements is surprising. Firms that grant exclusivity are severely limiting their ability downstream to change strategies as their firm evolves. Firms that grow in size and add new product lines may want to assume more control in the foreign market at a later time. These "strategic options" may be at risk if these agreements aren't structured with an efficient "back door" clause, as the window of opportunity to position new technology ahead of the competition may close.

Factors Associated with Export Success:

Statistical regression analysis was used to determine those factors that were strongly associated with export success. The results indicate that a combination of factors relating to firm characteristic's, firm competencies, and firm strategies were strongly associated.

A. Firm Characteristics:

Firm Size:

Firms that export more in absolute dollars also export more as a percentage of their total sales. While this points to the importance of firm size, it is not a sufficient factor in itself in assessing determinants of export success.

Service Requirements:

The more a firms' product's can "stand alone", in terms of service after the sale, the greater the export intensity of the firm. Service support can seriously tax the abilities of the small firm due to language, cultural and other barriers. This suggests that governments can play a key role in providing names of qualified contacts in the host market and to facilitate those connections to enable SME's to partner with local firms to supply product servicing.

Hi-Tech:

Firms with relatively more "hi-tech" products achieved higher dollar volume of exports, but not higher intensity of exports.

This suggests that different international strategies may work better depending on the nature of the firms technology. Larger firms seem to benefit more by using a "leading edge" technology strategy, where smaller firms seem better off using a "niche" strategy.

of Accounts:

High intensity exporters appear to focus on a small number of key accounts rather than spreading themselves thin. The greater the number of accounts served, the lower the export intensity of the firm.

Encouragingly, new-to-exporting firms demonstrated an equal level of export success as longer term exporters. This suggests that government programs should revise the "minimum" criteria by which they approve applications for export assistance, to include firms with less international success than is currently required for support.

B. Firm Competencies:

Motivation:

Firms motivated to export due to the availability of government subsidies proved to be less successful exporters, in terms of dollar volume.

Commitment to Exporting:

Management's focus on exporting drives export success. While most firms may perceive themselves dedicated to exporting, the survey results indicated that the highest dollar volume exporters agreed more with the statement, "exporting is the primary focus of our firm".

C. Firm Strategies:

Resources Allocated to Exporting:

The percentage of marketing man-hours dedicated to exporting was strongly correlated with export performance. Clearly, firms have to put their "time and money where their mouth is".

Joint Market:

The only joint activity that clearly lead to greater export success was the use of joint market research activities. Successful exporters seem to use strategic alliances as a method of gaining critical market data on foreign countries.

International Sales Methods:

Successful exporters demonstrated only two differences in their international sales strategies relative to less successful exporters. Successful exporters made more use of "trade shows abroad" while less successful exporters made more use of "trade shows in Canada".

Research Methods:

Of all the primary research methods for gathering market information, successful exporters used "market research in foreign market" to a greater degree than less successful exporters. Earlier findings also revealed that this method is also the least used of the primary research methods.

Also of interest was the finding that more successful exporters make less use of secondary data supplied by industry associations.

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Parts I - IV Introduction

I. Background Information:

This study was done to assess export performance and export strategies used by firms in the information technology (IT) sector in British Columbia. This region is important as it contains some 15% of the total IT industry in Canada according to Statistics Canada figures. These same figures portray the B.C. industry as having a quite different composition from the rest of the country. British Columbia firms tend to be smaller in terms of sales and number of employees than are firms in the rest of the country. This is due, in part, to the "niche" orientation of their products. Furthermore, the absence of a Northern Telecom manufacturing facility in British Columbia to attract and anchor the industry is evidence of the vitality and commitment of this region to the information technology industry. These characteristics provided for an ideal sample of small & medium sized (SME's) firms upon which to assess export performance & export strategies.

This report will profile the IT industry in B.C., and will examine key aspects of the international marketing function used by B.C. firms. This analysis will provide Industry Canada with both a snapshot perspective of what this region is doing now to develop export markets and where they hope to go over the next three years. This report will also begin to develop a profile of the strategies firms are using to become successful exporters compared to less successful exporters. This information will be of key strategic value to governments, as they attempt to re-design their policies, programs and services to more effectively support this vital, emerging industry. It will also benefit individual IT firms as they seek to continually improve their understanding of the industry and what other firms, like themselves, are doing.

IT: The Industry of the Future:

The IT industry is currently one of the most important industrial sectors in Canada. Annual revenues in the IT industry exceeded $43 billion in 1992, with over 70% of Canadian production exported. This latter fact contributes very favorably towards Canada's international balance of payments. The IT industry accounts for over 35% of all the R&D performed in Canada, and employs over 300,000 people (more than in banking, mining, forestry or auto assembly.)

The value of the IT industry, as an industry unto itself is impressive, as in 1992 IT manufacturing revenues were $19.1 billion and IT services revenues were $24.3 billion, jointly contributing 4.8% to Canada's GDP (exceeding the combined contributions of the aircraft, automobile and transportation services sectors). However, when you factor is its additional value as an "enabler" of competitiveness for most other industries, the importance of the IT industry is undisputed. On a global level, the importance of IT is staggering.

"The world's IT industry is projected to grow at an annual rate of 9.2%, and is forecast to exceed $3.2 trillion by the year 2000. Current global revenues are $1.9 trillion, with Canada's share at 3 percent. By the year 2000, the IT industry will account for nearly $1 of every $6 of global GNP."

Canada's International Trade Business Plan, IT sector: 1994-95 (Research by SRI International)

Not by coincidence, governments and business gurus alike have, in recent years, also emphasized the need to drive the growth of SME's. Much of this growth, it is said, will need to come through the continuing development of export markets; both current export markets and new ones. It goes without saying that Canada is far too dependent on the United States as an export market. Any first year economics student understands that a country with a heavy trade dependence on a single market is vulnerable to changes in both the political and the economic climates in that country. However, there is a potentially an even greater risk in such a dependence.

As result of this reliance on a single market, most Canadian firms have only this narrow view of what it takes to export. This experience is far from sufficient for firms who are now attempting to penetrate other, more complicated markets around the world. The export skills and requirements to enter "familiar" markets such as the U.S. are not adequate enough to successfully guide these same firms into "unfamiliar" markets, which by definition, are most markets outside the United States. It is these same "unfamiliar" markets, for example, countries in Asia, Europe and Latin America, that are enjoying levels of growth well beyond what is available in North America. If Canadian firms wish to capture some of that growth, we need to start with an understanding of what it takes to successfully export to these unfamiliar markets.

While the importance of exporting to Canada in undisputed, this importance is no more evident than in the IT industry. It is well understood that the nature of IT industry in Canada requires that firms export, en masse, in order to survive, yet alone prosper. While the Canadian IT industry is purported to export some 74% of total production, it is also the case that 65% of those exports are directed to the U.S.

In addition, it is informally estimated by Industry Canada that some 31 firms account for over 90% of total industry production. It would be interesting to know what percent of total exports is also attributable to these same 31 firms, however, those numbers are unavailable given the confidentiality of Statistics Canada data. In any event, one may assume that these same 31 firms are also the dominant exporters.

What kind of a picture does this paint? It portrays the Canadian IT industry as one that is clearly dominated by a handful of firms, while the remaining 13,000+ firms struggle to secure export markets for their products and services. The products produced by these SME's are heralded as being some of the best in the world, however, they are certainly not achieving the level of export success that is warranted.

The IT industry faces two serious challenges that threaten the prosperity of the industry in the foreseeable future:

- Current Canadian exporters must learn how to successfully compete in markets other than the U.S. into those rapidly emerging, yet "unfamiliar" territories; and
- Small & medium sized firms need to understand what's involved in building "true" export readiness into

non U.S. markets.

"True export readiness" is broadly defined here as the ability to export to "unfamiliar" markets, where business and cultural protocols differ immensely from the domestic market. The overall implication here, is that if we are going to promote the development of exports, particularly away from the U.S., Canadian firms will require a more advanced set of export skills, export information and strategic government assistance to enable their success. Porter would agree with this statement:

"Given a more open global trade and business environment, firms in Canada need to develop global strategies if they are to compete successfully against foreign rival in many industries. Competing globally means competing beyond North America."

Michael E. Porter
Canada at the Crossroads

The Reality of a New Competitive Environment

Development of export markets, it could be argued, is tougher than for firms in other parts of the country. This is owing to the fact that products when highly "niched", by definition, require the firm to develop multiple export markets, owing to the limited size of the market in any one country. While this theoretical position is technically accurate, it must also be measured against the fact that some industrialized and most industrializing countries are experiencing demand for IT products and services at a rate never before seen. While these growth rates, across multiple and diverse new markets provide exciting opportunities for export, it concurrently requires a level of "true export readiness" not yet developed, in most cases, by small & medium sized IT firms.

This study was prompted by a need to understand the export performance of British Columbia firms in the information technology (IT) sector. With overwhelming emphasis in recent years on the "globalization of business" a new era of competition has been forced upon every major industrialized economy in the world. These forces have recently triggered, in many sectors, a far-reaching restructuring of our economy in an effort to rebuild Canada's global competitiveness. To achieve this, large corporations have been forced to downsize and streamline business operations in an attempt to remain competitive and profitable. The long term success of this restructuring remains to be seen. In his 1991 study *Canada at the Crossroads: The Reality of a New Competitive Environment*, Michael E. Porter states that:

" ...while Canada has certain advantages (rich natural resources, proximity to the U.S. market, history of insulation from international competition) that, "These same advantages, however, have led to an array of policies, strategies and attitudes on the part of governments, business, labor and individual Canadians that leave the economy in many respects ill equipped to respond to a rapidly changing competitive environment."

Resultingly, most business experts agree that the future of Canada lies in the ability of small & medium sized (SME's) firms to generate new growth in employment and wealth for the nation. SME's can flourish in global markets as they take advantage of their independence and their flexibility to respond to market niches left void, either intentionally or through apathy by larger corporations.

The importance of SME's to the revival of the Canadian economy is also recognized by the federal government. In its paper *Growing Small Business*, the government acknowledges that, "the growth of small businesses is essential to job creation in Canada....and, the building of an innovative economy requires the small and medium sized business sector to be a thriving one." As of 1989, SME's (under 500 employees) accounted for 63% of total workforce employment, up from 56% in 1978.

II. Objectives of the Study

The objectives for Phase I of the study were:

- To profile the B.C. industry in terms of its size and importance to Canada;
- To assess the export performance and behavior of IT firms in British Columbia;
- To start the process of identifying factors that lead to export readiness and success in the IT industry;
- To enable a strategic response both at the firm level and the government level, in directing future efforts to better achieve export readiness in the IT industry.

Phase II of this research, not included in this report, contained the following objectives:

- To identify the day-to-day export activities that contribute most to the export performance of IT firms.
- To identify the day-to-day export activities that are most problematic for IT firms in managing exports which give rise to the need for government export assistance programs.
- To analyze the use, effectiveness and importance of sixteen Export Promotion Programs offered through the federal government, the government of British Columbia and several non-government organizations (NGO's);
- To assess the interest and activities of B.C. firms in the Mexican market in light of the recently passed NAFTA agreement.

III. Scope of Study

This study involved information technology (IT) firms in the province of British Columbia. The IT industry, as defined by Industry Canada, includes six sectors:

- Telecommunications Equipment
- Computer Hardware & Peripherals
- Computer Software & Services
- Micro-Electronics
- Consumer Electronics
- Instrumentation

The limited number of firms in the micro-electronics, consumer electronics and instrumentation sectors prompted the responses from these firms to be included in the computer hardware & peripherals sector, to provide for more meaningful analysis. As a result, this report will refer to three industry sectors in its analysis:

- Telecommunications Equipment;
- Computer Software and Services;
- Computer Hardware and Peripherals.

Structure of the Report:

This study desired to uncover differences in strategies used by firms across IT sectors. Therefore, this report will present analyses for the IT industry as a whole, and will reveal where individual sectors differ from each other.

In addition to highlighting the current "state" of the B.C. region, we will begin to build a profile of the strategies firms are using in B.C. to become successful exporters compared to less successful exporters.

V. Methodology:

A list of eligible firms was assembled using information from Industry Canada's BOSS database (Business Opportunities Sourcing
System), and sector directories supplied by B.C. Trade Development Corporation. A total of 235 firms were identified.

A review of existing literature on export success lead to the development of the survey. The survey was pretested on a representative sample of eight firms using interviews. Participants in the pretest were asked to complete the survey ahead of time, and then to meet with the researchers to discuss with us their impressions. Based on these interviews, modifications were made to both the scope and detail of the survey. This phase was completed May, 1993.

One hundred and sixty firms were contacted by phone to gain their agreement to complete the survey. Contact was made with either the President or the head of marketing in the firm. Upon agreement, a survey was sent. Three weeks later, those firms who had not responded were sent a reminder letter along with another copy of the survey. This phase was completed September, 1993.

A total of 88 responses were received, for a return rate of 55%. The distribution of responses between IT sectors is given here in Chart 1.

Click Here for Chart 1

The survey response, by sector, was proportionate to the population
of firms in the province, therefore, the results of the survey can be attributed to the province as a whole. However, given the differing nature of the IT industry in other regions of the country, these results should not be projected onto other regions.

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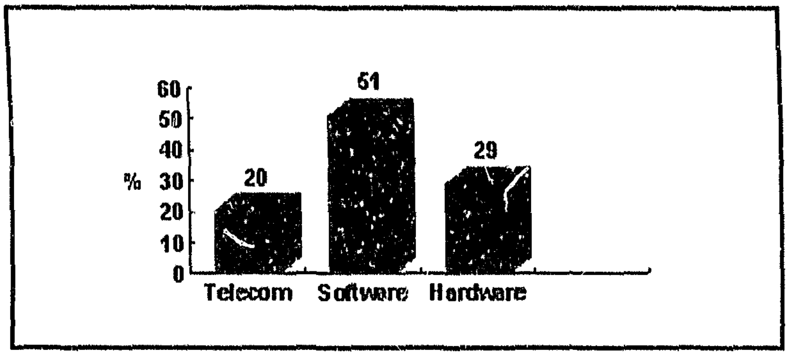
Chart 1



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V. General Characteristics of B.C. Firms:

A. Introduction:

The B.C. information technology industry is driven by a large number of entrepreneurial firms. As a result, the industry is a classic example of small and medium sized firms driving the growth of a key economic sector in Canada. This innovative industry is therefore comprised by a large number of firms, most with small employee bases and relatively small sales. Statistics Canada data indicates the B.C. industry accounts for 15% of total I.T. companies in Canada.

This relatively young industry has catapulted its early success into a fast growing region of the Canadian I.T. industry. With its strong emphasis on exports, it is already one of the rising stars of the B.C. economy.

B. Annual Sales:

Our survey results do corroborate the characterization of the industry as comprised of small yet entrepreneurial firms. Over eighty percent (82%) of firms in the B.C. industry had 1993 annual sales of under $5 Million The largest single concentration of firms, forty percent (41%), had sales in the $1-5 Million range. See Chart 2 for full details.

Click Here for Chart 2

Sector Analysis:

An analysis of the data for each sector revealed that on average, software firms are smaller than both hardware and telecommunications firms. A total of 56% of software firms have annual sales less than $1million, while only 16% of the telecommunications sector and a moderate 34% of the hardware sector fall into this category. Chart 3 on the next page provides a sector breakout of firm size, by annual sales.

Click Here for Chart 3

C. Employee Levels:

Similarly, B.C. firms also have small employee bases. Two thirds of the firms surveyed in British Columbia had an employee base under 20. The largest single concentration of firms (36%) reported a staff level of 1-10 employees, followed closely by the next largest concentration of firms (30%) with a staff level of 11-20 employees. Taken together, two thirds (66%) of the industry employ 20 or less people. When all firms are included, the average employee base for an I.T. firm in B.C. is 40. Chart 4 illustrates the breakout for the I.T. industry as a whole, and Chart 5 for each sector.

Click Here for Chart 4

Click Here for Chart 5

Sector Analysis:

Sectoral differences become amplified when firms are analyzed by the size of their employee base. Software firms have an average of 16 employees per firm as compared with 57 and 74 for hardware and telecommunications firms respectively.

Generally software firms tend to be newly established, and were started by entrepreneurs focusing on niche products, hence the smaller employee base.

Implications:

These results provide compelling evidence that technology firms are not homogeneous simply because they fall under the common banner of "Information Technology". In terms of managerial efficiency and effectiveness, firms with sixteen employees must, by necessity, be different than firms having seventy-four employees. Managers in smaller firms have to "wear more hats" and as a result can not be a "master of all trades", so to speak. These qualitative differences between small and more medium sized firms need to be understood. This is not to suggest that small firms are any less managerially "competent" than larger firms. The point being made is that as a smaller firm attempts to internationalize its sales base, its managerial resources will be taxed to a much greater degree than a larger firm, which can draw upon more internal resources. While larger firms may be able to rely on their internal resources, smaller firms must externalize more of their functions, for example by:

- involving more intermediaries (distributors)
- using external consultants/government agencies (market intelligence/financing)

Therefore, export needs may be quite different for larger firms whose managerial structures are more specialized, and where more resources are available. These so called "soft" differences in management structures are vital, and may be constricting many SME's in realizing their export potential.

Export development programs need to understand "end-user" segments more specifically. Export promotion programs could increase their effectiveness by more exactly matching their offerings to the needs of these target sub-segments. Clearly, there are some real sector differences that arise between software, hardware, and telecommunication firms, particularly along the lines of firm size.

One software firm, after trying to receive export assistance numerous times, was quoted as saying, "only the big companies that don't need support get awarded, small fish like us who need support don't stand a chance". This comment was made after they found out which firms actually received assistance.

D. Head Office Location & Ownership:

In terms of ownership, B.C. firms appear to be fiercely independent of the rest of the country. All firms, except one, indicated having their head office located in B.C. Relatedly, 88% of firms reported being privately owned. Taken together, this portrays the B.C. industry as highly autonomous with localized decision making and control. Firms appear to be more connected north/south than they are to eastern provinces.

The fact that decision making control for B.C. firms is retained exclusively within the province suggests that government export development programs need to be accessible at a local level and targeted specifically to local needs. There appears to be a degree of "psychic distance" between the B.C. industry and Ottawa, which leads to a strong sense of alienation both from federal government activities in Ottawa and from private sector activities in eastern Canada. This points further to the need for federal government programs to decentralize decision making on government programs away from Ottawa into their provincial offices.

E. Product Service and Product Adaptation Requirements:

Firms were asked to reveal information about the nature of their products in terms of their service requirements, and also, the proportion of total product sales that were derived from "stand alone" versus products that require adaptation.

1. Service Requirement: Firms were asked to indicate, "To what degree can your firms products be sold as a stand alone product without requiring service?" All three sectors indicated about 50% of their product line can be sold as "stand alone". Surprisingly, it was found that software firms did not have products that required a higher service commitment than products from hardware or telecommunications firms.

2. Adaptation Requirement: The proportion of a fir s total product sales that come from standardized products versus products that require adaptation on tne part of the manufacturer was also assessed. This revealed that on average, about 60% of total product sales are derived from standard products, and 40% from products requiring adaptation. Again, these averages remained remarkably consistent across all three industry sectors.

Implications:

The nature of a firm's product influences the strategies a firm requires to be successful in international markets. Two critical issues that affect appropriate firm level strategies are the degree to which its products can "stand alone" requiring limited servicing, and the degree to which its products require "adaptation" to meet end user specifications. Both upstream and downstream consequences result when products have significant service/adaptation requirements.

First, in looking downstream, one consequence is that products with significant service requirement present greater logistical challenges for SME's in delivering the service. The result? Individual firms have to develop their "servicing strategy" for each international market well before they respond to tenders or attempt to develop new business. Regardless of whether they choose to deliver service support using their own staff, or contract out this responsibility to a third party, the firm must be able to ensure prospective buyers that service will be delivered. Often, contracting out is most feasible strategy for SME's . In this instance, Canadian

Consulates abroad could greatly assist firms by keeping regularly updated lists of potential "service partners". To be useful, these lists need to be readily available in Canada on a "just in time" basis drawing on current technologies such fax-back systems, on-line systems.

Secondly, in looking upstream, firms may face greater challenges in getting "know the customer". Successfully adapting ones product requires intimate knowledge of the customers needs. In the case of getting to know international customers, language and culture barriers play a major role. For SME's, overcoming these barriers may likely require they outsource this function, for example, through parterning with local firms.

Given the importance of partnering to SME's seeking international contracts, they need much improved access to host country contacts, both in the private and public sector. Governments also need to play a much stronger role as a strategic broker of information and services.

Product Characteristics in Exporting:

Lessons from international marketing show that firms tend to be more successful in exporting standardized products than products that require adaptation. In the I.T. industry, are standardized products easier to export than custom products? To find out, an analysis was performed using above average exporters; firms with high exports relative to total sales. This was done to determine if these firms' performance were in part due to their focus on standardized products. Table 1 illustrates the importance of standardized products to each sector for firms that export most of their sales.

Table 1:

% of Total Product Sales	Telecommunications Equipment	Software & Services	Hardware & Peripherals
Sector Average	59	57	68
Above Average Exporters	48	62	68

The above table indicates that role of standardization in export performance varies by sector.

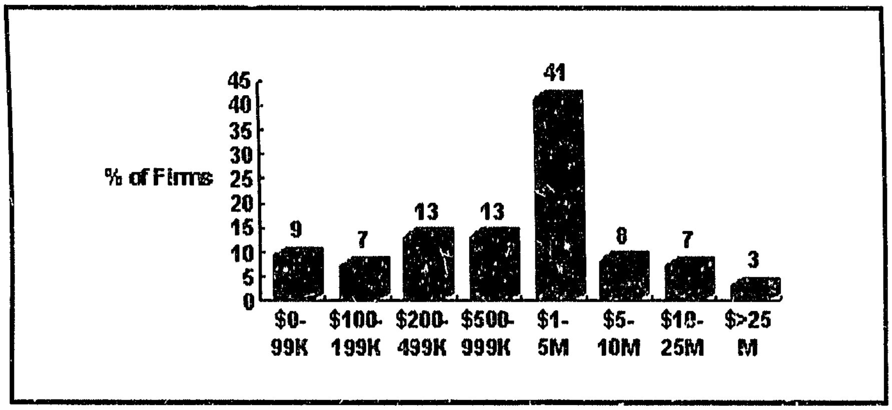
¨ High exporting telecommunications firms appear to gain their advantage by *adapting their products* more than the average firm.

¨ High exporting hardware firms appear to gain their advantage from the efficiencies realized in *standardizing* their products.

¨ High exporting software firms have the same degree of reliance on adapting their products as do lower exporting firms. This finding points to the importance of "product adaptation" to the software industry as a whole.

Comments/Suggestions/Questions about this document.

Chart 2


% of Firms
45
40
35
30
25
20
15
10
5
0
9
7
13
13
41
8
7
3
$0-99K
$100-199K
$200-499K
$500-999K
$1-5M
$5-10M
$10-25M
$>25 M

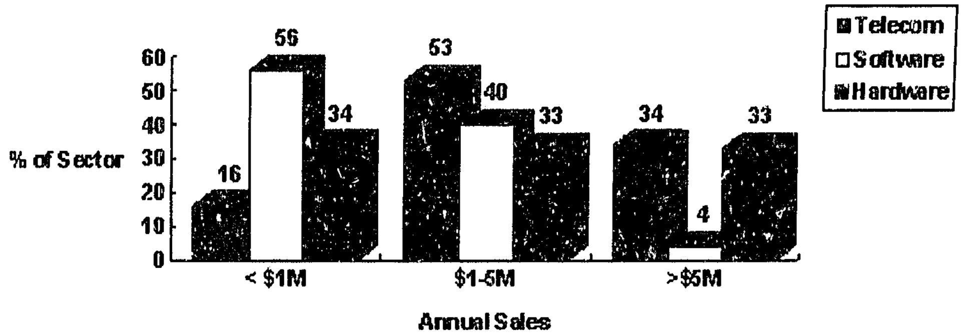

Telecom
Software
Hardware
% of Sector
60
50
40
30
20
10
0
16
56
34
53
40
33
34
4
33
< $1M
$1-5M
>$5M
Annual Sales

chart 3

Chart 4

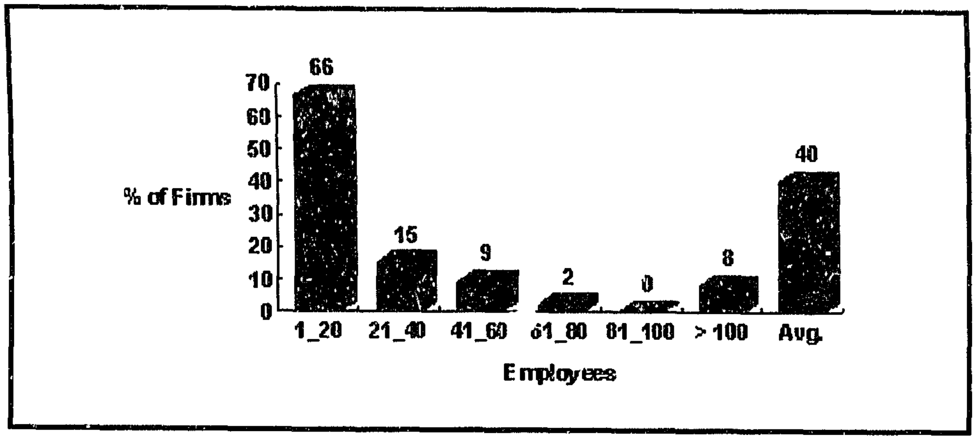
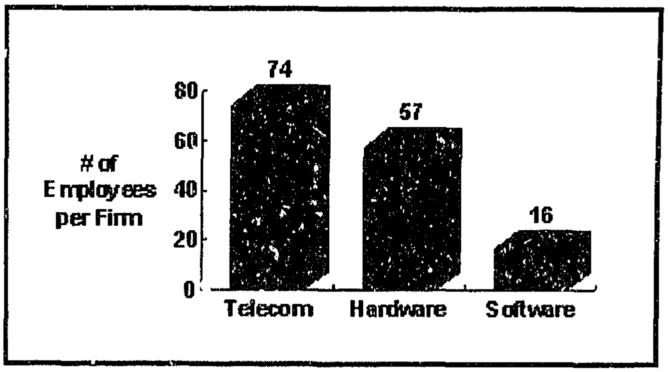

% of Firms
70
60
50
40
30
20
10
0
66
15
9
2
0
8
40
1_20
21_40
41_60
61_80
81_100
> 100
Avg.
Employees

Chart 5


74
57
16
80
60
40
20
0
of
Employees
per Firm
Telecom
Hardware
Software

Author - Dr. June N.P Francis, Simon Fraser University & Scott Caldwell, On Site Publications

Publication Date - 1999-03-16

VI. Export Performance:

A. Importance of Exporting to the Firm:

Exporting plays a pivotal role in the development of the I.T. industry in B.C. This is the reality of the being in the I.T. business. It is well understood that domestic demand is not sufficient to meet the revenue needs of these firms over the long run.

Firms in all sectors of the B.C. industry are export intensive. The average I.T. firm in B.C. exported 48% of total sales in 1993. On a sectoral basis, the hardware and telecommunications sectors reported slightly higher export levels at 55% and 54% of total sales respectively, while the software sector was the lowest at 43% of total sales. Chart 6 provides a graphical view of the differences in the average number of employees per firm in each sector.

Click Here for Chart 6

Analysis:

- B.C. lags behind the national I.T. export average of 74%, with 48%.
- The range of exports: 0-100%.

Top 20% of Firms in B.C. (by export intensity)

- this group was represented by: 39% telecommunications equipment firms, 39% hardware & peripherals firms, 22% software & services firms;
- exported an average of 97% of total sales in 1993;
- 2/3 had annual sales over $1Million in 1993;
- the average firm employed 61 staff;
- 95% involved in "high-tech" technology products compared to relatively "low-tech" technology products.

Top 20% of Firms in B.C. (by annual sales):

- this group was represented by: 50% hardware & peripherals firms, 38% telecommunications equipment firms and 12% software & services firms;

- all firms had a minimum of $5Million in annual sales in 1993;
- the average firm exported 60% of total sales in 1993;
- the average firm employed 151 staff.

This breakdown of firms is useful to provide a snapshot perspective of successful firms in this region. The section later in the report entitled *Strategies for Success*, provides an analysis of organizational factors statistically associated with export success..

Future Exports:

Firms are also optimistic about their future export potential. They predict that exports will account for the majority of firm sales, increasing from 48% of total sales in 1993 to an estimated average of 59% of total sales by 1996. This aggressive prediction appears realistic as it's in line with the growth of exports realized between 1990-93. During that period, exports as a percentage of total sales increased from 34% to 48% - a growth of 41% over that period. Over the period 1993-96, the projected rate of growth in export intensity is more conservative at 23%. Chart 7 illustrates the actual and projected growth in export intensity for the industry over the period 1990-1996.

Click Here for Chart 7

Export Intensity Figures:

Year	%
1990	34
1993	48
1996p	59

This industry is clearly on a fast paced export track. The realized export growth since 1990 was a staggering 41%! While this growth rate has been very strong, the somewhat conservative growth predicted over the period 1993-96 is cause for concern. Past successes can be partially attributed to growth in world markets, and partially to individual firm performance. If firms do not continue to keep pace with growth in world markets, they will lose ground vis-à-vis their competitors. Continued aggressive growth in this industry will require a sustained commitment by individual firms, however, government and industry groups must play better roles. The usual calls for financial institutions to provide support to small & medium sized firms is echoed here.

To capitalize on growing world markets, firms must have access to timely and accurate market intelligence, financial support and expertise, and these must be delivered across federal agencies in a coordinated manner.

Firms themselves face a significant challenge in managing growth, and in strategically responding to a very fast changing environment. Firms will need to make the transition from an entrepreneurial driven organization to more professionally managed organization without losing their technological savvy. This will be a critical period that will determine the long term viability of Canada's involvement in the worldwide IT market. It is clear that once "backbone" technologies have been installed in countries world wide, those niche firms with "first mover" advantage will be the ones to sustain a competitive advantage in the long term.

Clearly, exporting will play an even larger role in the ongoing development of firms in the I.T. sector in British Columbia.

Sector Differences:

Click Here for Chart 8

Export Intensity Figures, by Sector:

Sector: 1993: 1996p:

Software 40% 51%

Telecom 52% 66%

Hardware 56% 65%

Both telecommunications and hardware firms expect to retain their dominance in terms of *overall export intensity* for the period 1993-96, relative to software firms. However, it should be pointed out that software firms had the highest *rate of growth* in exports over the period 1990-93, and expect to continue having the highest growth rates over the period 1993-96 (see Table 2 below).

This finding is important as it suggests that the software industry in B.C. is growing in its international competitiveness, and therefore, greater attention is warranted from the federal government, especially in its export development programs.

Table 2: Export Intensities and Growth Rates, by Sector: 1990-1996

	1990	1993	Growth Rate 90-93	1996p	Growth Rate 93-96p
Telecommunications	37%	52%	41%	66%	27%
Software	28%	40%	43%	51%	28%
Hardware	43%	56%	30%	65%	16%

Implications:

Exports are crucial to the future of all of B.C.'s information technology sectors. By 1996, all sectors of the I. T. industry expect exports to account for a majority of their sales. For individual firms this will likely require greater attention to strategic management of their activities as they seek to either deepen or widen their export base. Expansion beyond initial export markets requires a more strategic approach than is typified in the initial stages of small firms' foray into exporting. Access to financial and managerial resources is already stretched within SME's, and this will become even more critical as the firm attempts to capitalize on export opportunities.

The assurance that marketing know-how and competencies needed to ensure long term growth will not be sacrificed at the expense of short term gains, needs to be shored up. Firms will need to exercise greater control over their international activities. Given the limited resources of these firms and as later explained, their limited international experience, there appears to be an important role for industry level and government level support of these industries' international expansion. Further, to the extent that firms' expansion will derive from market diversification beyond the U.S., they will require significant assistance to develop market experience to facilitate this expansion into unfamiliar markets. Current export assistance programs are not effective in meeting this challenge as this study also found.

B. Annual Exports in Dollar Terms:

Given this was a survey of SME's, average export sales per firm, not surprisingly, is low. Fifty seven percent (57%) of the I.T. industry reported export sales under $500,000 and over two thirds (68%) reported annual export sales of less than $1 million dollars. Only 11% of firms reported export sales over $5Million dollars. Charts 9 and 10 provide a graphical view of this data, across all I.T. firms and then on a sector by sector basis.

Click Here for Chart 9

Sector Analysis

Hardware and telecommunications firms are relatively larger dollar volume exporters than are software firms. As indicated in chart 10, the software industry is dominated by really small dollar- value exporters with 82% of software firms exporting under $1 Million in 1993, compared to 58% and [illegible]% for telecommunications and hardware firms respectively.

Again, there appear to be qualitative differences between software firms and the other two sectors. This implies that any industry or government level programs will need to address the differing needs of these small dollar-volume exporters, yet high growth rate exporters. Future reports will outline the expressed needs of this sector relative to the rest of the I.T. industry.

Click Here for Chart 10

C. Stage of Export Development

I.T. firms in British Columbia are relatively new to exporting. Approximately one third of all firms (32%) have less than 3 years export experience. A further 45% have between 4 and 9 years exporting experience, with only 19% of all firms having 10+ years exporting experience. Despite the relative recency of the industry's exporting activities, 96% of firms are involved in some degree of exporting with only 4% of firms reporting no exports at all.

Click Here for Chart 11

Sectoral Analysis:

Software & services firms are newer to exporting on average than are telecommunications equipment and hardware & peripheral firms. Approximately 40% of software firms have been exporting for fewer than 3 years. This compares with only 20% of telecommunications and 25% of hardware firms. This is not surprising given that many software firms are also newly established and will tend to seek domestic sales in the early stages. But it does lend even greater support to the general theme in this report that the software industry is a "different animal" than other I.T. sectors, and therefore, a different approach to support software firms is needed.

% of Firms Exporting Less Than 3 Years:

- Telecommunications equipment firms: 20%
- Hardware & peripherals firms: 25%
- Software & services firms: 40%

Implications:

Young firms are not likely to venture beyond familiar and geographically close markets in the early stages. They will tend to stay close to their culture until they feel they've "have their legs under them". Paradoxically, the major growth in world I.T. industry is occurring in geographically distant and culturally unfamiliar markets. As result, most of the world industry growth is outside of the these firms' "experience zone". If these niche firms are to tap into some of the world markets, they will need strategic intervention on the part of industry groups and all levels of government. These firms will need help in all aspects of the international process such as: awareness building of relevant market opportunities, product-specific market knowledge, logistical knowledge, knowledge of available intermediaries (distributors, public sector facilitators), host country standards, certification requirements, among other important factors.

D. What Motivates Firms to Export?:

The underlying motivations driving firms to export can have a critical impact on their long term success in international markets. Reactive firms that are driven to international markets by quick "one-off" sales contracts to boost performance indicators are less likely to develop the required skills and put in the depth effort needed to become successful long term exporters.

Conversely, firms that proactively seek export markets are more likely to develop targeted strategies and to continuously adapt these strategies. These firms seek out market opportunities and are able to develop the international marketing competencies required to expand export sales. Proactive firms should be more successful at building their export skills, and therefore, their "true export readiness".

Firms were asked to indicate on a scale of 1 to 7, how important the following factors were in motivating their firm to export, where 1= not important; 7= very important:

- Management enthusiasm for exporting;
- Demand for your product in foreign markets;
- Higher profit potential in foreign markets;
- Tax benefits in foreign markets;
- Availability of government subsidies/assistance programs;
- Competitive pressure in foreign markets;
- Technological advantage of your products;
- Saturated domestic market;
- Excess production capacity.

The results are illustrated in Chart 12 below.

Click Here for Chart 12

As the chart illustrates, the top five motivating factors imply the firm is being "lured" into foreign markets as opposed to being "forced" by unfavorable domestic conditions. Unfavorable domestic conditions that often drive firms to seek markets abroad, such as the *saturation of the domestic markets* (4.03) and *excess production capacity* (2.4), were not major motivators. Interestingly, government based incentives such as *tax advantages* (2.56) and *availability of government programs* (3.33) were seen as very insignificant motivators.

Sector Analysis:

A sector analysis revealed no difference between sectors in the mean scores for each of the above nine motivators. That is, all three I.T. sectors are equally motivated to export by same factors.

Implications:

These findings are significant. They suggest B.C. firms are proactive in seeking international markets which is a necessary, but not sufficient factor for firms seeking long term market success. However, keep in mind that this was a "self perception" question, and the results may be biased. In order find out, these findings will be judged later in the report against actual performance in Asia. As you will see, those findings call into question how successful B.C. firms have been in proactively seeking new market opportunities in such unfamiliar markets as Asia.

E. Management Commitment

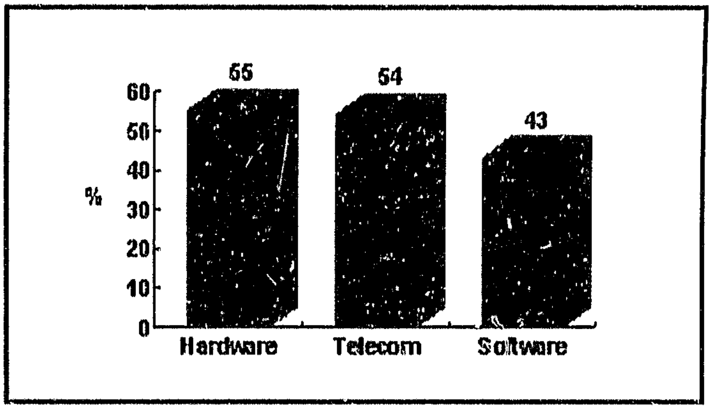
Another method of determining management's' "export" orientation is to assess management commitment to exporting. Management commitment and attitude to exporting has been shown in previous research to be a major determinant of export success. To assess management attitude and commitment to exporting, firms were asked to indicate their agreement with the following statements. (where 1 = greatly disagree; 7 = greatly agree)

Question:	Mean Score:
· We actively explore the possibility of exporting?	5.7
· Exporting is the key to our firm's success?	5.6
· Exporting is the primary focus of our firm?	4.5

Firms seeking export success need to ensure that their managerial team has the necessary degree of export motivation & demonstrated commitment. If these factors exist in the firm, and are properly guided, it should lead to some degree of export success.

The results thus far paint the general picture that B.C. firms are not only aware of the importance of exporting but have achieved a decent level of export success, especially since 1990 where exports grew 41% over the three year period. This should send strong signals to all levels of governments to place less emphasis on simply encouraging exports as a general growth strategy, and place *significantly more* emphasis on meeting the strategic and tactical needs of exporters.

chart 6



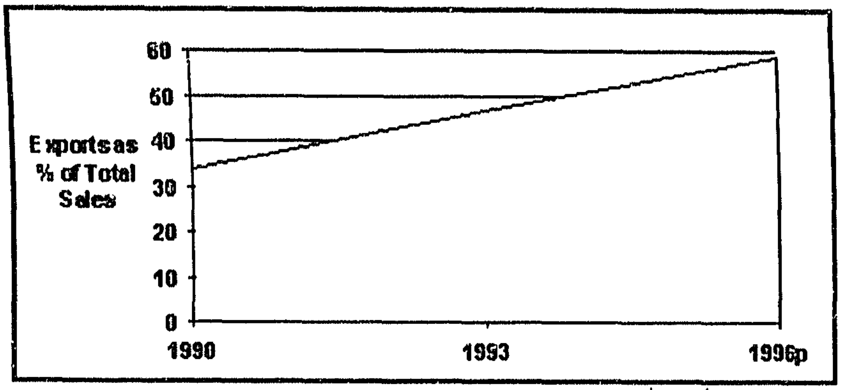


Chart 7

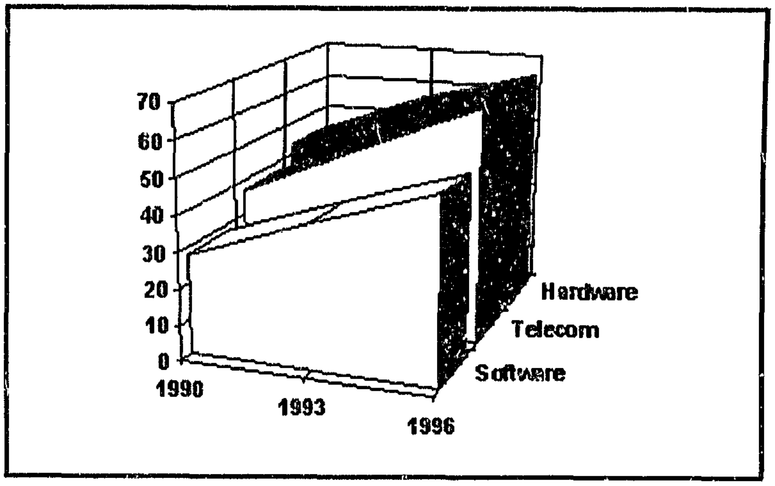

70
60
50
40
30
20
10
0
1990
1993
1996
Hardware
Telecom
Software

chart 8

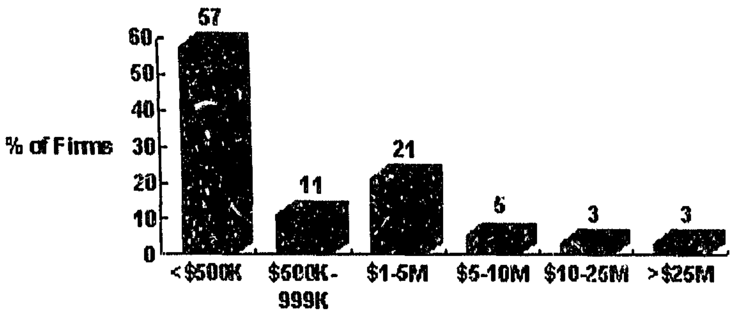
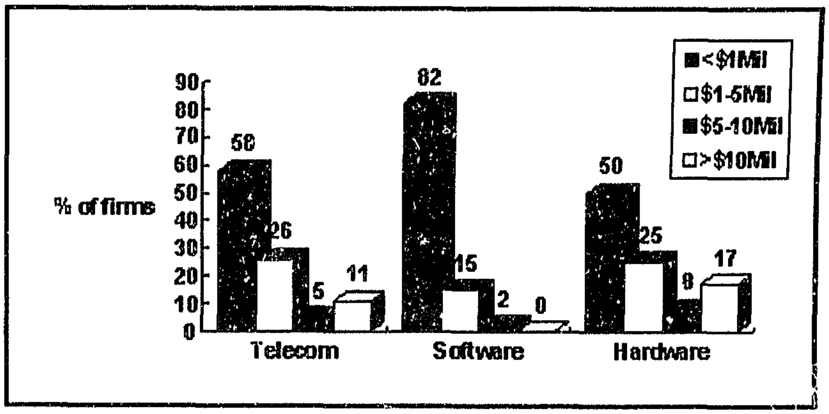

57
60
50
40
% of Firms
30
20
10
0
11
21
5
3
3
<$500K
$500K-999K
$1-5M
$5-10M
$10-25M
>$25M

chart 9



< $1Mil
$1-5Mil
$5-10Mil
> $10Mil
% of firms
90
80
70
60
50
40
30
20
10
0
58
26
5
11
82
15
2
0
50
25
8
17
Telecom
Software
Hardware

Chart 10

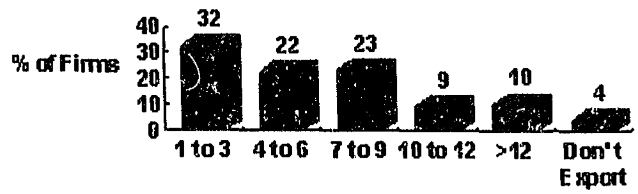

% of Firms
40
30
20
10
0
32
22
23
9
10
4
1 to 3
4 to 6
7 to 9
10 to 12
>12
Don't Export

Chart 11

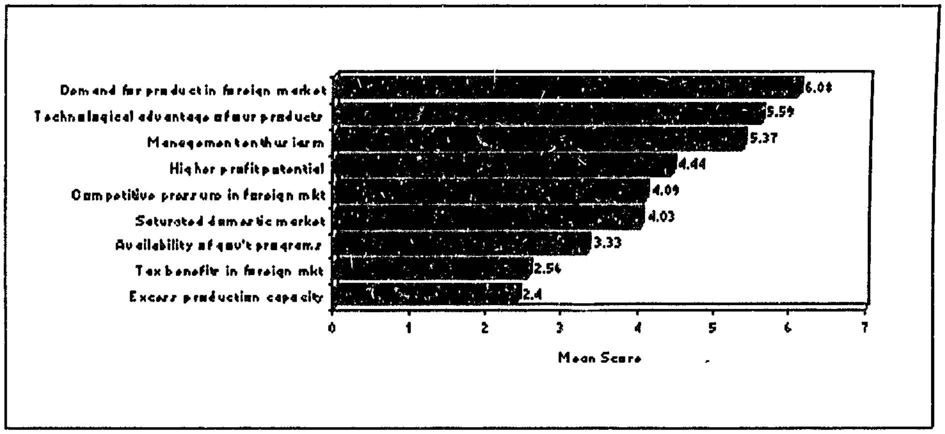

Demand for product in foreign market
Technological advantage of our products
Management enthusiasm
Higher profit potential
Competitive pressure in foreign mkt
Saturated domestic market
Availability of gov't programs
Tax benefits in foreign mkt
Excess production capacity
6.08
5.59
5.37
4.44
4.09
4.03
3.33
2.56
2.4
0
1
2
3
4
5
6
7
Mean Score

chart 12

Author - Dr. June N.P Francis, Simon Fraser University & Scott Caldwell, On Site Publications
Publication Date - 1999-03-16

VII. Export Competency

A. Export Experiences of Management:

Most literature on exporting posit that firms who are successful at exporting have as one of their criteria, export personnel with significant practical and theoretical training in international business, preferably with experience abroad. This section looks at the practical export experiences of the key export manager in the firm to determine if their background experiences are consistent with firms that tend to export proficiently.

The following chart illustrates the aggregate experiences of key management in B.C. firms with responsibility for exporting.

Click Here for Chart 13

* Note: the figures do not sum to 100 because respondents were able to select more than one category.

Chart 13 above indicates that nearly two thirds (61%) of the export managers in B.C. information technology firms have only the experience gained in the current firm to draw upon. Less than 20% of export managers have ever worked abroad or been trained in international business, either in Canada or abroad. As it stands, the majority of firms are operating in a global industry where international success is mandatory for most firms, with personnel that have very limited international business experience or training.

Implications:

These results are revealing. Though firms have managed to secure, on average, some 48% of total sales via exports, remember that this falls behind the national average of 74%. When you factor in the "niche" orientation of the B.C. industry relative to the national scene, the export percentages, in theory, should be higher for niche firms.

The government can play a key role here. Where management capability is nearing capacity either due to the limited resources of the firm or to the collective experiences of the management team, governments can assist these firms by playing a stronger strategic role. For example, interviews with firms suggested enormous demand for quality management/marketing training via workshops & seminars, targeted to the I.T. industry on such fast growing markets as Asia and the Americas. While government programs have long been lambasted for being cumbersome, poorly executed, and without any real "content", there is *still* a significant role to be played. Within the federal government agencies responsible for international trade development exist the resources and intelligence to sharply boost the performance of most firms, especially SME's with limited international experience.

Federal government agencies with responsibility for international activities need to look at how they are currently serving their customers, and find better ways to target the intelligence & resources within those agencies to a national audience of SME's. Taking a "client-focused" approach never disadvantaged a private sector firm, therefore, industry & government programs should be encouraged to adopt the same standards as the private sector they seek to assist.

The study also examined the use, effectiveness and importance of existing industry & government programs available to the I.T. industry. In summary, the results revealed that usage and effectiveness was extremely low. While a full discussion is beyond the scope of this Phase I report, the findings indicated most programs were also of limited importance to I.T. firms. These findings also support the general thrust of this report that technology industries are not the same as traditional manufacturing industries: the way they internationalize their operations is different, their needs are different, and therefore, the programs to assist these firms need to be much more tailored and targeted to specific sector needs.

VIII. Export Strategy

A. Destination of the Firm's First Exports:

The I.T. industry in B.C., not surprisingly, relies on th [illegible] ent U.S. market for most firms' first export sale. A total of 70% of firms indicated their first export sale [illegible] to the United States. This figure is consistent with Canada's overall trade picture vis-à-vis the U.S. mar [illegible] However this relatively comfortable first foray into international markets is quite insufficient to develop [illegible] skills required to venture into more distant and less familiar market[illegible]

The next most important market for first export sales was the United Kingdom (8%) also a relatively familiar market given language consistency and cultural similarities. As Chart 14 illustrates, all other export markets were represented with only one or two firms per country, therefore no trends were evident.

Click Here for Chart 14

B. Method of Gaining First Export Sale:

A series of questions assessed the export entry strategies used by B.C. firms. Research in export marketing points to the impact of entry strategy on later performance of exporters. How do firm's obtain their first export sale? How active the firm is in pursuing exporting and using its own initiative versus simply reacting to changes in the external environment such as filling unsolicited orders. The answers to these questions have a tremendous impact on the amount of organizational learning that takes place. The greater the direct involvement, the greater the learning. This organizational learning is overtly important to SME's with limited resources, as they will need to select markets where they are able to "transfer" this market entry knowledge into additional sales.

To assess the relative proactivity or reactivity of the I.T. industry, firms were asked to indicate how they secured their first export sale from among the following alternatives. Chart 15 provides the breakout.

1. Filled unsolicited order: 5. Trade mission:
2. Received lead from government: 6. Advertised in foreign market:
3. Received lead from other source: 7. Direct contact with buyer in foreign market:
4. Trade show:

Click Here for Chart 15

When the above factors are separated into "proactive" versus "reactive" entry methods, the results become more clear: 60% of firms achieved their first export sale through proactive entry methods, 40% from reactive entry methods. Charts 16 and 17 show the breakout between these methods.

Click Here for Chart 16

Click Here for Chart 17

Encouragingly, firms' first foray into foreign markets appears to be largely the result of their own initiative. As the chart shows, some 60% of first export sales were achieved proactively. The largest concentration of firms (39%) indicated that they *directly contacted the foreign buyer*, followed by *advertising in the foreign market* (15%), *trade missions* (5%) and *trade shows* (1%). The reported low incidence of firms using trade missions to achieve first export sale needs is somewhat misleading, given that non-exporting firms are not usually involved in such missions. The finding that trade shows proved to be an extremely ineffective strategy for "wanna be" exporters should cause non-exporting firms to take note.

These findings support the earlier results on management motivation & commitment. In short, it shows that firms are largely proactive in seeking the first export sale. A consequence of these findings is that the most successful method, direct contact, requires the firm to be highly involved in the foreign market, relative to the other entry methods. This type of entry method, though more successful, is also very demanding for SME's. Direct entry requires the firm to have: extensive market knowledge, lists of potential contacts, understanding of the customer and their needs, face to face meetings with the client to make the necessary presentations and have the ability to service the potential client after the initial presentation. These can be daunting challenges for firms "strong on technology" and "weak in international skills".

Many non-exporting and low exporting firms in the industry are those newly established firms still encumbered by "development" issues associated with fine tuning the technology. For these firms, the requirement to have their "finger on the pulse" of the foreign market and relationships with potential clients may seem too demanding, particularly given limited marketing resources in the initial phases of exporting.

This situation speaks again to the need for the federal government to have effective foreign market information programs in place, along with efficient access to contacts in the foreign market to assist firms in the way they need assistance most. During interviews, firms indicated that they have been enormously frustrated on two counts: finding the appropriate individuals in government to ask for information, and getting useful information when they do find the right person.

C. Current Export Market Diversification:

An assessment of the export diversification of B.C. industry is an important indication of this region's ability to sell outside of the U.S, into "unfamiliar" markets. The fact that we identify the need to focus on markets outside U.S. markets is not about "U.S. bashing", after all it is still the largest and most important market in the world. This is why we "rely" on the U.S. market to the degree we do; not simply because we're neighbors and can't see beyond their boundaries. Focus on the U.S. is an important part of an I.T. firms' strategy, however, even this market is not sufficient for most firms. Chart 18 illustrates how this industry's exports were diversified in 1993, and how this diversification is projected to be in 1996..

Click Here for Chart 18

As expected, the above chart highlights the importance of the U.S. market. However, while the industry reported 53% of export sales to the United States in 1993, this amount is less than the national average of 65%. B.C. anticipates reducing this percentage to 50% by 1996, a modest decrease of 3%. The next largest market for B.C. firms is Europe at 9%, then S.E. Asia at 6%. A host of other countries/regions including Japan, Mexico/Latin America and South America accounted for a mere 1-2% each of export sales.

Over the period 1993-96, only modest changes are evident in the markets that B.C. firms anticipate targeting. The decrease in relative exports to the U.S. shows up as modest growth in such emerging markets as S.E. Asia (+3%) and Latin America (+2%). However, even in 1996, B.C. firms anticipate only 9% and 3% of total exports, respectively, to these regions.

On a national scale, Canadian I.T. firms currently export nearly 8% of its I.T. products to S.E. Asia, and over 3% to Mexico. In comparison, B.C. lags behind the national average to both of these markets, which in the case of S.E. Asia is particularly interesting given B.C.'s general focus on Asian markets.

Implications:

Focusing on non-U.S. markets is not about "U.S. bashing" but about strategy: *growth strategy*. It is these unfamiliar markets that offer not only the greatest rates of growth for some new technologies, but it's really about the fact that Canadian I.T. firms can find lucrative markets for their existing technologies. This is not to say that international markets demand lesser technology than domestic markets, as a rule, only that the infrastructure in many countries limits the degree of sophistication in technology that can be adopted. This point is important to niche firms whose products require supporting technology and/or user familiarity before specialized products can be adopted.

While North American markets require firms to always be at leading edge of technology development, this development in expensive and in many cases prohibitively expensive. The issue of raising capital to finance the development of innovation is further problematic for SME's in the technology business, as is already highly publicized.

If Canadian firms were able to tap into the international demand for current technology, it would provide not only greater cash flow, but greater economies of scale (i.e.: lower costs and higher margins). This amounts to the basic building block for profitability; higher sales è lower costs. It is these profits that could be used to finance the continuing development of leading edge technology; first for North American markets, and then downstream to international markets. This model is circular over the foreseeable future, until international markets evolve to the level of sophistication of domestic markets. This reality, however, is clearly not that far away, as indicated here:

"Between 1992 and 1997, the (world) market share for North America is projected to be 47 percent, Europe 32 percent and Asia-Pacific region 18 percent."

"Half the world population is in the Asia-Pacific region with the use of I.T. growing at 20 percent annually. China is forecast to exceed the U.S. economy in total size by 2015."

Canada's International Trade Business Plan, IT Sector: 1994-95

(Research by INPUT)

As a result of this rapid world growth, this type of *growth strategy* has a limited "window of opportunity", until other countries meet, and then exceed our standards. The reality is, those countries with larger populations than Canada will eventually have the economies of scale to surpass us in the adoption of technology. Canada must act now to take advantage of its technological sophistication, relative to world markets, and leverage this advantage into a growth strategy. Once the sophistication of these important international markets meets that of North America, this "window" will close, and when it's closed the importance of exporting to non-U.S. markets won't be about growth, it'll be about survival.

This report recognizes that exporting is hardly a *fait accompli*. However, this analysis speaks to the need for government to take more seriously the effectiveness of its trade support services to be both more targeted to firm needs, and serving a broader range of export ready firms. This section introduced the importance of examining B.C.'s export market diversification: to identify the degree to which B.C. firms have been successful outside of U.S. markets in the past, and where they anticipate being successful over the next three years, in 1996. This will serve to pinpoint both the markets of strategic importance to this region, and the amount of work required to improve export success to these markets.

Given the surging demand in S.E. Asia, projected growth appears to be quite conservative. In the case of Mexico/Latin America, the current situation is understandable given the recency of the NAFTA, however, three years from now one might have suspected greater involvement in the market. Indeed, this may just be the situation in B.C.:

"In Latin America overall, the introduction of Intellectual Property Legislation and enforcement, as well as business practices more suited to the North American and European business culture, have made the whole region more attractive to Canadian I.T. exporters."

Canada's International Trade Business Plan, I.T. sector: 1994-95

Clearly, more effort needs to be taken to assist I.T. firms into these quickly emerging markets.

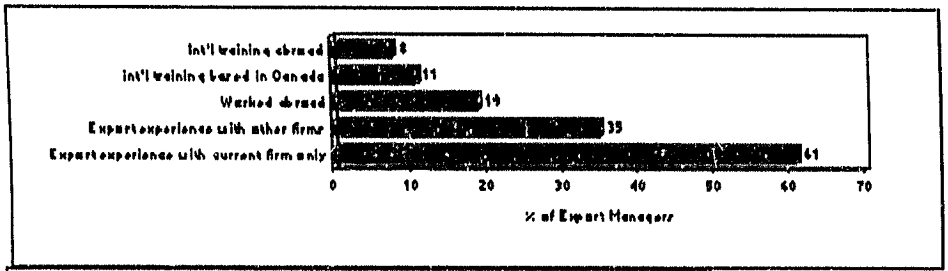
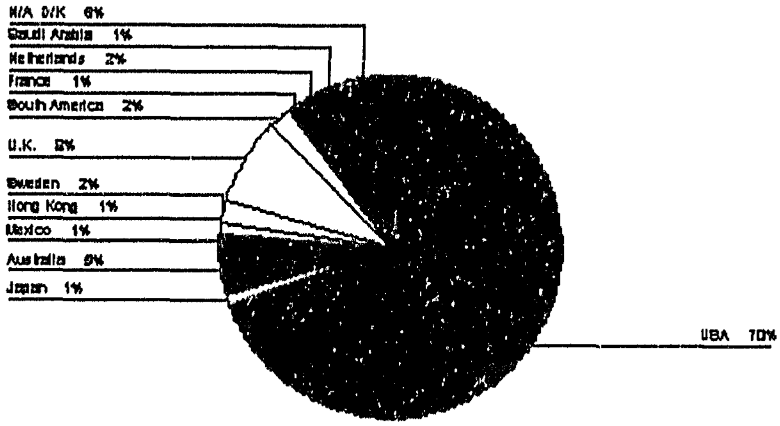


Chart 13: Export Experiences of Primary Export Managers in B.C.

chart 13



N/A D/K 6%
Saudi Arabia 1%
Netherlands 2%
France 1%
South America 2%
U.K.
Sweden 2%
Hong Kong 1%
Mexico 1%
Australia
Japan 1%
USA 70%

chart 14

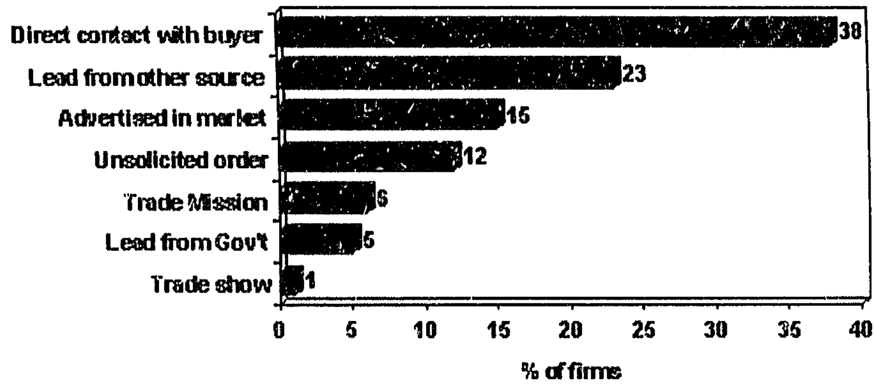

Direct contact with buyer
Lead from other source
Advertised in market
Unsolicited order
Trade Mission
Lead from Gov't
Trade show
38
23
15
12
6
5
1
0
5
10
15
20
25
30
35
40
% of firms

chart 15

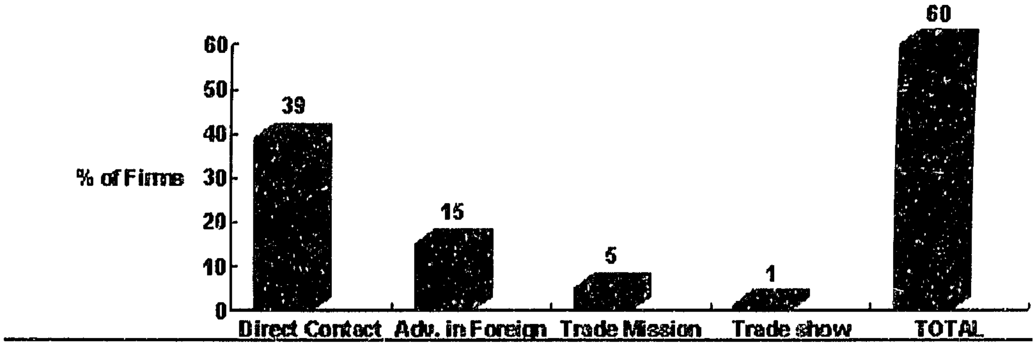

60
50
40
30
20
10
0
% of Firms
39
15
5
1
60
Direct Contact
Adv. in Foreign
Trade Mission
Trade show
TOTAL

chart 16

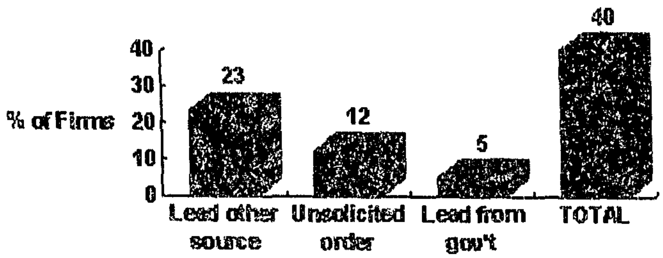

% of Firms
40
30
20
10
0
23
12
5
40
Lead other source
Unsolicited order
Lead from gov't
TOTAL

Chart 17

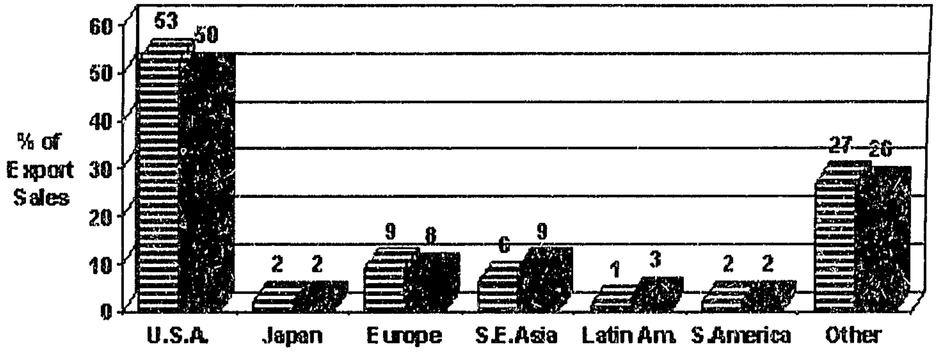

% of
Export
Sales
60
50
40
30
20
10
0
53
50
2
2
9
8
6
9
1
3
2
2
27
26
U.S.A.
Japan
Europe
S.E.Asia
Latin Am.
S.America
Other

Chart 18

Author - Dr. June N.P Francis, Simon Fraser University & Scott Caldwell, On Site Publications Publication Date - 1996-07-26

D. Resources Allocated to Exporting:

To assess whether firms "put their money where their mouth is", the survey assessed the efforts and the resources allocated to the export function. Specifically, the following issues were assessed:

- the percentage of marketing "man-hours" firms spend on international marketing activities;
- the percentage of the annual marketing budget spent on soliciting foreign sales.

Total Marketing Man-Hours Spent on International Activities:

The results were quite heavily polarized. The largest cluster of firms appeared in the very first category, 1-10%, with a total of 28% of the I.T. industry spending less than 10% of their marketing "man hours" on international activities. The average man-hours spent on international marketing activities, for the industry, was 41-50%. While this is in line with amount of average sales accounted for by exports (48%), it does still appear to be shy of the effort needed to achieve growth in the more demanding international environment. Software firms were particularly unlikely to invest heavily in "man-hours" on international marketing activities.

The following two charts show the breakout of marketing man-hours for 1993: Chart 19 shows the breakout in terms of overall industry percentages, and Chart 20 for each sector:

Click Here for Chart 19

Chart 19 indicates that I.T. firms in B.C. are most likely to spend either less than 20% or greater than 80% of their marketing man-hours on international activities. As one might suspect, those firms that spent most of their man-hours on international activities also had the highest export sales, both absolutely and relatively.

Click Here for Chart 20

Chart 20 points out that sectoral differences are really only evident in two of the man-hour categories:

1. Software firms are significantly more likely to spend under 20% of the man-hours on international activities, and
2. Telecommunications firms are significantly more likely to spend at least 80%.

Percentage of Annual Marketing Budget Spent on Foreign Sales:

The allocation of marketing dollars to soliciting foreign sales follows approximately the same curve as the allocation of marketing man-hours; clustered mainly at both ends of the scale, under 20% and over 80%. Over three quarters of firms in B.C. allocate their marketing dollars in this way. Chart 21 identifies the distribution in detail:

Click Here for Chart 21

Click Here for Chart 22

International Activities: By Sector

Implications:

Generally, firms are "putting their money where their mouth is". On average, over half (55%) of the industry spends at least 60% of their marketing budget on international activities. Given the small absolute size of firms in this region, they are not shying away from the exporting challenge.

E. Dollar Value and Gross Margins of Export Contracts:

Two questions assessed the profitability of competing in the international environment. Firms were questioned regarding the average dollar value and gross margins of their export contracts, as compared to domestic contracts. The results indicate firms are focusing international efforts on higher value customers relative to their domestic customers.

Dollar Value:

Some 60% of firms indicated their export contracts held a higher dollar value than did their domestic contracts. A sector analysis revealed that no one sector indicated significantly higher dollar values in their export contracts, relative to domestic contracts, than did any other sector.

Gross Margins:

While over half of firms indicated the *dollar value* of export contracts is higher on average than domestic contracts, about 40% of all firms indicated that *gross margins* were higher. This suggests exporting is relatively more profitable than domestic sales. These findings are encouraging. This profitability will undoubtedly encourage the expansion of exports within the firm. It also partially explains the reason why the export intensity of firms has increased from 34% to 47% over the last three years, and why these firms predict this figure will climb to 59% by 1996.

In an attempt to profile this subject a little deeper, an analysis was performed to determine if those firms that spent 80-100% of marketing man-hours on international activities had higher dollar values & higher gross margins than did firms in the 0-20% category. These findings are presented below in Table 3.

Table 3: Question:	Overall Mean:	0-20% Int'l Man-hours:	80-100% Int'l Man-hours
How does the average ***DOLLAR VALUE*** of your export contracts compare with the average value for your domestic contracts?	4.9	3.8	6.2
To what degree do your export contracts provide ***HIGHER GROSS MARGINS*** than domestic contracts?	4.5	4.0	4.6

- Dollar Value: 1= smaller in $ value; 7= larger in $ value
- Gross Margins: 1= much lower; 7= much higher

These findings reveal that firms who spend nearly all of their time (80-100%) seeking international sales are more successful in seeking out contracts with higher dollar values (means: 6.2 vs. 3.8). Gross margins were also marginally higher for these same firms (4.6 vs. 4.0).

Sectoral Analysis:

¨ Notwithstanding the finding that export contracts held marginally higher *dollar values* (mean: 4.9) than domestic contracts, no one sector reported significantly higher values compared to the other sectors.

¨ In terms of gross margins, telecommunications equipment firms reported significantly higher *gross margins* (5.1) compared to hardware firms (4.1). Software firms did not differ from either of the other two sectors (4.5).

Implications:

The implications are encouraging, yet problematic. Firms that spend most of their time on international activities also are more successful in securing contracts with much higher dollar values. However, higher dollar value contracts exacerbate the usual problem of financing for these firms. Not only do these "star" exporters need the usual level of financing, consistent with their activities, but on a per contract basis they need more. The current restrictions to financing are felt more heavily by the "stars" than by others.

F. Distribution Channel Strategy:

The types of distribution channels a firm uses in a foreign market has a significant impact on the amount of learning a firm experiences about the foreign market. Firms that hand off the responsibility for sales and service very early on in the channel, for example, through the use of agents and distributors, tend to learn very little about the markets where their products are being represented. This creates a high dependency on the agent or distributor as they retain most of the vital market information and industry contacts for that market. This may restrict the firm in the future should they wish to assume more control over their products in the foreign market through the use of their own personnel, for example. Most firms tend to view the U.S. market the same as the Canadian market, so in an attempt to see how B.C. firms were handling distribution in domestic markets, we asked firms to indicate which of the following channels they used for North America, and the importance of using that channel for the firm:

- Direct to Consumer · Retailer
- Direct to Industrial Buyer · Government/Public Sector
- Wholesaler/Distributor · Broker
- Manufacturer's Agent

Chart 23 illustrates the channels of most importance for the I.T. industry as a whole, where 1=not important; 7=very important:

Click Here for Chart 23

No one market channel stands out as the most important, for the I.T. industry as a whole. However, the importance of dealing directly with the end user is evident in three of the top four most important channels: Direct to Industrial Buyer (4.86) followed closely by Direct to Consumer, (4.67) and Direct to Government & Public sector, (4.05). Dealing directly with the end user as a strategy has its advantages, however, it also requires the firm be successful in identifying sales leads.

Given the similarity of business and information systems in Canada and the U.S., the challenge for the firm to identify potential purchasers on its own is relatively easy, compared to non U.S. international markets. The use of distributors in the North American market received a score of (4.84), which still points to the relative importance of distributors for gaining market access and market coverage. Later in this report, the importance of indirect entry into Asian markets via distributors, compared to direct entry strategies, is explored.

These results suggest that even among SME's in this industry, the responsibility for North American sales still requires a great deal of direct contact between customer and the firm. As firms venture into less familiar markets, this strategy will likely tax the resources of SME's. Assistance in identifying and securing leads would clearly ease the transition for firms accustomed to this type of high control channel strategy as they venture into less familiar business cultures. Not to be ignored as well is the fact that distributors play a vital role in the North American channel strategies of SME's. Again finding and qualifying distributors would appear to be an area of great value to exporting SME's.

G. Methods Used To Generate Export Sales:

This section examines sixteen methods firms may use to generate export sales. A firm contemplating exporting faces a bewildering number of approaches that can be used. This section identified those approaches and measured how successful they have been. It is hoped this will guide exporters in their choice of strategies. Further, it will inform government on how the I.T. sectors are operating. It is also hoped the government will use this information to both:

- direct exporters to the most lucrative approaches being used now; and to

- revamp export assistance programs to be more targeted to individual I.T. sectors.

Firms were asked to assess how frequently a variety methods were used, and how successful those methods have been. The following table ranks those methods in terms of their ***success rating***. In addition, a "gap score" has been computed to identify where methods appear to be under-used or over-used relative to their success rating. Negative scores indicate where firms experience less success with a given method than should be the case given the extent the method is used. Positive scores indicate where methods appear to be underused relative to how frequently they're used. These "gap scores" represent the cumulative efforts and successes of the I.T. industry in B.C. This information will be useful to both current and pending exporters, who need to assess how best to generate export sales.

Table 4: Success & Frequency of International Sales Methods:

Sales Method:	**% of Firms** *Using Methoda*	**Frequency** *Scoreb* (1=not at all) (7=to a large extent)	*Success Scorec* (1=not successful) (7=very successful)	**Gap Score** (+/-)
Sales reps. of your firm abroad	40	5.8	5.4	-0.40
Sales reps. of your firm based in Canada	85	5.6	5.2	-0.40
Sales office abroad	25	5.2	5.1	-0.10
Distributors abroad	74	5.6	5.0	**-0.60**
Trade shows abroad	86	5.1	4.2	**-0.90**
Advertising abroad	70	4.6	4.1	-0.50
Alliances with foreign firms	51	5.0	4.1	**-0.90**
Trade Missions	46	4.2	3.9	-0.30
Trade shows in Canada	56	3.9	3.6	-0.30
Leads supplied by industry associations	54	4.5	3.5	**-1.00.**
Licensing arrangement abroad	36	3.9	3.4	-0.50
Joint venture partner abroad	37	3.9	3 4	-0.50
Consultants based in Canada	40	4.2	3.2	**-1.00**
Distributors based in Canada	34	3.7	3.1	**-0.60**
Leads supplied by government agencies	45	3.8	3.0	**-0.80**

Consultants abroad	50	3.8	2.8	**-1.00**

Note:

a= includes only those firms responding to the "Extent" question with a score greater than 1, (i.e.: only those who have used the method, to any degree, are included in the analysis)

b= frequency score is adjusted to reflect only those firms in (a)

c=success score is adjusted to reflect only those firms in (a)

Analysis:

Overall, firms indicated the most successful methods in generating export sales where those requiring a high degree of direct involvement. Three of the top four *success* scores indicate direct methods for sales development:

- Sales representatives abroad (5.4)
- Sales representatives based in Canada (5.2)
- Sales offices abroad (5.1)

However, the use of *distributors*, a very indirect method, rated on par with these methods as a successful approach to exporting. This was the fourth most successful method (5.0).

Trade shows abroad (4.2) and *advertising* (4.1) were seen as only moderately successful. Surprisingly, *strategic alliances* (4.1) and *joint venture partnerships* (3.4) were also seen as only moderately successful. The latter findings on joint activity should not be taken literally. During pre-test interviews with firms, the use of strategic alliances was frequently mentioned as a very important method for export growth. The general feeling among firms was they were not sufficiently comfortable with their understanding and ability to negotiate effective partnerships on their own. In spite of these findings, the importance of strategic partnerships in international marketing, especially to the I.T. industry is clearly evident. Therefore, given the limited use and success of these approaches thus far, further inquiry and action is necessary to understand why.

More distant or arms length approaches such as *consultants in Canada* (3.2), *consultants abroad* (2.8), *distributors in Canada* (3.1) as well as *government leads* (3.0) were reported as being very limited in their effectiveness for generating export sales.

In terms of the "gap scores" the following strategies appear to be overused relative to their effectiveness:

a. leads supplied by industry associations (-1.00)

b. consultants based in Canada (-1.00)

c. consultants abroad (-1.00)

d. trade shows abroad (-0.90)

e. alliances with foreign firms (-0.90)

f. leads supplied by government agencies (-0.80)

g. distributors abroad (-0.60)

h. distributors based in Canada (-0.60)

Strategic Partnering:

Much of the discussion on exporting in today's global marketplace focuses on the need for strategic partnering to achieve export objectives. In the B.C. region, strategic partnering activities (alliances, joint ventures, licensing) were only moderately successful, whereas, the highest success scores were attributed to methods of direct involvement.

While strategic partnering/alliancing methods certainly have the potential to outperform direct methods for SME's, the findings indicate that this success is yet to be realized. As part of the federal governments mandate to develop export competitiveness, the government should take steps to understand what firms are doing in the arena of strategic partnering, and take steps to assist the I.T. industry in leveraging these partnerships into greater export success. Management training in these areas appears to be an area of great interest and need given the results of the survey and the pre-test interviews. The next section of the report deals specifically with the use of strategic partnering in B.C.

H. Methods for Obtaining Foreign Market Information:

Access to current, highly targeted market information on foreign markets is consistently publicized as one of the largest obstacles impeding the growth of SME's in export markets. Pre-test interviews with senior marketing management confirmed this. As evidence of this, one only has to examine the diversification of exports, which as previously noted, is largely fragmented outside of the U.S. market. While demand has been surging in markets like Asia and Latin America, B.C. firms have yet to make those markets an important component in their export mix, largely due to the perceived unavailability or the cost of quality market information. This is not to say that these sources of information do not exist, but rather that firms perceive they do not exist, or are unable to locate such sources at a reasonable cost.

This section of the questionnaire explored the types of research methods firms may use in gathering market information on foreign markets. Firms were asked to indicate both the frequency of use and the effectiveness for each method.

Table 5 ranks the methods by effectiveness. Again, a "gap score" has been calculated to indicate those methods that are over-used relative to their effectiveness. The score is calculated as effectiveness minus frequency.

Table 5: Effectiveness of Research Methods in Obtaining International Marketing Information:

Research Method:	Frequency: (1=never use) (7=always use)	Effectiveness: (1=not effective) (7=very effective)	Gap Score: (+/-)
Information supplied by external sources such as distributors, suppliers or consultants.	4.8	4.9	+.10
Testing product in foreign market	3.1	3.7	+.60
Market research in foreign country	2.6	3.7	**+1.10**
Market research on foreign market from Canada	3.3	3.4	+.10
Secondary research supplied by industry associations	2.4	2.6	+.20
Secondary research supplied by government	1.9	2.2	+.30

Analysis:

The most effective method was reported to be information supplied by distributors, suppliers and/or consultants. In fact, the top three methods all relate to primary research, or information that is "first hand". The final three methods are secondary research, or information that is supplied by others, which by definition, is in general form.

Primary research differs from secondary research in that it is addresses only the specific needs of the firm; it's product specific, country specific, timely and has the ability to address a far wider scope of issues. In the case of secondary research, often times the information is geared to several audiences (entire industries, governments, universities, investors, etc.). By definition, secondary research is limited in value to any one stakeholder. However, this is not to suggest that secondary research is unimportant. Secondary research does play an important role, however, only in the early stages of the research process. These findings suggest that firms have extracted the necessary value from secondary research sources, are now at the stage where they require primary research; product-level market information that will enable firms understand if the general market demand has any relevance to them; to their firm and to their product lines. Secondary information on "general market demand" is not sufficient for firm to act upon. Limited resources necessitates that SME's act strategically in probing new markets...."they can't afford to search for needles in the haystack"!

The importance of product-specific demand forecasts for these important markets can not be understated, as is revealed in the following quote:

"I'm not interested in Mexico, they're not using fibre there yet".

Comment made by participant during a telephone interview

Interestingly, the obvious advantage to firms in performing "market research in foreign country" did not translate into high usage. It ranked the lowest in terms of usage than the other primary research vehicles. This points, in all likelihood, to two reasons: the high cost of performing research by individual firms in the foreign market, and possibly, to the lack of appropriate skills in-house, to conduct this research on their own. One method of research used extensively in the U.S., which overcomes these barriers is the use of multi-client studies. They have failed to gain similar acceptance in Canada.

Sectoral Analysis:

¨ *Effectiveness:* Though not statistically significant, telecommunications equipment firms reported a higher level of *effectiveness* for each method than did either software or hardware firms.

¨ *Usage:* Telecommunications firms reported statistically higher uses of (1) testing product in foreign market, and (2) market research in foreign country, than did both software and hardware firms.

Implications:

Clearly, the single most important source of foreign market information has been through intermediaries such as distributors and suppliers. This may be the case for two reasons: (1) for niche firms, which typify SME's, market studies are generally not available, and , (2) the cost of hiring a consulting firm to perform proprietary research would be prohibitively expensive for many firms.

These findings call again for government agencies responsible for international trade development to maintain complete lists of agents/distributors in key export markets, like those in Asia and the Americas.

I. Hiring Experienced Personnel from the Competition as a Strategy:

The strategy of luring key management personnel away from competitors as a way of gaining the expert knowledge appears to be unimportant. Nearly three quarters of the industry (73%) indicated they were either indifferent to this strategy, or felt it has been unimportant to their export success.

J. Product Security: Preventing "Reverse Engineering":

Firms were asked, "To what degree do you feel your products have the necessary security to prevent them from being "reverse-engineered" by a foreign firm?" Generally, firms felt their products are exposed in international markets in terms of their intellectual property rights (Mean: 3.9), where 1= no security; 7= a great deal of security).

Telecommunications firms indicated the highest degree of product security with a mean of 4.7, and software firms the lowest with a mean of 3.6, however, these differences were not statistically significant. Hardware firms felt only marginally more secure than software firms, in this respect, with a mean of 3.7.

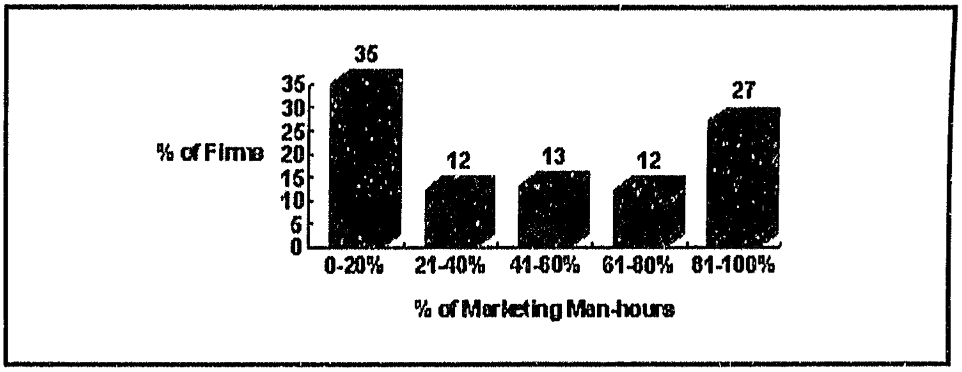
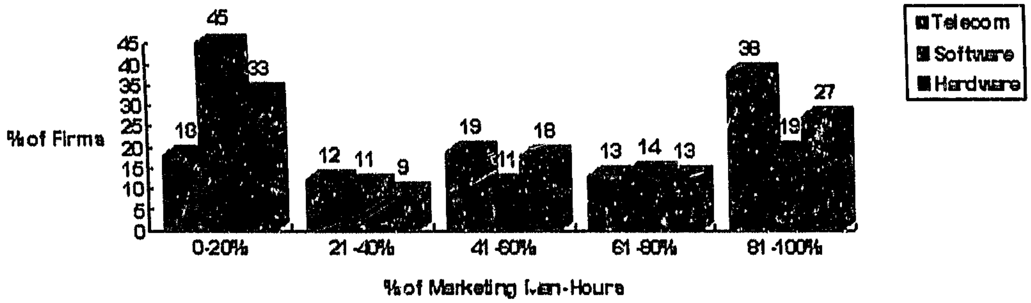

35
27
12
13
12
35
30
25
20
15
10
5
0
% of Firms
0-20%
21-40%
41-60%
61-80%
81-100%
% of Marketing Man-hours

Chart 19



Telecom
Software
Hardware
% of Firms
% of Marketing Man-Hours
0-20%
21-40%
41-60%
61-80%
81-100%
45
33
12
11
9
19
11
18
13
14
13
38
19
27

Chart 20

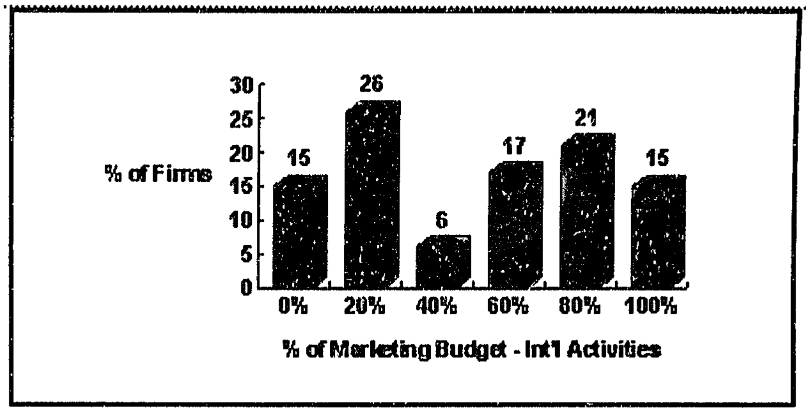

30
25
20
15
10
5
0
% of Firms
15
26
6
17
21
15
0%
20%
40%
60%
80%
100%
% of Marketing Budget - Int'l Activities

Chart 21

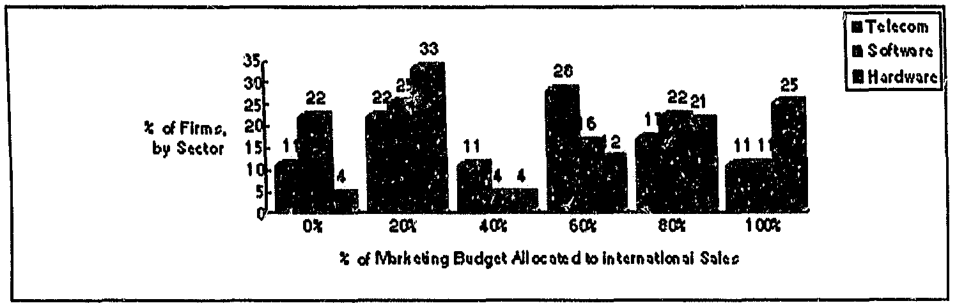

Telecom
Software
Hardware
% of Firms, by Sector
% of Marketing Budget Allocated to International Sales
0%
20%
40%
60%
80%
100%

Chart 22

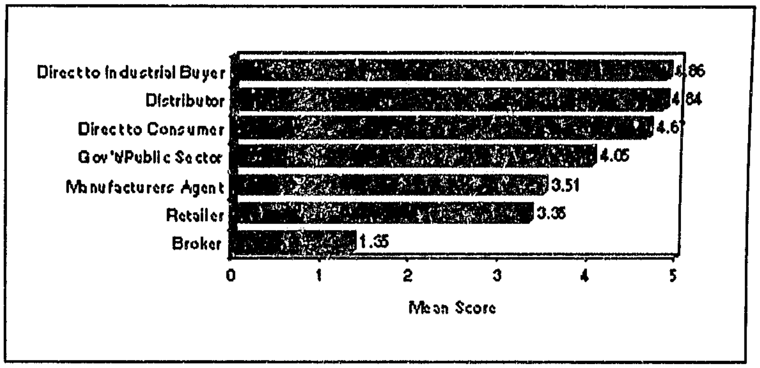

Direct to Industrial Buyer
Distributor
Direct to Consumer
Gov't/Public Sector
Manufacturers Agent
Retailer
Broker
4.86
4.84
4.67
4.05
3.51
3.35
1.35
0
1
2
3
4
5
Mean Score

Chart 23

Author - Dr. June N.P Francis, Simon Fraser University & Scott Caldwell, On Site Publications Publication Date - 1996-07-26

Part XI - Strategic Partnering & Performance in Unfamiliar Markets

The long term vitality of the Canadian I.T. industry will depend, without question, on the ability of Canadian firms to "roll up their sleeves" and getting on with the complicated task of building international competencies in exporting. Given the fact the Canadian I.T. industry is comprised essentially of SME's, these competencies are better achieved, it is argued, through the development of strategic partnerships rather than the development of "in-house" competencies. The use of partnerships is a far more efficient approach for SME's in building "boutique" competencies over a shorter period of time. Such competencies may take the form of foreign market knowledge via a distributor, licensing product re-development to suit local requirements via an in-country manufacturer, joint investment partnerships to provide both development capital and long term commitment, to name a few.

In a global business environment where strategic partnerships are becoming more and more commonplace, and where other nations are increasing their competitiveness vis-à-vis Canada, Canada doesn't have time to waste. The need for strategic partnerships as a method of building international competitiveness has never been greater.

This section of the report will examine the B.C. regions use of strategic partnerships. It will provide both a snapshot view of how this region has used partnerships as a strategy to date, and will postulate whether some forms of partnering appear to be under utilized. On this latter point, only further investigation can truly reveal why some partnering methods appear to be underused. It could be that some partnerships are: difficult to establish, difficult to monitor and enforce, or it may simply be the case that certain partnering methods are unimportant to I.T. firms. These distinctions, and why they exist, need to be understood both by government and by individual firms as they seek the best possible avenues in building their competencies.

Firms were asked to indicate:

- which of the following partnering methods they used;
- the importance of this type of partnership method;
- which country(ies) the partnerships were with; and
- whether the partnerships were formal or informal.

Click Here for Chart 24

The findings in the above chart indicate the preference forpartnerships involving relatively low levels of "joint activity", as both marketing and distribution functions tend to require less coordination and direct involvement than other forms of joint activity. Relatively higher level partnerships such as joint market research and joint financing were used considerable less, with the exception of joint R&D, where one quarter (24%) of the industry indicated some level of this activity. This latter finding is encouraging.

Software firms accounted for over 50% of this joint R&D effort. As software firms also account for 51% of the industry base in B.C., this finding might normally be expected. However, in light of the fact that software firms are significantly smaller, as a sector, in terms of annual sales and export sales, this finding gains significance. It signifies that even those firms considered "micro" sized, are active in the area of strategic partnerships. This helps to debunk some myths that strategic partnerships are essentially in the domain of large companies, owing in part to the perceived complexity of strategic partnering.

Sector Analysis:

On a industry wide perspective, telecommunications equipment firms generally indicated much less involvement in all of the joint activities than did the other sectors. Again, comparatively speaking, software firms appeared to be the largest users of joint activity, both relatively and absolutely. In the case of hardware & peripheral firms, the frequency of use was generally in line with the proportion of firms in that sector.

Importance of Each Strategic Partnering Activity:

Chart 25 illustrates the perceived importance of each partnering method, where 1=not important; 7=very important:

Click Here for Chart 25

The importance of each partnering method was consistent with the usage patterns, that is, those methods that were used most frequently also were reported as more important. However, overall scores for these strategic partnering activities were quite low. There are three possible reasons why the importance of each partnering method closely followed the frequency of its use:

- firms use only those methods they deem important, therefore, they see no need to use other methods
- firms may perceive that strategic partnerships are not the preferred way of gaining the competency;
- this question was answered incorrectly.

Alternatives #2 & 3 are possible in this case given that some of these findings on "importance" contradict our knowledge of the industry. For example, the low level of importance attributed to joint market research and joint financing suggests these are unimportant requirements. However, this contradicts findings reached during the interview process where just the opposite was indicated. So, this may either point to an error in how the question was written, and therefore answered, or it may point to the fact that firms think that the need for international market research and financing is not best achieved using a strategic partnership with a foreign firm. Either way, these findings reveal only part of the situation. These distinctions can only be revealed through further research.

Active Partnering Countries:

The pattern of partnering activities with foreign countries closely follows the lines of trade. The U.S. accounts for just over one-half of all partnering activities, followed by Australia with, on average, some 15-20%. The importance of Australia may be due to it's linkage and familiarity with Asian markets, particularly Japan. No other countries appeared frequently enough to indicate any trends.

Formal/Informal Partnerships:

The use of formal partnerships are denoted by the existence of written agreements supplemented by some form of continuous monitoring and measurement criteria to evaluate each partner's actual contribution to the partnership. Such agreements tend to be used in functions of the company that are critical and measurable, such as finance and R&D, whereas, informal agreements can be represented by handshakes or verbal commitments. Informal agreements tend to follow functions like marketing where flexibility is required and inherent in the function. Examples of informal partnerships may take the form of a systems integrator in the U.S. that has a "preferred" arrangement with a B.C. firm, but not a contractual agreement. While the U.S. firm would not be required to source the B.C. firm, in this example, it usually would with all other things being equal.

Chart 26 illustrates the percentage of strategic partnerships that tend to be formal and informal:

Click Here for Chart 26

Summary Analysis:

The findings partially corroborate the results that were expected. While joint R&D activities strongly favored formal agreements (67% vs. 30%) , joint financing appeared evenly balanced between formal and informal (50% vs. 50%). The latter finding contradicts what one might expect about finance agreements. Further inquiry is necessary to understand these findings.

The informal nature of joint market research is consistent with earlier findings that firms depend most on distributors and other intermediaries for market information. In this case, the "agreement" may be as informal as occasional phone calls between the parties to discuss new events in the markets.

Joint marketing and joint distribution marginally favored formal agreements. It can only be speculated as to what these agreements involve. Further inquiry is necessary to understand these activities more fully.

This section, though brief, should provide firms with a sense of the strategic partnering activities currently being used in the B.C. industry.

X. Performance in Unfamiliar Markets: The Asian Example

Introduction:

Understanding how firms handle culturally unfamiliar and geographically distant markets, such as Asia, is important. Previous research points to the fact that firms who export primarily to culturally familiar and geographically close markets, in our case the U.S. market, do not develop the necessary skills to enter unfamiliar and distant markets. Therefore, this section examines how the B.C. industry has handled five countries in the important Asian market. In addition, this will serve as an example of how this region will likely approach other unfamiliar markets.

As previously mentioned, unfamiliar markets such as those in Asia and the Americas are the those markets where the greatest growth rates are occurring in I.T, for example in China where the use of I.T. is growing at an annual rate of 20%, an in the Americas where growth rates of 12-15% are being realized. Firms will need to succeed now, if they wish to be successful in the long term vis-à-vis their competitors. To succeed in these markets in the long term requires that we have a "foothold" in the market now. Firms with "first-mover" advantage will clearly be in a better position to capitalize on long-term developments in those markets.

Why Asia? Of the most important unfamiliar markets in the world, B.C. firms were expected to have the most experience with Asian markets, and therefore, the most to tell. This section examines key aspects of B.C.'s performance in Asia:

- how many B.C. firms are in those markets?
- how did they get there?
- what methods are they using to sell their products?

A. Activity in Asia:

The survey asked firms to indicate the Asian markets they currently sell to (Japan, Korea, China, Taiwan and Malaysia), and how the first contact was made with buyers in those markets (by the firm, by the buyer, or initiated by a third party). Chart 27 highlights the percentage of B.C. firms that are currently selling to each of the five Asian markets shown below.

Click Here for Chart 27

The degree of market penetration into each of these Asian countries was lower than expected, yet very consistent across each of the five countries. On average, some 17-23% of the B.C. industry reported exports to these Asian markets. These numbers include firms that sell to multiple markets.

Taken another way, B.C. activity in the same Asian markets can be reported as follows:

Click Here for Chart 28

These penetrations levels appear to be quite low. Given the strong focus that B.C. has on Asia, one might have expected more activity in these regions. Interestingly, of those active firms in only one of Asian market, Japan and China were clearly the markets of choice.

Implications:

It can only be speculated as to why activity in these markets is so low:

i. It may be that firms are still strongly focused on the U.S. market. However, previous findings indicate that firms expect to generate most of their export sales in the next three years through entry into non U.S. markets.

ii. It may be that firms have such limited financial resources at this time, that probing Asian markets is prohibitively expensive. Given the B.C. region is comprised of relatively small firms, in terms of annual sales, this is likely a prime reason for many firms. In this case, strategic intervention on the part of government and industry groups could play a strong role in leveraging limited resources into export activity.

iii. It may also be the case that firms have limited managerial experience in international markets, and therefore, lack the "know-how" to enter these distant and unfamiliar markets. Previous findings support this as a strong possibility. To overcome this obstacle, much more needs to be done in the arena of highly targeted, sector specific management & marketing training on international markets.

B. Approaching Asia: Proactive or Reactive?

Earlier sections of the report highlighted the findings that B.C. firms consider themselves motivated by "proactive" factors in seeking export sales. They felt drawn to international markets by "*demand for their product in foreign markets*" , by the "*technological advantage of our products*" and by "*management enthusiasm for exporting*". These factors all suggest that firm's have a high proactive orientation, and that regardless of the entry method chosen, that B.C. firms would likely be "knocking on Asia's door".

The opposite was found. In terms of the proactive or reactive nature of gaining the first export sale to each of those countries, the results indicate that B.C. firms are, in fact, quite reactive. Chart 29 below illustrates, on a country by country basis, the percentage of firms who enter Asia proactively, as a result of the B.C. firm making first contact with the Asian firm.

Click Here for Chart 29

As the chart illustrates, at best, one third of I.T. firms in B.C. enter unfamiliar markets such as Malaysia proactively, and at worst, a mere one fifteenth.

There appears to be a "gap" between how firms perceive themselves and what their actions reveal. It appears that firms' limited resources are hampering them from turning motivation into detailed marketing activity in the foreign market. In reality, marketing budgets are never seem large enough, therefore firms need to be judicious in how they allocate their international marketing dollars. To facilitate this activity, firms need access to qualified market knowledge industry contacts and strategic intervention on the part of government. Interviews with firms confirmed this. As many firms revealed, access to specific market knowledge & strategic assistance is the "ally" firms need before releasing "precious" marketing resources to probe new markets.

Testing for "proactivity" is an important measure of an industry's "export readiness". To be genuinely proactive, firms must have not only general information about the opportunities in a country on which to base strategy, but product specific information regarding demand for product. After this comes the requirement for competitive analysis of the industry, knowledge of potential purchasers/distributors and other intermediaries. The fact that these "proactivity" scores are low suggest that some, if not all, of these "information" resources are not being accessed.

C. Entry Method: Direct or Distributorship?

The survey asked firms to indicate the method used to handle the Asian market:

- in-house staff;
- agent/distributor based in Asia;
- agent/distributor based elsewhere.

International marketing strategy for SME's is leaning more and more towards the use of agents/distributors to handle foreign market activities. It was expected firms would use approaches requiring little control, drawing heavily on intermediaries in the foreign market given the lack of 'know-how" and resources. In culturally unfamiliar and geographically distant markets like Asia where markets are rapidly evolving, this strategy would appear to be the most likely.

This was the case. Of the firms that are currently selling to Asian markets, on average two-thirds use agents, of which most, but not all, use agents based in Asia. The final third use in-house staff to handle the market.

Inclusive of agents based in Asia and elsewhere, 75% have had an agent for less than three years, and are only moderately satisfied with the agent's performance (mean: 3.75 out of 7.0). In terms of satisfaction with their agents, firms using agents based in Asia (3.85) were marginally more satisfied than firms using agents based elsewhere (3.5).

The use of agents and distributors will likely dominate as the market entry method of choice for unfamiliar markets, therefore, the government should make readily available the names of qualified, pre-screened distributors, by sector, in each geographic region.

Distribution Agreements: Granting Exclusivity

How much room have firms left themselves to maneuver in the future? A potentially alarming trend emerged, perhaps as a result of feeling unprepared for Asian markets. The incidence of B.C. firms granting exclusivity in their distribution agreements was high.

The following chart illustrates the percentage of firms, currently doing business in these Asian markets, that have granted exclusive distribution agreements. These numbers are alarmingly high, especially in light of the fact that these markets are some of the fastest growing markets in the world.

Click Here for Chart 30

As a result of being drawn into Asian markets, in large measure by Asian firms making first contact with B.C. firms, combined with th . that many firms felt unprepared for the market, many firms have chosen to accept proposals for exclusivity in their distribution agreements.

The fact that some 67-94% of firms enter Asian markets as a result of being contacted by the Asian counterpart, serves as strong testimony that B.C. firms are unprepared to enter these markets proactively, especially given the apparent focus that B.C. firms have of Asian markets.

Implications:

Distribution agreements are widely accepted as the best form of market entry for SME's in markets where both the firm knowledge of the market is scarce, and where the market is quickly evolving. However, in quickly evolving markets, a firm that grants an exclusive agreement risks not only stunting long term growth, but also risks losing timely and strategic short run positioning in the foreign market should the distributor prove to be ineffective, or worse yet, switch "loyalties".

While the "distributor approach" expedites entry into foreign markets, it must, and can, be used judiciously. Distributors provide quick market access, however, the amount of learning transferred back to the firm (markets, specific customers) is very limited. This creates a long term reliance on the distributor, and restricts the future ability of the firm to change their international strategies. This will especially affect fast growing firms that will eventually want to assume more control over their business in the foreign market, particularly where servicing their product is an important reality.

Worse yet, foreign distributors with an exclusive could, in some cases, use it as a method to purposefully keep specific firms out of the market, to the benefit of other competitors. These types of marketing warfare tactics are not uncommon, and the risks of giving exclusivity should be carefully weighed. Further, while any distribution agreement should have an exit clause, in many cases, by the time these clauses are invoked, the window of opportunity to position new technology ahead of the competition may be closed.

While the B.C. industry still appears to have limited experience with Asian firms, Asia has been a focus for B.C. firms for some time. These firms are likely to be more familiar with Asia than with many of the other emerging markets in Eastern Europe and the Americas If this is the success rate of firms in penetrating unfamiliar foreign markets, on their own initiative and under current export programs, then firms will need greater preparation and assistance for entering, say, Mexico or Brazil.

These situations further pinpoint the need to re-engineer federal government export programs to deliver the type of information and strategic assistance to Canada's I.T. industry, as is needed.

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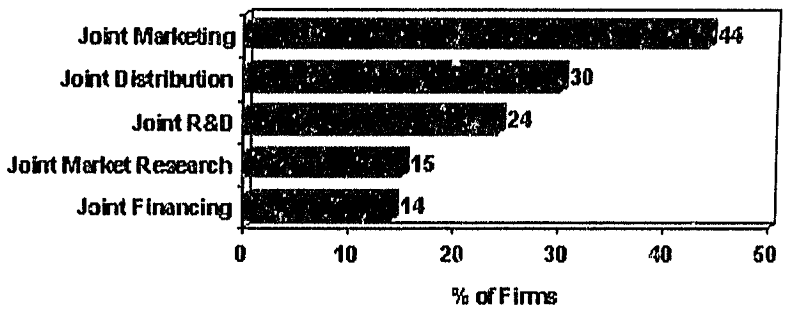
Joint Marketing
Joint Distribution
Joint R&D
Joint Market Research
Joint Financing
44
30
24
15
14
0
10
20
30
40
50
% of Firms

chart 24

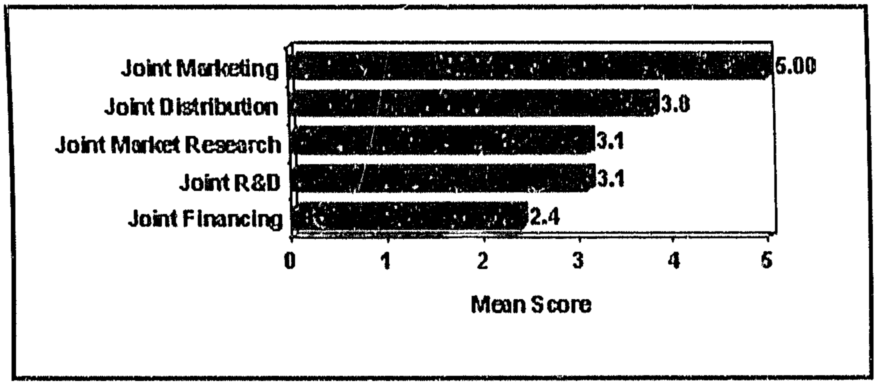
Joint Marketing
5.00
Joint Distribution
3.8
Joint Market Research
3.1
Joint R&D
3.1
Joint Financing
2.4
0
1
2
3
4
5
Mean Score

chart 25

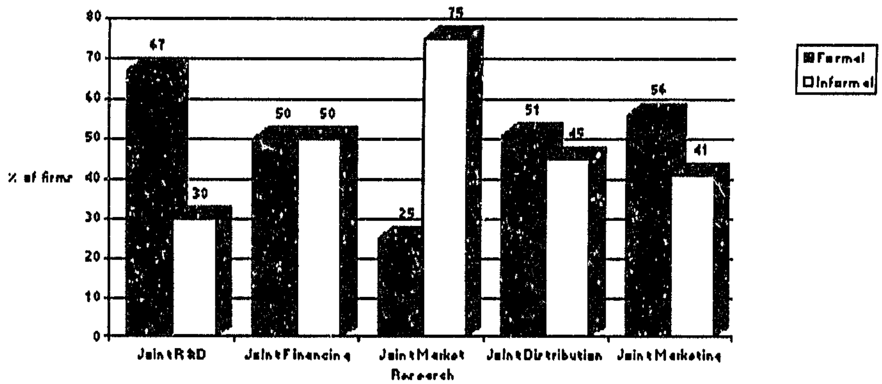
80
70
60
50
40
30
20
10
0
% of firms
67
30
50
50
25
75
51
45
56
41
Joint R&D
Joint Financing
Joint Market Research
Joint Distribution
Joint Marketing
Formal
Informal

chart 26

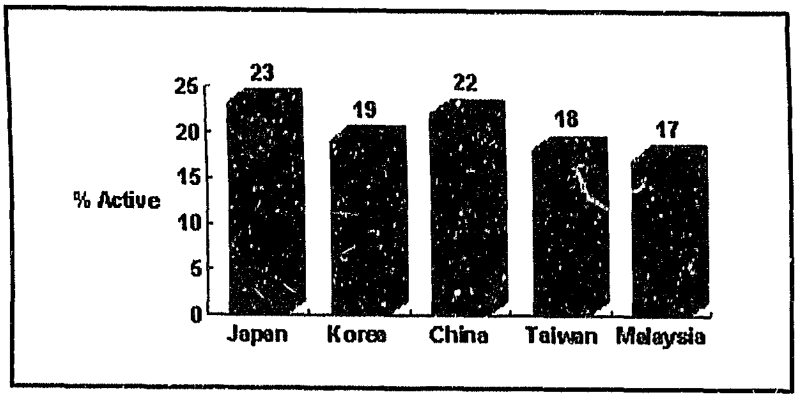
23
19
22
18
17
25
20
15
10
5
0
% Active
Japan
Korea
China
Taiwan
Malaysia

chart 27

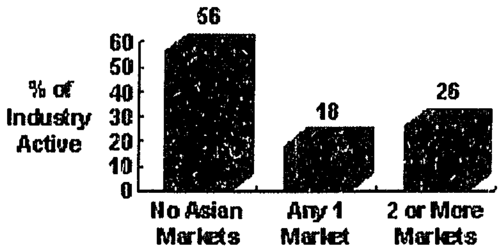
56
18
26
60
50
40
30
20
10
0
% of
Industry
Active
No Asian
Markets
Any 1
Market
2 or More
Markets

Chart 28

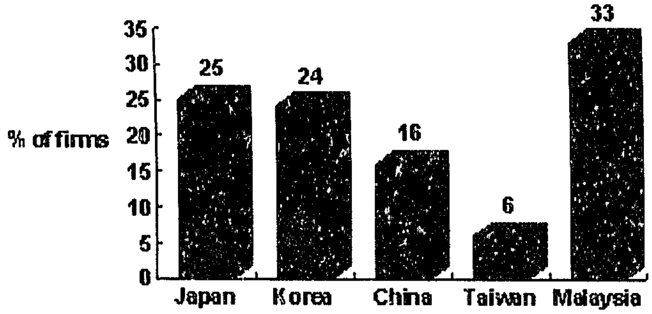
35
30
25
20
15
10
5
0
% of firms
25
24
16
6
33
Japan
Korea
China
Taiwan
Malaysia

chart 29

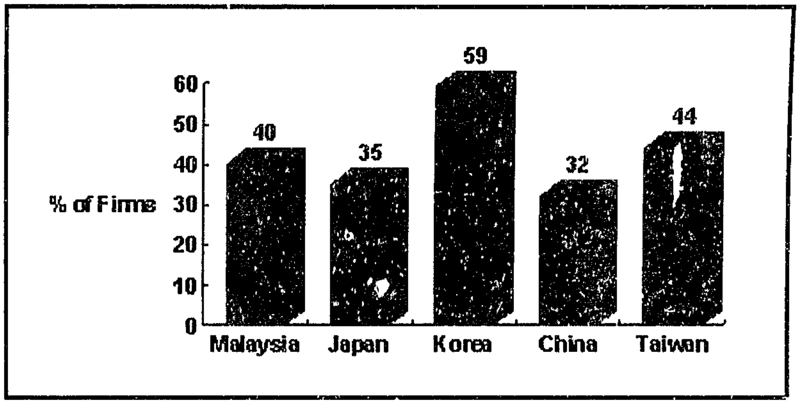
% of Firms
60
50
40
30
20
10
0
40
35
59
32
44
Malaysia
Japan
Korea
China
Taiwan

Chart 30