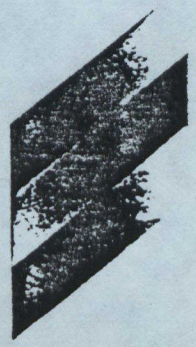
Global Market Opportunities Review

Software Products



Canada

PREFACE

Global Market Opportunity Reviews are working documents which evolve continuously as a result of an ongoing process of dialogue and consultation among industry and government. Papers will reflect changing market conditions and prospects as identified by our trade missions abroad and from other sources, current supply capabilities and interests of Canadian industry, and other developments which affect trade performance.

This market review is based on an analysis of market intelligence from Trade Offices abroad, industry views on world markets and reflects the consensus by federal government departments with interest in the sector.

The global market for software products is rapidly expanding. Existing markets such as the USA and Western Europe continue to grow as the use of software products expands in all business sectors. Japan, South East Asia and Latin America are rapidly emerging markets and new markets are opening up in the Asean. Canada has a high quality growing sector in all software product areas (Systems, Application Specific, Business, Retail, Educational, Healthcare and others).

The series of reviews published by EAITC is intended to influence the structure and content of international market development programs in which industry and government cooperate.

GLOBAL MARKET OPPORTUNITIES REVIEW

Software Products Sector

DRAFT

Contents:

GLOBAL MARKET OPPORTUNITIES REVIEW

SOFTWARE PRODUCTS SECTOR

EXECUTIVE SUMMARY

a) Capability: An excellent and steady supply of creative software engineers over the past three decades has produced a software products sector of over 4,000 developers. Although a very small number have revenues over $10 million with a slightly larger percentage over $2 million, Canada has established a reputation for high quality, reliable products. While a few companies have achieved worldwide recognition as providers of application development tools (eg Cognos, Alias, Corel), most of the industry's strengths are in niche market applications (Education, Healthcare, POS, Engineering, Business etc.). The sector is currently healthy and maintains a steady growth rate despite a period of recession. Significant sector growth areas include 4GL tools, Graphics applications, CAD/CAM, Unix and OSI.

b) Global Market Prospects: Software product companies market outside Canada earlier in their marketing cycle than most other sectors. Apart from a few specialized product companies, the prime markets for this sector in order of access are the USA, Western Europe and S.E. Asia with Mexico and South America fast becoming more active. The USA is the easiest market to access and has over 60% of sector marketing activities. The Western Europe software market has grown significantly over the past five years and Japan and S.E. Asia, while more challenging, are very important markets. The imminence of NAFTA and introduction of copyright legislation have accelerated opportunities in Mexico, Brazil, Venezuela, Chile and Argentina.

c) Strategy Elements: There are five key elements in the strategy: 1)*Raise Profile*: The world community does not have a perception of Canada as a leading software developer. 2)*Market Intelligence*: To penetrate and maintain a presence in foreign markets exporting companies require access to timely and meaningful intelligence on local markets. 3)*Sector Intelligence*: To priorize intelligence gathering and events the EAITC foreign and domestically based trade officers require up to date information on the sector strengths and emerging product areas. 4)*Strategic Partnering*: Most of the Canadian sector consists of companies of less than 12 employees. Market access and presence can best be maintained through some form of strategic relationship. 5)*Trade Promotion*: Trade promotional events should be focused on known and emerging markets. Action in the lesser known markets should be focused on intelligence gathering, market studies and forecasts.

GLOBAL MARKET OPPORTUNITIES REVIEW

Draft

PRIORITY SECTOR: SOFTWARE PRODUCTS

PURPOSE: To focus and enhance trade development in support of the computer software products sector.

SECTOR DESCRIPTION:

- User Application Development Tools
- Communications Interface Software
- Project Management/Control Products
- Educational Aids/Professional Training
- Health Care Applications
- Computer Aided Design/Manufacturing (CAD/CAM)
- Office Systems
- DeskTop Publishing
- AI/Expert Systems
- Point-of-Sale (POS)
- Graphics Design
- Other Niche Products

"Despite the worldwide recession - in 1990 World IT (Information Technology) sales grew 8.9% to $US278.5 Billion ($US184 billion in North America). The top 100 North American IT suppliers grew their PC, mid-range, workstation, software and services at a healthy clip but the sellers of mainframes and datacom equipment hit the skids. Some PC software companies, which alone accounted for over $US3 billion in 1990 sales, are growing at a rate of 25 - 30% per year."

(Datamation magazine, June 1991)

As in most of the industrialized countries, software is the fastest growing sector within the Canadian Information Technology Industry. The rapid growth in the use of software products covers all communities - business, government, education, health, social services, manufacturing, research, construction, design and the home. Its use is growing in all aspects of daily life and some estimates put the global market at US$1 trillion by the year 2000.

Since the early eighties, the industry has been moving away from customized software and towards the development of standardized "off-the-shelf" software packages. Software is fast becoming the enabling technology for most other industries.

Initial entry to the software industry is not expensive since anyone with a personal computer and programming skills can produce software (there are over 18,000 software companies in North America, over 4,000 in Canada). However, it is extremely difficult to establish a company with permanence and stability, as shown by a failure rate over 30% annually.

A breakdown of Canadian Software Product companies is not readily available. However the figures below represent the 11,000 Software Products and Computer Services companies compiled by Statistics Canada in 1988.

Province	%Companies
Ontario	53
Quebec	24
Prairies	12
British Columbia	9
Atlantic Provinces	2

The same Statscan report indicates the following grouping by company revenues:

Revenues ($1,000s)	% Companies
0 -> 250	28
250 -> 500	17
500 -> 2000	36
2000 -> 5000	11
5000 -> 10000	4
10000+	4

The Statscan survey covered marketed software products and custom designed software and excluded software embedded in other products such as communications equipment. Although the figures are dated, they do serve to generally portray the industry.

Apart from a few notable exceptions software product firms, internationally, are generally small to medium sized enterprises employing fewer than 10 people. Low barriers to entering the industry allow for the emergence of many new start-ups; however, failure rates are extremely high. Of over 4,000 software products producers in Canada only about 150 have grown above a $2 million revenue level. Of these, fewer than 30 are above the $10 million level. Industry observers feel that a $2 million per annum level of sales is a sustainable success threshold for Canadian Software producers.

It is important to note here that although 150 seems a small number, many of these companies were below that $2 million threshold a very short time ago. (For example, Corel has risen to a $20M+ revenue company within a few years.) PC software packages offer an astonishing payback of 10 to 20 times the development cost within one year.

The development of software product companies derives in a large part from an interested group (or person) developing a solution for a specific problem. This solution is then generalized and packaged to be a general solution for similar problems. This path can cover all types of software products from computer application development, utility tools and computer/communication management tools, to more focused products addressing finance, business management, education, health care, geographic information etc. The original product is often developed by computer professionals called in to solve the problem for the initial user. Sometimes they develop a product (tool) to assist themselves in the development of computer applications for clients. This "tool" is then realized to be a marketable product. (Currently Canada's most internationally known company, Cognos, was initially a computer systems integrator and their first products were developed to assist their own computer specialists.) Niche products are often developed by computer aware "users." For example some of Canada's best educational and health care software products are designed by specialists in those fields.

Mergers are not as common in the software sector as in others. The companies are usually controlled by the original developers who often have an unhealthy possessiveness towards their "child." Acquisitions are higher and often happen following an extended period attempting to find necessary risk capital. Financing for software companies from both established institutions and venture capitalists is extremely difficult. The software sector in the USA is the best served in this area and the Canadian sector among the worst.

The most recent estimate (1989) of global sales for software is about US$78 billion. Sales can be approximately divided as 56% in North America ($43 billion), 32% in Western Europe, 5% in Japan, and 7% in the rest of the world.

Recent growth of activity by Japan into the software acquisition market as well as more aggressiveness by Taiwan and Singapore in seeking strategic partners in the North American software industry should change these statistics significantly. Currently, the USA is the only major software producer that has a significant positive software products trade balance.

MARKET PROSPECTS:

The following markets, grouped by region, represent a synopsis of global market potential for computer software products. Each individual market within the region has not been identified, as this assessment is principally structured to reflect the trade plans submitted by posts abroad. Each noted market is rated according to current marketing intelligence on the general potential of this market compared to other markets within the region and against other regions. These brief summaries are intended to provide a framework describing the general environment, and allow a comparison of markets based upon their relative merits, i.e., attractiveness as direct export opportunities. Known success of Canadian companies within a specific market, market access difficulties, funding availability and infrastructure development are also factored into the general market assessment. The markets are categorized as follows:

Tier A: Cash Market mostly; clearly defined market access procedures with few restrictions; interest and success of Canadian companies at a high level; an established infrastructure; a proven, relatively stable, market growth potential.

Tier B: Emerging markets with proven interest in Canadian products; some degree of Canadian success; evolving infrastructure with capability to deal with large development projects; generally moderate-to-high level of interest from Canadian companies. Intellectual Property legislation is in place and to some degree enforced.

Tier C: A combination of all or some of the following factors: long decision cycles; frequent complex business practices; intellectual property violations; lacking necessary infrastructure to adequately support development projects; not a high priority for most Canadian companies.

As with most other countries, the areas with the highest current potential and with the highest international activity by Canadian software producers are (in order of intensity): USA, Western Europe, Japan and SE Asia (including Taiwan).

Emerging markets with growing potential are: Mexico, Brazil, Argentina, Venezuela, and Chile in South America, Hungary, Czechoslovakia and Poland in Eastern Europe; and Australia.

Potential markets (ie. Potentially good future markets inhibited by current circumstances) are: South Africa, the ASEAN Countries, the Peoples Republic of China, Russia, and possibly other Eastern European states.

UNITED STATES OF AMERICA:

REGIONAL ASSESSMENT:

Over 60% of Canadian software sales are to the USA and it is still the first target market of preference for most Canadian companies. Canada's unique position of proximity to the U.S. distribution channels and high-tech hardware sector, in addition to a common language, common time zones, closely integrated infrastructures and the Free Trade Agreement, allow for a comfortable environment for Canadian exporters. The department's program of exhibiting at major Trade Fairs complemented by NEBS and NEXUS missions and the local support by the Consulates continues to be of valuable assistance to Canadian exporters.

The rapid movement to OSI as the international standard for computer/communications provides an additional opportunity for Canadian companies in the US market. Canada has a growing strength in Unix software applications and OSI interface software expertise. Opportunities should be identified to exploit this in the USA market at this early stage.

TIER A: As software products permeate all aspects of business and personal life, most of the USA is a TIER A market for software products. Major cities are the obvious targets for most software marketers with recognized regional focal points receiving the most attention (New York, Boston, Atlanta, Buffalo, Chicago, Los Angeles etc.).

While much support has traditionally been given to the Eastern and Western sides of the continent, the Post Plans also reflect good market prospects for software in the Chicago, Cleveland, Minneapolis and Dallas regions. Some focused events in these areas could have considerable returns.

Key Trade Shows in the USA are:

Comdex Spring, Atlanta, May
PCExpo, New York, June
Net World, Dallas, October
COMDEX Fall, Las Vegas, November
Unix Expo, New York, September
FOSE, Washington, April
FCC West, Anaheim, May
Fed Micro, Washington, August
COMNET, Washington, January

THE AMERICAS:

REGIONAL ASSESSMENT:

Canadian software developers, in particular those developing products in the Education/Training fields are well advanced in converting products to the Spanish language. In the past, Spanish speaking countries have not been major targets for the Canadian sector. However, as business practices and copyright legislation improve in these countries, Canadian companies are viewing this as a high demand market. The Intellectual Property environment however, is still a concern.

Canadian companies have become much more active in Mexico during 1990/1991. The more attractive emerging markets are Mexico and Brazil. In addition, the 1991 post plans rated Computer technology a priority for Venezuela, Columbia and Costa Rica. More in depth market analyses would be useful in structuring a trade development program.

TIER A:

Mexico: Canadian companies have been more proactive in this area over the last two years. Products of high interest are Educational Tools and Aids (school and preschool) and Computer-Based Training and Courseware products. Many leading Canadian companies in these fields have already converted their products to Spanish and are geared for the Spanish speaking countries. There are very little informatics products of any kind made in Mexico. As the use of IT grows in the domestic industries as well as the community generally, there will be a multitude of opportunities for diverse software products and services. With the Mexican government encouraging the use of more technology, and the potential of a "Free Trade Area," Mexico has become a prime market for Canadian software exporters.

Brazil: The Brazilian government restrictions limiting products to Brazilian manufacturers have inhibited the growth of the Brazilian manufacturing/industrial sector. The government plans to remove all restrictions in 1992 and has already made much headway in the removal of many restrictions. 1992 should put Brazil back in the international market as a large market seeking good products and strategic relationships in computer software products.

The COMDEX South America Trade Show, Sao Palo each September is becoming a major event for access to the Brazilian market.

TIER B:

Chile: The software study commissioned by the Canadian Embassy in October, 1991 shows a significant growth in software sales (25% per year) since the introduction of intellectual property legislation in 1989. High growth areas are in oil, mining, banking, production control, communications, software development tools, and GIS. The report also shows that the escalating use of work stations versus mainframes is producing a high demand for Unix applications and development tools in all industry sectors.

Argentina: Since 1989, the Argentine software market has been experiencing an unprecedented growth rate. Annual rates of 100% or more have become usual in several market areas. Most growth is in PC software. Sales of PCs increased in 1991 by 70% to over 340,000 units. LAN and Windows based software are current hot products. A downsizing trend is creating a high demand for LAN and Peer-to-peer solutions. Restructuring of the government has created needs for office automation and training products. High growth niche markets are in industrial plant automation, robotics, warehouse automation and SCADA. Fast growing industrial sectors are the beverages industry, insurance, oil, petrochemical and the car industry. Argentina is also reported to be a good location for localization of products to Spanish and Portuguese.

The Caribbean: Interviews with IBM Jamaica, NCR Jamaica, ICL Jamaica and a major Jamaican distributor by a Trade officer in 1989 showed a good if limited market for quality software products. The Jamaican government has significant needs in the modernization (automating) of basic services. However, government funds are very limited and without external financial assistance the process will be very slow. Information on the rest of the Caribbean countries is too limited to categorize individually.

Venezuela: Recent trade events in Venezuela show a potential market for GIS, Educational Software, Courseware, Plant Automation, POS, Banking, Utility Company applications and UNIX. Spanish versions and literature are imperative and a local representative necessary. The Inforven Trade Show in Caracas each October is attracting many international exhibitors.

Columbia, Costa Rica: Although these posts identified Computer products as a priority in 1991 there is no market intelligence available to identify specific needs or niches.

WESTERN EUROPE:

REGIONAL ASSESSMENT:

Western Europe is a top priority market for software products. Europe has the fastest growing sales in software. This is not surprising as the migration to end-user computing from the mainframe host computing concept was much slower in Europe than North America. In 1990 European PC software sales increased 59% to over CDN$1.7 billion.

A study on the software market in Denmark quotes the following breakdown for European PC Software sales in 1990:(It should be noted that these represent about 50% of the total software sales)

PC Software Sales - Europe 1990

	Germ/ Aust	UK/ Ire.	Frnce	Scand	Benlx	Italy	Spain -Port.
US$-Vol/ sales	430m	389m	334m	213m	150m	73m	68m
%Growth:	67	39	66	55	49	70	198

The same report shows that Microsoft Windows application sales in Europe grew 327% in 1990 making Windows the second largest software format in Europe behind MSDOS. Unix applications are also in high demand in Europe as the user communities are very multi-user oriented and conscious of the OSI standards.

Canadian software developers should be aware of the urgency to establish a presence in Europe and need to be much more pro-active in this marketplace. Promotional programs for Canadian software exporters should be a priority in Europe over the next two years.

WESTERN EUROPE (cont'd):

TIER A:

Germany: Germany is the dominant attraction in Europe to Canadian software producers at this time. Germany has the highest sales in Europe, a high growth rate and a high demand due to the reunification of East and West. The CeBIT show in Hannover each March is an ideal event to introduce new products to Germany and Europe. The Systems Trade Show every other October in Munich is also an excellent event for software companies.

Austria: A good stable market with particular interest in CIM and industrial graphical applications. Austria also has current advantages of close ties with Hungary and Czechoslovakia and can provide Canadian companies with good access to and market intelligence on the Eastern European market.

United Kingdom: Apart from being the second largest market in Europe, the common language and culture links make this the first market many Canadian companies look to for strategic relationships for entry to Europe. Despite the current recession the UK is a good local market for quality software products as well as excellent potential for entry to the EC.

Ireland: Although not a significant domestic market, Ireland has excellent potential for Canadian companies seeking partnerships for the EC. Ireland has a very high skills base, lower costs than most of the EC countries, a common language and similar business culture. The Irish government also has attractive tax incentives and grants for companies establishing a presence there. Microsoft, Oracle, IBM, Lotus, Borland, Ingres and Siemens/Nixdorf are among the world leaders that have established development centres in Ireland.

France: Although France has the third largest sales in Europe, apart from the annual exposure at CeBIT (which attracts many French visitors) there has been difficulty in focusing on an event within France to promote Canadian software products. Past history of exhibiting at the French expositions has not proved to be of great benefit in market access. The recent study of the Software Market in France may prove to be of assistance in developing a program to help Canadian companies in accessing this very large market. The PC Forum in Paris each February is the most popular PC trade event in France.

Scandinavia/Finland: As in the UK/Ireland, the widespread use of English as the business language should be a benefit to Canadian companies. Judging from the high attendance of Scandinavians at CeBIT each year and the interest shown in the Canadian exhibits, this should be a comfortable market for Canadians. It is anticipated that the EFTA will merge into the EC market within a few years. Canadian companies well installed in this marketplace will benefit from this merger. Denmark's proximity and existing business networks to Germany can offer good access for Canadian companies to the German and other European markets.

The Netherlands: A good market and popular with Canadian software companies. The high level of English in the business community, a high technology level and a one flight trip from Toronto or Montreal are some points attracting Canadian exporters to form strategic relationships with Dutch partners. Cebit also attracts many Dutch visitors.

Belgium: As the centre of administration for the EC is in Brussels (as well as the existing NATO functions) Belgium can be a key market for specific exporters. As with Holland, Belgium also has a convenient strategic geographic location for access to the EC.

Italy: Along with Spain, the most explosive software markets in Europe and the most neglected by the Canadian software industry. Italy is among the top five countries in Europe in use of technology with a very high usage of PCs. Market intelligence shows quality application development and utility software products are of high interest. Intellectual Property control is more lax than other EC. countries.
The SMAU Computer Trade Shoe in Milan, each October is a good general product show and the Icographic Trade Show each March is a good regional exhibit for graphical products.

Spain: The urgency of the Spanish government to raise Spain's technological level to a competitive level with other EC members, the Olympics in Barcelona and the World Expo in Seville have created a general boom for Informatics products. As many of the Canadian software companies either have already translated or are in the process of translating their products to Spanish, this market is now a Tier A for this sector. The Informat Computer Fair in Barcelona each May/June presents an opportunity to access this market.

TIER B:

Portugal: A country with great needs in the general area of IT. Portugal's high illiteracy rate and low economy do not make it a prime market for software exporters. Most Canadian software developers (as with other countries) do not rate conversion to Portuguese (not a simple language) as a priority compared to French, German and Spanish. It is a good long term market for well-established Canadian companies willing to sacrifice short term gains for a longer term relationship. Portugal's current focus on upgrading its tele and data communication networks provides a market for communication software. Similarly, the great need for education "catch-up" provides a market for educational and training products.

Greece: Very similar assessment as Portugal. Growth in the computer market in Greece is recent, very small compared to other European countries and almost totally restricted to the private sector. The public sector controls 70% of the economic activity of the country and is ignoring the importance of computerization. In the private sector local agents and representatives are many and constantly looking for new opportunities. The enormous technology gap between Greece and the other EC members must be addressed by the government eventually, providing future opportunities for Canadian companies.

EASTERN EUROPE:

REGIONAL ASSESSMENT:

A lack of infrastructure and a lack of understanding of a market economy inherited from centrally planned economies has left the "Eastern-Bloc" countries with little if any distribution channels for software products. Current sales figures are not attainable at this time. Although a high demand market can be anticipated due to the high education levels and the desire to catch up, lack of hard currency and weak intellectual property protection make this a tough market for software exporters.

Only Czechoslovakia, Poland, Hungary and Yugoslavia have agreed to a software standard (IBM). Due to the political unrest and lack of stabilized economies in Yugoslavia, Russia and the Soviet satellites; Czechoslovakia, Hungary, and Poland are currently more "comfortable" markets for Canadian companies.

Although strategic relationships will be more difficult to form and the payback for efforts will take longer, established Canadian companies should make efforts to raise their product profiles in these countries. Limited market intelligence shows application development tools, utility tools, communication software and some specialized products such as Retail Point-of-Sale products are of great interest at this time.

EASTERN EUROPE (cont'd):

TIER B:

Hungary, Czechoslovakia, Poland: There is limited market intelligence available on these countries but the aggressiveness of IT companies from these areas at other European events (eg: CeBIT) shows a high interest in forming relationships with Canadian software companies. Some Canadian companies active in these areas are successfully marketing development/utility tools and Point of Sale (POS) products.

TIER C:

Russia, Ukraine and Other East Bloc countries: There is a high need in these countries for many computer software products. However, apart from the obvious political and economic problems, there is a considerable lag in introducing standards and regulations that would help in the development of a computer user society (unlike Hungary, Czechoslovakia and Poland who have adopted IBM standards). These countries are probably better seen as a longer term market.

AFRICA/MIDDLE EAST:

REGIONAL ASSESSMENT:

There is no reliable market intelligence available for African countries including the Middle East. It is known by informal reports that in most of this region intellectual property protection is virtually unknown and most often not understood within the local cultures.

TIER A:

Apart from possibly South Africa in the near future, none of the other African or Middle East countries could qualify as a Tier A country for software products. This is due mainly to the doubtful copyright situation as well as lack of market intelligence.

TIER B:

South Africa South Africa will be a most important market for Canadian software exporters. There have been many inquiries from South African visitors at Canadian government information booths at several major international trade shows. At this time, a market intelligence exercise identifying high demand products and meaningful contacts would be apropos considering the imminent acceptance of South Africa back into the world trading fold.

TIER C:

Egypt, Algeria, and Ivory Coast: Computers and Software are identified as top priority in these Post Plans. However, as far as software is concerned, informal reports show that intellectual property rights are totally unprotected and business practices questionable in these areas. Until more market intelligence is available, software marketing activities should be conducted cautiously.

ASIA-PACIFIC:

REGIONAL ASSESSMENT:

Japan and S.E. Asia comprise the third most active geographic region for Canadian software companies, and will be the largest world market for software products in the very near future. Japan and the Four Tigers (Korea, Hong Kong, Taiwan and Singapore) have become very aggressive in recent years acquiring packaged software products and forming strategic relationships with North American software developers. Statistics for software sales or usage in this region are not readily available.

Recent software missions to Japan, Korea, Hong Kong, Taiwan and Singapore have shown a great potential for Canadian software companies in those markets. The Softworld Forum hosted by the Information Technology Association of Canada (ITAC) with ISTC and EAITC funding, focused primarily on the Pacific Rim countries. Results showed a high interest by the Canadian software sector in these markets.

TIER A:

Japan: A top priority market for computer software. Japan has broken from its "home developed" policy and is aggressively acquiring software products and strategic relationships with North American companies. Although confirming a relationship in Japan can be a difficult challenge requiring time and effort, Canadian companies succeeding here have had very good results. The Information Technology Association of Canada (ITAC) and the Japanese Information Systems Association (JISA) concluded cooperative action agreements during 1990. Canadian software companies should take advantage of the current partnering philosophy in Japan.

Hong Kong: Hong Kong is an ideal focal point for business in SE Asia, and an ideal springboard for access to the potentially large PRC marketplace. Canadian companies are quite active in the Hong Kong area. The CeNIT Trade Fair each sept/oct. is an excellent event for software companies to expose their product to this region and make initial contact with potential partners.

ASIA-PACIFIC (cont'd):

Singapore: As with Japan, Singapore is very proactive in seeking partnerships with North American companies. The high level of business skills in the Singapore community plus excellent existing networks formed by Singapore entrepreneurs in the ASEAN and other Asian countries make this a prime target for partnerships for the Canadian sectors.

Taiwan: Taiwan has a good economic infrastructure and is actively seeking relationships with Canadian software developers. Point of Sale (POS), development tools, utilities, CAD/CAM and Graphics applications are of high interest. Taiwan also has a strong IT industry association with resources to help Canadian companies seeking business relationships.

South Korea: South Korea is becoming one of the most industrialized nations in this region. Next to Japan it is probably the second market of interest to many Canadian software exporters in the Asia/Pacific region. The business culture of Chaebols can be bewildering to companies first visiting here. Just as in Japan, Canadian companies need to invest much time to establish a firm relationship.

Australia: Although Australia is in a severe recession, it is a good market for quality software products. Australian companies strongly advocate reciprocal agreements or what they call "synergistic partnerships," in that they represent Canadian products in the Asia-Pacific region for representation of their products in North America. If a comfortable partner is found, this type of strategic relationship could be ideal for small Canadian software companies seeking access to the Asia Pacific markets.
The PC Trade Shows held in Sydney each March and Melbourne each August are excellent regional events to meet potential Australian partners.

TIER B:

The ASEAN Countries: Copyright protection is still a major problem in most of these areas; however, Malaysia, Thailand and Indonesia have good economies and a high demand for software products. The USA and Australian software producers are very active here.

India: Although India on paper seems a good market, it is not popular with Canadian software companies. This is due to the experience of some, and the perception of most, that it is very difficult to complete business in India. The government regulations demand complicated local content and/or participation in products sold domestically. Canadian companies also have a lack of trust in the copyright attitude of the Indian business community. On the positive side, India is ideal for North American companies seeking joint product development arrangements due to the high skills level and lower labour costs.

The Peoples Republic of China (PRC): There has been little activity by Canadian software companies in the PRC to date. However the very large contingent of Chinese delegates attending the Softworld Forum in Vancouver last September, and the following business appointments arranged for them in Vancouver, Toronto, Montreal, and Ottawa, showed a high interest by the Chinese in forming strategic relationships with Canadian companies. The recent announcement by the PRC government on intellectual property legislation will be beneficial to future trade activities but experience on the enforcement of such legislation is required. The Chinese displayed great interest in Unix applications and development tools.

POST PLANNING PRIORITIES:

Computer Hardware, Software and Services are categorized under the term "Computers" in most of the post plans. Although sometimes the geographic markets for these "sub" sectors are equal in prioritization, most often there is a significant difference in market potential between these three important sectors. For example - a market that is ripe for certain software products is not necessarily as good for professional computer services; or a market may not be attractive for software products due to a doubtful intellectual property environment but can be excellent for computer hardware products. It is difficult to expect any organization to identify market prospects without thorough market intelligence. During 1991 several useful studies on the European Software Market, as well as Mexico, Chile and Korea were completed by the relevant post/geographic.

56 posts out of 79 submitting Trade and Investment plans identified "Computers" as a priority market. Of these 46 have proposed events including software products within the 1992/93 Fiscal Year. Proposed events useful to software developers are spread geographically - 20 in USA, 11 in Europe, 9 in Asia Pacific and 6 in Latin America. Most of the events proposed are trade fair participation of some kind and a lesser number are focused trade missions.

CANADIAN COMPETITIVE STRENGTHS:

Canada's main competitive strength has come from an excellent and steady supply of creative software engineers over the past three decades. Initially some of this expertise came from selective immigration but most of this strength has come from our Universities and vocational schools. (Waterloo University is a favourite recruiting ground for Microsoft USA). This steady flow also accounts for the tremendous growth of Canada's Software Products and Services sector.

Through this supply Canada has established an international reputation for functionally rich, high quality, reliable software products. Besides such well known world leading software developers as, Cognos (4GL and CASE application development tools), Corel (DeskTop Publishing Graphics tools), and Alias (3D Graphics Design), Canadian capability is also recognized in geographic information systems, health care applications, educational products, networking software, Unix applications, and many other areas.

ISTC's recent analysis based on a U.S. company's research estimates the 1991 world market for software at $78 billion (US) to grow at approximately 14% p.a. to $132 billion (US) by 1996. No substantive figures are available for Canada's share of the software market however Canadian companies are responsible for approximately 3% of the world overall Information Technology (IT) production and services.

Recent trends in the software market favour Canada's industry:

- Growth of Microsoft Windows,
- The rapid movement towards Client-Server computing and away from mainframe host systems. (The European market alone for client-server applications is estimated to reach $US3.6 billion by 1996),
- The International standardization on Open Systems Interface (OSI),
- The growth of Object Oriented technology.

Canada's software industry has well established and growing strengths in each of these areas.

Apart from these general trends Canada has a excellent reputation for "niche" products. Significant among these are:

- Education: - Courseware, Computer Based Training (CBT), Remedial Aids, English/French as a second language etc.,

- Health care:- Hospital Administration, Diagnostic Analysis, Doctors Administration, Patient Records, Prescription Drugs and others,

- Business: - Forms Design, Project/Time Management etc.,

- Retail: - Point of Sale (POS) Applications. ,

Canada's long and successful association with the Resource Industries has led to a significant depth and success in associated software products such as: Pipeline design and maintenance and diverse Geographic Information Systems (GIS). Canada's GIS sector has grown over 30% in less than two years.

SECTORAL MARKETING PROBLEMS:

Overall: The major factors affecting the marketing competitiveness of the software products sector are - lack of marketing/business skills, lack of venture capital for the development and implementation of marketing strategies, a lack of sectoral organization, and a lack of understanding from the established marketing support groups. These problems are not unique to the Canadian industry and are quite common in most of the other competitive countries.

Financing/Management Skills: Generally - there is a requirement for better skills/education in business/marketing, financing and more readily available financing.

Credibility: Software firms generally lack credibility with the established financial institutions and venture capitalists who have difficulty grasping something as intangible as software. This situation is quite understandable in a sector that a few years ago did not exist and is growing faster than any other global industry sector. Most of the companies are very small with marketing activities most often directed by the creators of the product. The financiers also say that software developers do not understand the world of finance.

Associations: The established industry associations were originally slow to recognize software as a sub-sector deserving of serious attention. However, within the last three years both the Information Technology Association of Canada (ITAC) and the Canadian Advanced Technology Association (CATA) have developed structured activities to support software exporters. The association memberships are currently predominantly made up of the larger companies and do not benefit from steady from the sectors small and medium enterprises. The Industry Associations can be excellent tools to help achieve a healthier export ready state. However, the associations are limited in funds and depth of human resources. (ITAC is repeating in Vancouver, September 93, the Softworld Trading forum first held in 1991. This forum is targeted on attracting partners and buyers from the Pacific Rim countries.)

Complexity: The software sector is complicated. Unlike the telecommunications sector, which everybody understands refers to the transmission of voice or data, the software sector is an enabling technology that infiltrates almost all strata of the industrial, manufacturing, business, and social communities, including telecommunications. A product may be a Computer Aided Design (CAD) or a Graphic product etc., but be directed towards a specific industry sector. This requires not only an understanding of the software capabilities but also of the specific industry it is directed towards. A structured marketing plan requires good market intelligence that penetrates the use of software in all aspects of business and life.

Profile: Although Canadian software products have a high reputation with the specific "users," Canada as a country does not have a high international or domestic profile as a software producer. All opportunities to raise this profile should be exploited.

Future: Canada currently has a healthy competitive software sector. Unfortunately this situation does not have as healthy a prognosis for the future. The diminishing enrolment in and graduation from the computer science and technical universities and community colleges does not augur well for the short term and long term prospects for this sector. To ensure Canada's competitiveness, the image of computer technology in general, as well as a career path, needs to be promoted within Canada.

Software Sector Campaign: The Information Technology Industries Branch (ITIB) of Industry Science and Technology Canada (ISTC), has developed a Software Sector Campaign to accelerate and assist the growth in this important sector. This campaign is well founded on sound studies of Canada's software products industry commissioned by ITIB. These studies include detailed comparisons with the USA sector as well as an analysis of the successful strategies of Canadian software companies in the USA. The campaign, now entering Phase 3, will address most of the problems identified above, with an ultimate goal that at the end of Phase 3 (within 5 years):

a) 30% of pre-threshold companies (less than $2 million) will pass that threshold,
b) 40% of threshold companies will have sales above $10 million,
C) 10 companies will have sales above $100 million,

EAITC fully supports this initiative.

ELEMENTS OF AN EXPORT MARKETING STRATEGY:

General "Software Products" as a sector is relatively new to the international community. As the individual products infiltrate so many diverse communities a "sector" marketing strategy is a challenge. In reality the sector is a series of sub-sectors providing solutions to totally different industry/business/social sectors but joined by a fraternity of software engineers. Apart from the science of software this fraternity is connected by the similar problems of a lack of business acumen, marketing knowhow and growth financing.

A study of Canadian software product success stories investigated the experiences of Canadian software companies entering the USA comparing the marketing strategy of successful firms versus the less successful. A major conclusion of the study was that the greater the Foreign Direct Investment (FDI) made by the Canadian company in the target market, the greater the success. It also identified that the earlier the FDI appeared in the marketing strategy the greater the success. Although drawn from the USA market experience, this philosophy can be applied to most international markets. Traditionally Canadian exporters are inclined, and most often advised, to spend some time within the target market area using distributors, dealers, VARS, direct sales etc., (gaining experience) before considering an FDI. Considering the study's conclusions, this strategy should be reviewed.

Profile: Canada's international profile for the software sector varies from country to country but could be improved in all markets. New initiatives are required to raise international awareness of Canadian solutions. Since so much Canadian software is directed at vertical markets in other sectors (eg. mining, energy), we need to give more attention to promoting these products in promotional events for those sectors. Apart from seeking new initiatives there are existing international events that can be exploited for this purpose. Annual international events such as the CeBIT Trade Fair in Hannover, Germany each March, the CeNIT Fair in Hong Kong each Fall and the Spring and Fall COMDEX Fairs in the USA are excellent vehicles for promotion. Special upcoming events such as the Information Technologies Association of Canada's (ITAC), Softworld 93, planned for September 93 and the option of being the Featured Country at COMDEX Spring in Atlanta, May 93 and the Partner Country at CeBIT in March 1994 offer excellent opportunities to boost Canada's profile.

Market Intelligence: Industry generally agrees that foreign market intelligence is one of the most valuable services that EAITC can provide. Recent reports from the Posts on the software market in Europe, Mexico, Chile, Malaysia, Korea and others, have presented an excellent perspective of the technological, economic and standard customs of these areas. Software products deliver solutions to problems in diverse business, social and domestic life. Besides the general technological/economic state of potential markets, the Canadian software sector needs information on specific sub-sectors. Solution providers in the Retail Industry, Education, Health Care, Business, Engineering Design etc. need to know the "state of the art" in that sector, key players, key distribution contacts, and the level of the competition.

Sector Intelligence: The lack of presentable in-depth information on the diverse Canadian software sector impairs the comprehension of marketing support networks (such as the Trade Posts), limits their ability to increase profile and service local sourcing requirements. A necessary component of the Trade promotion programs should be the development of such material.

Strategic Partnering: The size of most software companies worldwide limits the resources available for global marketing. This creates a need for strategic partnering for companies with a global agenda. Identification of qualified partners in Tier A and B markets will be of great assistance to the Canadian software sector.

Trade Promotion: Specific trade activities should be restricted to Tier A and B markets. Tier C markets should be restricted to gathering market intelligence. Recent experience has shown that a two phase approach to trade missions is successful. Phase 1 consisting of a study of the market potential and local business culture as well as the profiling of potential partners/contacts. Phase 2 following later with a mission of Canadian companies selected from the Phase 1 information. This approach should be adopted for more trade missions, spanning two fiscal years if necessary.