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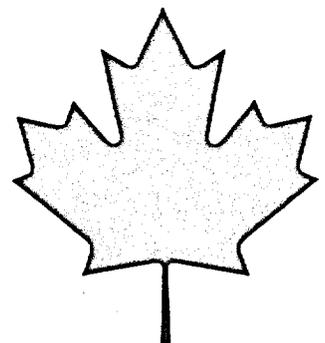
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Market Studies of United States

no. 19

Opportunities for Canadian Data Processing
Hardware and Software Products in the
Southwestern U.S.A.



Opportunities for Canadian Data Processing Hardware and Software Products in the Southwestern U.S.A.

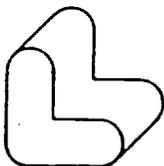
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Los Angeles & Westport CT, 1983

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EXECUTIVE SUMMARY

The Department of External Affairs, Ottawa, Canada commissioned Peter Louch & Associates to study the Southwestern U.S. market for selected computer hardware and software products and to determine whether there could be a market for Canadian computer products manufactured by small to medium sized companies. This report will provide these companies with effective marketing information designed to assist them in selling their products in the Southwestern U.S.A. It is intended that the findings of this report and the market strategy provided should be used as an effective marketing tool and reference guide by those companies preparing to export.

The U.S. computer industry's growth rate slowed appreciably during 1982; shipments for both hardware and software during the year totalled \$34 billion resulting in an 11 percent increase. The industry is expected to recover in 1983 and to resume its average growth rate of 18 percent per annum with shipments estimated at \$40 billion. Industry analysts predict that the expansion rate will continue at this level into the 1990's. The U.S. supplies 60 percent of the world's total computer requirements, not including the substantial production contribution made by U.S. subsidiaries operating outside the U.S., including Canada. Current world production of computers is \$64 billion; this figure is expected to increase to \$200 billion by 1990.

In recent years there have been major product share changes in the computer industry. The most significant of these has been the phenomenal growth of the microcomputer industry and the software industry. Industry analysts predict a 55 percent increase in microcomputers between 1981 and 1986 and a 36 percent increase for software over the same period. During the last two years, there has been a major change in computer manufacturers' attitudes towards service and maintenance. Manufacturers have recognized that inadequate service and support in the industry could seriously impede growth and affect future business. A number of leading companies are now placing greater emphasis on service, technical support, and product training. These three points are part of the key to success for Canadian exporting companies.

1983 proved a dramatic year for the U.S. computer industry. The full impact of low priced microcomputers was felt for the first time. The Japanese computer industry doubled its exports during the year; the resulting price-war and scramble by leading U.S. computer manufacturers to undercut the Japanese with a new generation of low priced, sophisticated microcomputers severely affected the stability of the industry. A number of early leaders in the industry experienced severe financial problems; one major U.S. producer, Texas Instruments, totally dropped out of the computer industry. A number of U.S. companies continue to experience major problems.

The U.S. computer industry is concerned by the rising level of computer imports. Canada had previously been the largest U.S. export supplier but

has been overtaken by Japan. Canada's 1982 U.S. exports totalled \$510 million, an increase of 21.6 percent over 1981. The U.S. computer industry does not, however, see Canada as a major threat, secure in the knowledge that about 90 percent of all Canadian-U.S. exports are made by Canadian subsidiaries of U.S. companies. Total U.S. imports for 1982 were \$2.1 billion, representing an increase of 30 percent over the previous year.

The Southwestern U.S. is responsible for approximately 41 percent of U.S. national computer production and 24 percent of world computer production. 75 percent of this figure is manufactured in California alone. In the Southwestern U.S., computer consumption is estimated to be approximately \$6 billion (or 20 percent of the national total). The Southwestern U.S. market area is a sophisticated production center and a high volume consumer market.

During the course of the study, prospects for Canadian products were examined with hardware distributors, computer systems manufacturers, software manufacturers, turnkey systems companies, and retailers. It is apparent that there are markets in the Southwestern U.S. for many of the products manufactured by Canadian companies who provided initial input and lists of products for the study. Medium to high-end hardware and software products appear to be among the best prospects and many of the companies interviewed are actively interested in looking at new products from all sources. Southwestern U.S. companies generally have a good opinion of Canadian products and technology. Low-end products, however, do not look practical for Canadian companies because the industry price-wars of the last two years have reduced the prices of low-end products so much that Canadian companies would be unwise to try to compete unless they can provide a specific cost advantage for either hardware or software.

It is possible that many Canadian companies reduce their chances of marketing success because of ineffective advertising, literature, or presentation, and a lack of communication. Corporate identity and advertising programs should be carefully thought out and prepared by professionals.

The report provides a series of market strategies based on individual Canadian product types. Accurate evaluation of the potential market for new products and the provision of an effective market entry plan are key elements. The report examines a range of promotional activities for computer manufacturers. These include trade show participation, trade press advertising, seminar programs, and others. The report documents a number of leading trade shows held in the Southwestern U.S. and leading industry trade publications.

The results of the interviews conducted during the course of the study indicated that Southwestern U.S. end-users could be interested in:— 8 and 16 bit microcomputers, sophisticated graphic, scientific, and word processing software, impact and non-impact printers, video terminals (including CRTs), portable telex terminals, networking equipment, disk drives, Winchester back-up devices, and modems.

The interviews also indicate that there is a definite interest in high priced computers with micro mini overlap and that there is also fairly wide spread interest in micro-based systems, personal computers, and high speed multiplexors.

Almost all the companies interviewed, regardless of size, are aware of their need to continually examine and evaluate new products in order to maintain a marketing edge. Prospective customers do not

always know what sort of new products they are looking for but they are in the main looking for new innovative replacement products. That is the nature of the computer industry. The chart on the following pages has been included to provide an indication of the product types which interest Southwestern companies contacted during the study. Readers should note that category headings are of necessity very broad.

Computer and Computer Systems Manufacturers

- Advanced Micro Devices*
- Amdahl
- AMF Geo Space
- Amlyn Corp.*
- Astronautics Corp.*
- Beehive Corporation
- Bo-Sherrel Co.*
- C. Itoh Inc.*
- Compucorp
- Computer Products Mrktg.
- Computer Sciences (Infonet)
- Comrex International*
- Data Products Corp.
- Dicom Inc.*
- Dual Systems
- ETI Micro Inc.*
- Forward Technology
- Franklin Data Systems*
- Grinnel Systems Corp.
- Kontron Electronics
- MBO Systems
- Mountain Computer Inc.*
- Nesco*
- Nestar Systems
- Plessey Peripherals
- Rexon
- Selanar Corp.
- Sierra National
- Sperry Univac*
- Systar Group
- Systems Group
- Telecom Terminals
- Tek-Com Inc.*
- Trilog
- Western Dynex Corp.
- Zendex Corp.

	Computer systems	Minicomputers	Microcomputers	Printers	Drives	CRTs/Terminals	Non-specified peripherals	Telecommunications equipment	Systems software	Commercial, professional or scientific software	CAD/CAM software	8 - 16 bit micro processors	Other board level products	Hardware products	n.e.s.
Advanced Micro Devices*							•								•
Amdahl							•								•
AMF Geo Space					•	•							•		
Amlyn Corp.*				•	•		•								•
Astronautics Corp.*				•											
Beehive Corporation					•										
Bo-Sherrel Co.*							•								
C. Itoh Inc.*				•		•									
Compucorp				•	•										
Computer Products Mrktg.						•							•		
Computer Sciences (Infonet)	•	•	•	•	•							•	•		•
Comrex International*				•	•	•									•
Data Products Corp.													•		•
Dicom Inc.*													•		•
Dual Systems				•	•	•	•								
ETI Micro Inc.*													•		•
Forward Technology				•	•							•			
Franklin Data Systems*						•							•		•
Grinnel Systems Corp.							•								
Kontron Electronics							•						•		
MBO Systems				•								•	•		
Mountain Computer Inc.*				•								•	•		•
Nesco*													•		
Nestar Systems						•							•		
Plessey Peripherals				•	•	•									
Rexon					•	•									
Selanar Corp.							•						•		•
Sierra National				•	•	•							•		
Sperry Univac*					•										
Systar Group	•														
Systems Group							•		•						
Telecom Terminals				•		•						•	•		
Tek-Com Inc.*													•		•
Trilog												•	•		
Western Dynex Corp.															
Zendex Corp.					•	•						•			•

* Address details provided in Appendix "H"

Turnkey Systems Companies

Actu Systems
 Anacomp Inc.
 Apex Data Systems
 Associated Computer Consultants
 Automation Consultants*
 Century Electronics*
 Cross Information Company*
 Binex Automated
 Briner Chase Group
 Budget Computer Systems
 California Systems Associates
 Computer Input Corp.
 Farmplan Inc. Systems
 Forth Inc.
 Hans Wynholds*
 Interactive Management Systems
 Knox Data
 Lodestar Computer Services
 Marc Software Intl.
 Marfam Group
 McCue Systems Inc.*
 Metra Instruments
 Municipal Data Systems
 Pace Industries*
 Promedics Data Corp.
 Quest Inc.
 System Development Corp.*
 Trail Blazer Systems
 Wismer & Becker

* Address details provided in Appendix "I"

Hardware Distributors

Alphacom Inc.
 American Computer & Engineers Inc.
 Byte Industries Inc.
 Cabot Business Systems
 Computer Datacom*
 Comufact
 Computer Input Corp.
 CSS Telecommunications
 Dayton Forrester Associates
 DMC Systems
 Eakins Associates*
 1st Solutions*
 Hamilton Microsystems
 Informatics General Corp.
 Interlink Systems*
 Jade Computer Products*
 J.P. Patti Inc.
 R. Koffler
 Leasametric
 Mini Computer Exchange
 New System Inc.
 Northwest Analytical
 Peripheral Marketing

Computer systems	Minicomputers	Microcomputers	Printers	Drives	CRTs/Terminals	Non-specified peripherals	Telecommunications equipment	Systems software	Commercial, professional or scientific software	CAD/CAM software	8 - 16 bit micro processors	Other board level products	Hardware products	n.e.s.
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Actu Systems			
Anacomp Inc.			
Apex Data Systems		
Associated Computer Consultants									.					
Automation Consultants*	.								.					.
Century Electronics*	.	.		.	.				.			.		.
Cross Information Company*														
Binex Automated		.									.			
Briner Chase Group	.	.				.					.
Budget Computer Systems														
California Systems Associates									.					
Computer Input Corp.		.									.			
Farmplan Inc. Systems		.	.		.	.			.	.	.
Forth Inc.		.									.	.		
Hans Wynholds*		.									.	.		
Interactive Management Systems			.	.					.	.
Knox Data														
Lodestar Computer Services		.									.			
Marc Software Intl.					.	.								
Marfam Group					.	.			.	.
McCue Systems Inc.*	.	.												
Metra Instruments	.	.	.				.		.	.	.	.
Municipal Data Systems		.						.	.		.
Pace Industries*											.			
Promedics Data Corp.		.									.			
Quest Inc.		.									.			
System Development Corp.*											.			
Trail Blazer Systems											.			
Wismer & Becker	.			.	.						.	.

1.0 INTRODUCTION

This report has been prepared for the Department of External Affairs, Ottawa, Canada.

The Department is aware that Canadian computer exports to the United States totalled \$510 million in 1982 and showed an overall increase of 20 percent over 1981 totals. Canada sold over 70 percent of her total computer exports to the U.S. in 1982. Most gains were registered in sales of peripheral equipment, telecommunications equipment, and software. Canada's 1982 export sales to her other major client countries showed predominately negative growth. It should be noted that the majority of Canadian computer exports to the U.S. are from Canadian subsidiaries exporting to their U.S. parent companies.

During the same year, Japanese computer exports to the United States more than doubled. Japan replaced Canada as the number one U.S. export supplier and increased her market share by 35 percent. This had the effect of reducing Canada's own market share in the U.S. by 5.7 percent, despite Canada's increased export total. The Japanese doubled their sales in all measured categories except software, which only showed a moderate gain.

The Department wished to obtain an accurate picture of the market potential in the Southwestern U.S.A. for selected Canadian computer products and technology. The Southwestern U.S. is generally regarded as the leading computer producing region in the United States and it accounts for approximately 40 percent of all computer production in the U.S. For this reason, the area could be the focal market for increased Canadian computer sales in both hardware and software categories for Canadian companies wishing to establish a viable market base in the U.S.

The Department commissioned this study and report from Peter Louch & Associates, a Los Angeles based consulting firm. It is intended that the report will provide Canadian companies with a full background to the Southwestern U.S. computer market. In addition, the report is intended as a directory of possible contacts for interested Canadian suppliers and as a source of effective market strategies designed to enable Canadian companies to compete successfully with U.S. and other producers in this vital market place.

Over forty Canadian computer companies responded to the Department's request for information to support the study. These companies are interested in marketing a wide range of products in the Southwestern U.S. including hardware, software, and services. Canadian companies which responded were in the main small and medium sized producers. This report has been specifically prepared for companies in those categories.

1.1 STATEMENT OF OBJECTIVES

The Department's brief for the study requested a wide range of information designed to build up an accurate picture of the potentials and problems offered by the computer market in the Southwestern U.S.A. The Department also requested an evaluation of future trends in various segments of the computer industry designed to assist Canadian computer companies with future product development and research. The objectives of this study, outlined by the Department, are as follows:

- To evaluate Southwestern U.S. regional markets for Canadian manufactured data processing hardware and software products with specific emphasis on opportunities in the San Francisco Bay area, Santa Clara (Silicon Valley), Los Angeles, Orange County, the San Diego area, Arizona, Utah, Colorado and Nevada.
- To provide Canadian suppliers with effective contact information on companies interested in doing business with them in the market areas. The study concentrated on computer systems manufacturers, hardware, distributors, and turnkey systems operators in the market areas. However, as a result of a mid-project meeting, it was decided to emphasize retail opportunities for software and hardware as well. Accordingly, a number of software producers, distributors, and end-users were added.
- To provide the widest possible background information on the overall state of the computer industry in the market areas and to evaluate future hardware, software and marketing trends in the industry.
- To provide information on distribution channels and methods currently in use in the industry. To discuss tariffs, transportation costs and any other matters affecting the ultimate salability of Canadian computer products in the Southwestern U.S.A.
- To supply effective and workable market strategies specifically designed to assist small and medium sized Canadian manufacturers to sell successfully in Southwestern U.S. markets.

1.2 PRODUCTS AND TECHNOLOGY COVERED BY THIS STUDY

A listing of product types to be included in the study was provided with the original "terms of reference". The list was modified with input obtained from Canadian companies which provided product information. The final revised list of products was agreed as the study progressed. The list has been separated into three categories. They are as follows:

- *Software* (in three groups): Systems software and program development tools for mini and mainframe computers; applications software for commercial, professional, or scientific use; and computer aided design software for technical applications.

- *Computers, Terminals and Peripherals*: Intelligent CRTs, graphics terminals, data communications products and analyzers (including networking systems); nonimpact printers, telex terminals, etc.
- *Board Level Products and Components*: 8 and 16 bit micro-processors, board level products, and hardware components.

It should be noted that the above categories by no means cover all the product types offered by respondent Canadian companies. A complete list of companies and the products they consider suitable for the U.S. market is provided in the Appendix. Any meaningful information obtained on listed or non-listed products is included in this report if it appeared that the information would be of use to the computer industry in Canada.

Approximately fifty percent of responding Canadian companies have some form of distribution arrangement in the Southwestern U.S.A. A number of distributors currently handling Canadian products are interviewed later in the study.

1.3 FORMAT OF THE REPORT

The first part of the report (sections 2 and 3) consists of:

- An overview of computer production in the United States together with a review of current and future trends in manufacturing and pricing in U.S. domestic markets for the products selected for this study. An outline of major importing trends is included.
- An examination of the Southwestern market for computer production. The importance of California in U.S. and world computer production and technology. The Southwestern U.S. potential customer base for computer hardware and software products, whether manufactured domestically or imported. The information obtained made it possible to compare the relative importance of the various potential marketing centers nominated for the study and to determine the most effective marketing centers for Canadian marketing activities.

The second part of the report consists of sections 4 to 9:

These sections contain the results of the fieldwork we completed and include the following:

- Extensive interviews with each of the three potential customer industry groups identified in the "terms of reference" conducted to obtain information on the extent of products manufactured and sold, attitudes to new supply sources, future product trends, current buying habits, and knowledge of Canadian potential and products.
- Assessments of Canadian potentials for supplying each industry category.
- An analysis of distribution methods used by hardware and software manufacturers in the market areas.

- An overview of the possibilities of sales of Canadian hardware and software to retailers in the Southwestern market area, together with retailing trends.
- An examination of Canada's strengths and weaknesses as a U.S. export supplier and an assessment of Canadian market penetration in the Southwestern U.S. market area.

The third part of the report (sections 10 to 14) covers pricing products for the Southwestern U.S. market, potential business with Canadian/U.S. defense contractors, a comparison of the various promotional methods available to Canadian companies, questions relating to documentation and tariffs, and alternative freight methods and costs.

The fourth part of the report (sections 15 and 16) contains the market strategies developed for the products covered by the study intended to assist Canadian manufacturers to penetrate the Southwestern U.S. market successfully. This section also contains a summary and conclusions.

The Appendix contains further information on trade shows, publications, tariffs, and other information designed to assist Canadian companies to make effective plans to market their products or services.

1.4 INFORMATION GATHERING

The following methods have been used to gather information for this study:

- Statistical analysis to determine the market size, market potential, and growth patterns for the computer industry in the U.S. and in the market areas; also to gauge the volume and changing patterns of computer exports to the U.S.
- Controlled questionnaire mailings to 450 companies in computer systems manufacturing, turn-key systems, and hardware and software distribution categories followed by tabulation of the information obtained in each case.
- Individual telephone interviews with 80 companies from the above categories plus the retail computer category together with selected personal visits in the market areas.
- Evaluation of all the information obtained to build an effective picture of the potential the market offers using our own knowledge of the Southwestern U.S. market and input from a variety of industry sources to provide effective market strategies.

2.0 THE U.S. MARKET FOR DATA PROCESSING HARDWARE AND SOFTWARE PRODUCTS

The U.S. computer industry is now recognized as a major force and indicator in the U.S. economy. During the last ten years growth in the industry has been consistent in sales, employment and production. The average growth rate in the industry historically has been 18 percent per annum with the exception of 1981-1982 when the rate declined to 11.3 percent. Industry analysts predict that the expansion rate will resume at 17-18 percent per annum and continue at this level into the 1990's. The computer industry has been a major contributor in increasing the U.S. annual trade surplus.

Total U.S. industry shipments* for computing equipment, including both hardware and software, were \$34 billion in 1982 and are expected to increase to \$40 billion in 1983. These figures can be compared with the 1981 total of \$30.5 billion, (see Table 2.0). The U.S. supplies approximately 60 percent of the world's total computer products in both value and number of units. This does not include the substantial production contribution made by U.S. subsidiaries operating outside the U.S. Current world production of computers is \$64 billion and industry analysts expect this figure to increase to \$200 billion by 1990.

Although U.S. production is expected to remain strong, U.S. manufacturers will experience growing competition reflecting changes in current production and sales patterns. These changes include lower growth rates in certain products, for example, mainframe computers, and radically declining unit prices in the new and growing markets for standardized products such as, micro-computing systems, disk storage, and software.

* Computer hardware is classified under U.S. Standard Industrial Classification (SIC) 3573; Software of all types under (SIC) 7372

Table 2.0
Computing Equipment:
Trends and Projections 1980-83

	1980	1981	1982	1983
Value of shipments*	26,498	30,596	34,060	40,190
Total employment (000)	305	335	351	383
Production workers (000)	135	141	148	160
Capital expenditures*	1,738	—	—	—

* \$million

Source: Bureau of the Census and Bureau of Industrial Economics

Consumption of computer products in the U.S. in 1982 was \$27.2 billion. This figure consists of total U.S. shipments less exports (\$8.9 billion) plus imports (\$2.1 billion). Industry sources estimate that this consisted of \$20.0 billion of hardware and computing equipment and \$7.2 billion of assorted software.

2.1 MARKET SEGMENTS IN THE COMPUTER INDUSTRY

Hardware:

Computer products and their market share change rapidly in the industry, for example, the emergence of the desktop computer over the last three years. The U.S. produced an estimated 1.2 million desktop computers during 1982 for an estimated \$2.1 billion. In 1982, sales of desktop computers, associated peripherals and 32 bit minicomputers continued to grow while the demand for mainframe computers and 16 bit minicomputers, together with their peripheral equipment for OEMs, dropped considerably. The introduction of lower priced micro and minicomputers with greater computing capacity is a main factor in the swing away from traditional mainframe computers and has opened new sales directions for many companies which traditionally concentrated on producing more expensive computing equipment.

The average price for home desktop computers remains at around \$300 but commercial desktops suitable for home/business and commercial use range in price from \$1,000 to \$10,000. It is generally understood that a high quality microcomputer for small business use will cost around \$3,500. This position may change radically in the next 6 to 12 months with the introduction of low price alternatives from such companies as IBM and Coleco. The projected increase in market share for desktop computers is shown in Table 2.1. It is expected that sales in this category will increase by 200 percent by 1986. Heavy price cutting, volume discounting and consumer rebates, together with the inclusion of free application software packages, are now widespread in this portion of the industry.

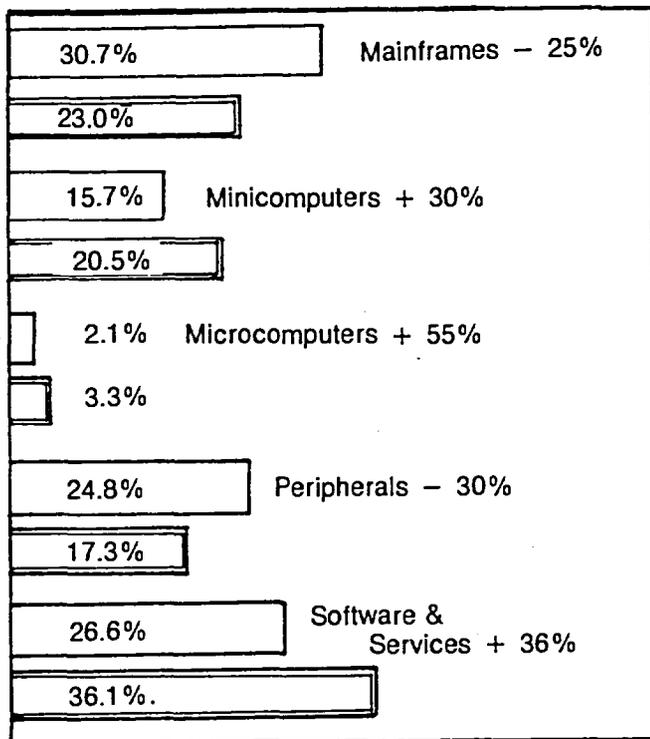
Other hardware products which featured strongly during 1982 were 8-inch flexible (floppy) disk drives and "half height" (slim line) 8-inch drives which have increased storage space while making it possible to reduce the case size of desktop computers. The 5.25-inch disk drive has also increased in popularity and, as is the case with most peripherals, increasing competition both in the U.S. and from Japan has resulted in major price reductions which in turn have forced many smaller manufacturers out of production. For example, prices for 5.25-inch drives in large quantities for OEMs had dropped to as low as \$50 per unit in 1982.

The demand for rigid (Winchester) disk drives in the 8 and 5.25-inch sizes remained relatively strong during 1982. Competition became relatively fierce with OEMs purchasing large quantity orders at between \$600 to \$700 per drive compared with the average price of \$1,000 in 1981. Industry sources estimate that approximately half a million units were

shipped during 1982 worldwide. This reflected an increase of more than 100 percent over 1981 figures.

With the increasing demand for desktop computers during 1982, impact printers became a key supply item. Japanese companies virtually dominate this sector and have succeeded in lowering the supply price for low-end printers to less than \$500 per unit. Faced by stiff opposition, many peripheral producers have reacted by developing more sophisticated models calculated to appeal to the serious business user, and selling for a higher price. This is also the case with desktop computers.

Table 2.1
CHANGES IN RELATIVE MARKET SHARES
FOR SEGMENTS OF THE COMPUTER
INDUSTRY 1981-1986



□ 1981 % □ 1986 % (estimate)

Source: Datamation

Software:

Table 2.1 shows that the software and services segment of the computer industry should be the second fastest growing segment over the next few years. Industry sources estimate that there will be a 36 percent overall increase in this segment between 1982 and 1986. The U.S. market for software and services now exceeds \$12.5 billion per annum. The field is attracting a rapidly growing number of producers. Many of these are small sized companies employing less than ten persons and there seems to be no end in sight for continued expansion at this level. Software production is an essential ingredient for a viable computer industry. In order to succeed with software packages, the products must be high quality, error free, and standardized in programs and languages. Further, the ability to provide custom

capabilities has provided many smaller companies with access to lucrative businesses.

IBM produces 14.9 percent of the total U.S. requirement for software. Yet, despite this fact, there are an estimated 6,000* U.S. companies involved in software design, production, and marketing. A number of these companies achieve international pre-eminence because their products are marketed by the larger hardware producers, but the vast majority of software products exist to service custom markets and their packages are produced in relatively small quantities.

It is not possible to document commercial and business software because of the complexity and fragmentation of the market. The market for entertainment software packages is, however, fairly well documented since it involves the analysis of retail success. A recent survey by Computerware and Electronic Retailing magazine has established that the Nation's seventy-five leading software houses produced a total of 3,624 software packages during 1982 and that 54 percent of their products are offered for entertainment, 33 percent for educational purposes, and 11 percent are offered for home business use. It should be noted that companies concentrating on computer software games packages, an area which has been a "boom" area for a number of years, are now experiencing severe sales losses and it appears that this segment of the industry is now in decline.

* Data Sources

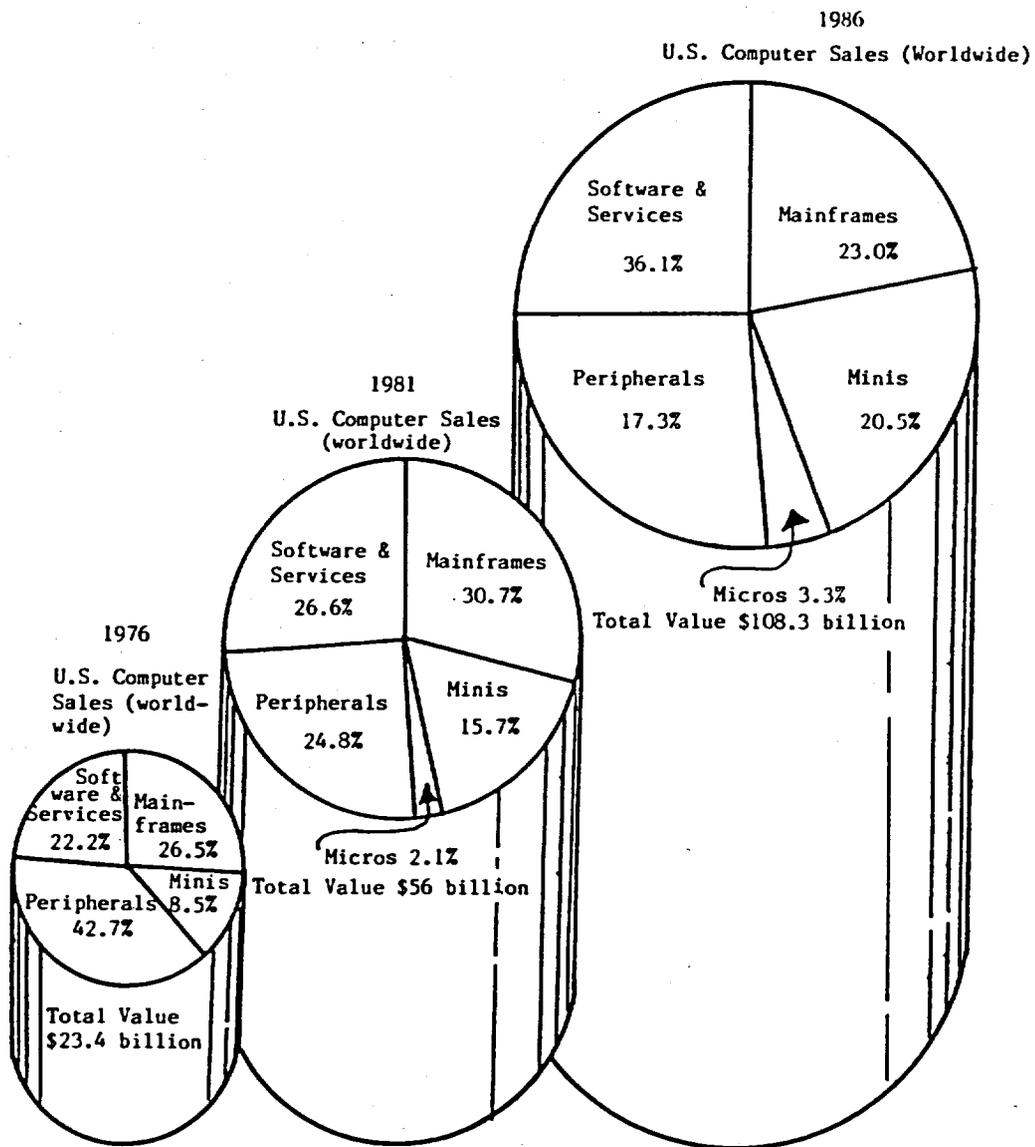
2.2 U.S. PRODUCERS

The U.S. computer industry currently employs about 360,000 people in a total of approximately 1,200 manufacturing facilities. The latest hard data available from the 1977 Census of Manufactures listed 932 manufacturing establishments. There had been an increase of approximately 30 percent by the end of 1982. The four largest U.S. producers control approximately 45 percent of all computer products manufactured in the U.S. The industry leader, International Business Machines Corporation, alone produces approximately 33 percent of the national total for computer products. The three next largest companies, Digital, NCR and Control Data Corporation collectively contribute approximately 11 percent to the national total. IBM's dominance in the market sector has not prevented other American companies from participating successfully in the computer industry either as OEMs, suppliers to OEMs or as independent peripheral manufacturers or software producers.

Over the last twelve months, however, a number of early leaders in the industry have developed severe financial problems due to a number of factors but mainly due to misreading marketing trends in the industry. Other companies, faced by increasing price competition at home and overseas, have moved their production bases outside the U.S. Yet, despite setbacks in some sectors, new companies are constantly emerging in this extremely fragmented

CHANGING MARKET SHARES FOR COMPUTER INDUSTRY SEGMENTS AND PROJECTED GROWTH 1976 - 1981 - 1986

BASED ON WORLDWIDE PRODUCTION
OF U.S. COMPUTER INDUSTRY



Source: U.S. Department of Commerce: International Trade Administration 1983

industry which continues to offer excellent prospects for new suppliers. Companies entering in supplying this dynamic industry must be technically inventive, price conscious, and service oriented.

2.3 TRENDS AND FORECASTS

The increasing dominance of microcomputers will be a major factor for growth in the computer industry during the next five years. Mainframe computer sales have declined due, in part, to market saturation, while the demand for microcomputers continues to increase. Business and industry have been the traditional markets for computers and the trend towards office and factory automation will continue. Mini and microcomputers which offer expanded capabilities and networking solutions will be in demand.

Computer manufacturers have traditionally regarded the "Fortune" companies as their major customers but during the recent recession the small business sector was the only portion of the economy which showed any measurable growth. Computer hardware and software manufacturers are just beginning to realize the huge potential market which the small business sector offers. Almost all innovative breakthroughs in business have come from this sector. In order to be successful in this market, producers must develop software which offers small businessmen advantages outside standardized packages which have been developed in the main specifically for large corporate DP and MIS use. At the same time, hardware manufacturers must continue to develop the ultimate in "user-friendly" equipment. This market, largely ignored by the larger computer manufacturers, could prove very rewarding for innovative hardware and software producers.

It has already been noted that there is a severe slump in the sales of computer games. Despite the fact that more and more school-age children are becoming exposed to computers, forecasters predict that the computer generation's interest in computer games will be replaced by an increasing awareness of the educational advantages which computers offer. There are substantial market opportunities in this area for innovative and forward-thinking computer hardware and software producers, but this market will not become a major factor until high quality, easy to use hardware with increased graphic capabilities and the ability to interface with telecommunications is developed. The lead in this area has often come in the past from the smaller innovative company.

Competition from imports will continue to play a major role in decreasing the cost of U.S. computer products. Several major U.S. producers have moved their production out of the U.S. to new low cost production centers such as, Mexico, Brazil, Korea, Taiwan, and the Phillipines. This trend will continue.

Many independent producers have begun to develop hardware and software specifically designed to modify, link and expand existing OEM capabilities. This trend will continue since it is unlikely that major

U.S. producers will move to adopt effective industry standards, fearing that they will lose their product identification and be unable to compete with low cost production.

Most major U.S. computer companies and industry experts see the lack of adequately trained service and technical staff to be a major growth inhibitor in the immediate future. To combat this problem, many companies are attempting to provide their distributors with full support and education programs while, at the same time, trying to recruit technical personnel for their own staff.

3.0 SOUTHWESTERN U.S. MARKET FOR DATA PROCESSING HARDWARE AND SOFTWARE

The U.S. produced \$34 billion of computing hardware and software in 1982. The Southwestern United States market area produced \$14 billion during the same year. California is the nation's leading computer producing state and produced \$10.2 billion (\$30%) of the national total in 1982. Arizona, Utah, Colorado, and Nevada, the other Southwestern U.S. states included in the study, contributed a further \$3.6 billion.

The market area exported a combined total of \$1.4 billion of computer products to international markets during 1982. Southern and Northern California contributed \$719 million and \$619 million respectively to this total. The remaining segments of the market area only contributed a very small amount. This does not mean that there are no large computer manufacturers or service companies operating in the market area outside California. International computer exports from the market area account for 10 percent of the area's total shipments. This figure is substantially below the average percentage of international exports from the area for most value added manufactured products. We believe that low international exports of computer equipment from this major producing region are indicative of the relatively high consumption of computer equipment in the Southwestern U.S. market. It is not possible to determine the value of computer products shipped to other parts of the U.S. from the market area nor is it possible to quantify the value of exports which are shipped to the Southwestern U.S. from other countries.

As previously mentioned, U.S. national consumption of computing equipment and software was \$27.2 billion in 1982. Although there are no consumption figures available for the Southwestern U.S., industry sources estimate that consumption could be higher than 20 percent of the national total and could thus be estimated at \$6 billion per annum. This is, in part, due to the fact that the Southwestern area, and particularly California, is the main computer producing area in the U.S. New technology is constantly being developed there and this inevitably leads to a greater awareness of computer possibilities, familiarity with usage, and increased consumption.

There is no obvious shortage in the supply of computer products in the Southwestern market but there is nevertheless a vigorous market for imported products in a wide variety of types. We found that 7.5 percent of the computer systems manufacturers we interviewed* import products in one form or another for inclusion in their systems and that approximately 13.4 percent of all products sold by hardware distributors are imported. The interviews which follow in sections 4, 5 and 6 clearly outline the possibilities. It should not be forgotten that the

* Interviews were confined in the main to U.S. companies.

market is expanding at a rate of 18 percent a year which further increases prospects for exports.

The 1977 Census of Manufacturers' figures for shipments on an individual basis in the Southwestern United States are the latest figures available. Since that year, shipments have tripled in the computer industry and this fact alone renders the 1977 figures completely inoperative. Official figures are available, however, which show that in 1981, 500* computer manufacturers were operating in the market area. This represents an increase of 36 percent over 1977. The increase in the Southwestern U.S. was 6 percent higher than the national average during the same period and as can be seen from Table 3.0, the market area contained 43 percent of all hardware and software manufacturing facilities in the U.S. During the course of the study we determined that Northern California is the largest production center for software. Thirty-nine of the top U.S. seventy-five companies which produce software packages for desk top and home computers are located in the market area. Twenty-three of these companies are located in Northern California, fifteen in Southern California and only one in Colorado.

**Table 3.0
Geographic Distribution of the
Computer Industry in the
Southwestern United States in 1981**

	No. of Employees	Annual Payroll (\$1000)	No. of Establishments
California	100,688	2,353,230	427
Colorado	20,000	undisclosed	25
Utah	4,000	undisclosed	19
Arizona	16,825	389,195	22
U.S. Total	360,000	undisclosed	1,200

Source: U.S. Department of Commerce "County Business Patterns"

* U.S. Dept. of Commerce, County Business Patterns 1981

3.1 COMPUTER PRODUCTION CENTERS IN THE SOUTHWESTERN U.S.

Table 3.0 clearly indicates the major computer production and technology centers in the Southwestern U.S. market. Santa Clara County, approximately forty miles south of San Francisco, is the nation's individual largest computer production area. Most major U.S. and many foreign computing producers maintain production facilities and offices in the "Silicon Valley" area. The rapid growth of Silicon Valley is a phenomenon which has been as spectacular as the growth of the computer industry itself. In 1971, an economic profile of the area listed aerospace as the main industry in the area; no mention was made of the computer industry. Since that time, over 130 computer production facilities have been established in the area, employing a workforce which is in excess of 56,000. The main reason for the substantial development of the computer industry in the

Silicon Valley area was the early establishment of the semi-conductor production industry.

Most major computing systems manufacturing companies act primarily as final assembly operations and buy in most of the components and other peripherals they require on an OEM basis. Thus, substantial continuing business is offered to a variety of suppliers. There is no particular advantage to being located in a specific geographic area when manufacturing consists of assembly. For this reason, the computer industry has spread throughout the Southwestern U.S. as manufacturers have discovered the advantages of "tapping" available labour forces, professional and unskilled, in other areas. Los Angeles, Orange County, and San Diego in Southern California; Phoenix, Arizona; Salt Lake City, Utah; Boulder and Denver in Colorado, are examples. The relative location of these centers is shown on the area map which follows.

There seems to be no reason to regard these areas as specialist production areas although Silicon Valley is the acknowledged leader in semi-conductor production and Colorado has of late become recognized as an information storage center. A number of major information-users have relocated there including Storage Technology Corp., the nation's tenth largest computer manufacturer and a specialist in computer information transferral. We noted in an earlier section that increasing production costs and the desire to remain competitive has forced a number of the early leaders in the industry to move production facilities outside the U.S.*

* Industry analysts predict that this trend will continue.

3.2 MARKET CENTERS IN THE SOUTHWESTERN U.S.

The focal market center in the Southwestern U.S. is the State of California. According to the 1981 census, the State has a population of 23.9 million and contains more than 8.8 million households with an effective buying income of over \$216 million. California is undoubtedly a national leader. Retail sales in California in 1980 totalled \$108.15 billion and equal those of New York, Chicago, Detroit, and Philadelphia combined. In 1981 California produced a total of \$192.3 billion of manufactured goods, an increase of 9 percent over 1980 figures, despite the severe intervening recession. Canadian companies offering specialized computer products to certain segments of the market will note that California has the largest percentage of physicians — 13 percent of the national total; dentists — 11.8 percent; and hospitals — 8.7 percent — of any state in the U.S. In addition, California is the nation's leading agricultural production center. Farm receipts are in excess of \$13 billion and the state's farmers are considered among the most progressive in the nation. Unlike most older eastern market centers, the California market place is highly condensed with over 80 percent of all consumers, commercial businesses and manufacturing confined to two compact and readily defined geographic areas.

The Los Angeles marketing area — has a population of 10.7 million and is the nation's second largest populated center. The Los Angeles area is responsible for half of the economy of the State of California. This intense concentration of consumers and business prospects is contained within an area which has a 60 mile radius centered on downtown Los Angeles. The area consists of Los Angeles County, Orange County and the inhabited portions of three other counties. More than 28,000 manufacturing establishments are contained in the area and employment has consistently increased at a substantially greater rate than the national average. The Los Angeles market area ships approximately 55 percent of the State's total dollar value in manufactured goods and is responsible for 59 percent of California's value added by manufacture total. San Diego lies 108 miles to the south of Los Angeles and is often regarded as an extension of Los Angeles for marketing purposes.

The Los Angeles area with its diversity of industry is one of the world's major markets and offers excellent opportunities for export oriented Canadian computer producers. Los Angeles would make an ideal base for Canadian companies who wish to establish their own marketing and sales operations in the Southwestern U.S. The other centers selected for this study are within easy air travel distance of Los Angeles.

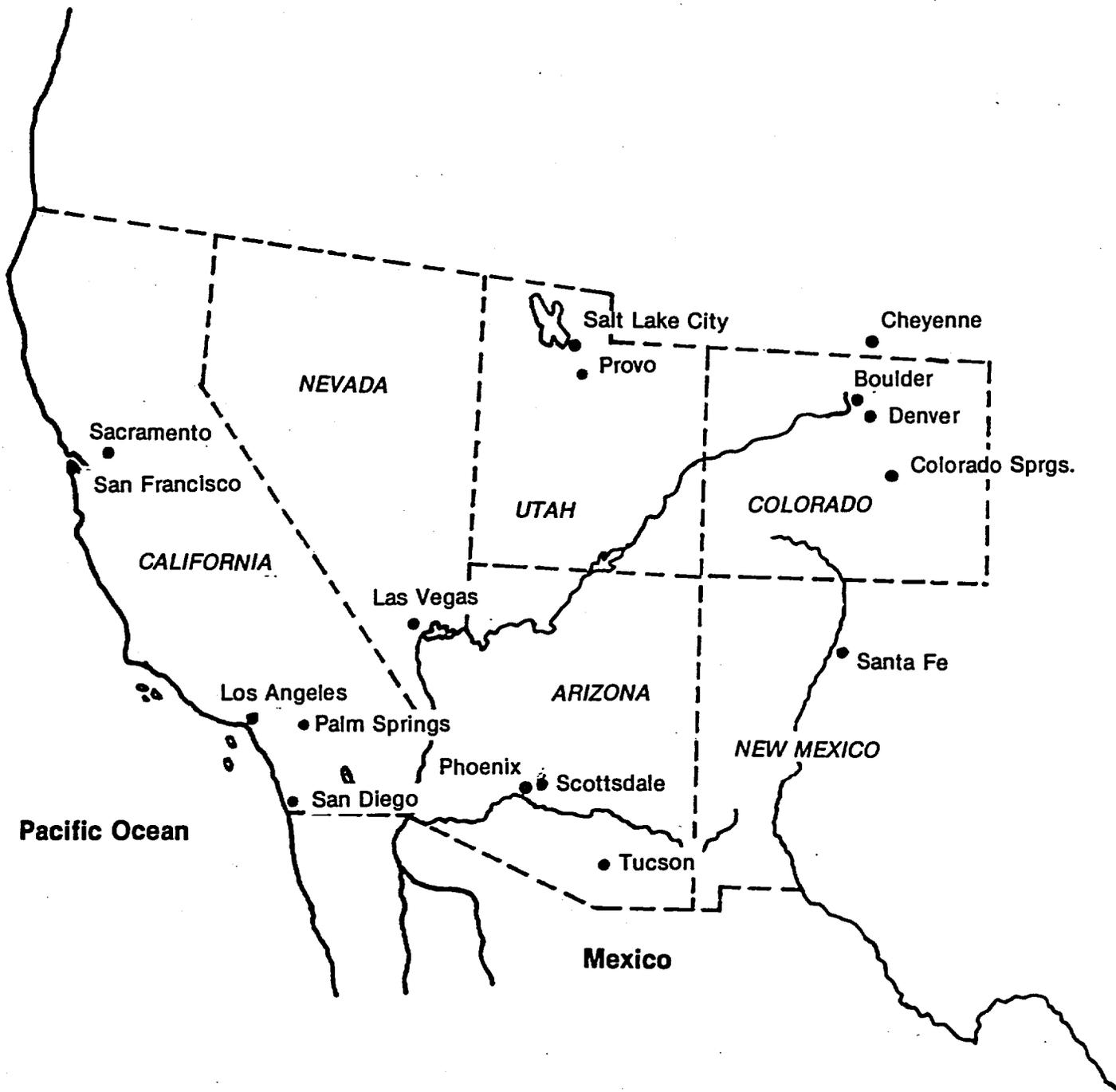
The San Francisco marketing area — has a population of 5.18 million (22 percent of the State's total inhabitants). San Francisco produces approximately 25 percent of California's total manufactured shipments. Industrial growth in most sectors has been somewhat slower than in the Los Angeles region. The San Francisco marketing area contains approximately 8,700 manufacturing establishments and, like Los Angeles, almost all of the population and manufacturing in the area is confined to a 60 mile radius circle centered on the city of San Francisco. The Silicon Valley region is located in the San Francisco marketing area.

By any standards, the State of California can be regarded as a major economy in its own right, having a gross regional product which places it eighth among the world's top ten ranking industrial economies. California is the main employment center in the western U.S. and contains 60 percent of the population of the U.S.'s seven Western States. There can be no doubt that California offers serious export prospects to Canadian computer producers from a commercial, business and a consumer point of view.

Three other states selected for this study are also becoming increasingly important production and marketing centers for the computer industry.

Arizona — with a population of 2.79 million in 1981 lists mining and agriculture among its principal industries but, at the same time, publishing, electronics, metal fabricating, aircraft and missile production are considered an important part of the State's economy. Arizona contains approximately 2,838 manufacturing establishments and shipped

The Southwestern U.S. Market — Major Cities



\$12.4 billion of manufactured goods in 1981. Currently, 16 percent of the population are employed in manufacturing but only 3.8 percent work in the computer industry. There were twenty-two companies involved in computer hardware and software production in 1982 according to the U.S. Department of Commerce. These manufacturers are located in Phoenix and Scottsdale, the two main populated centers. Among these companies are Motorola Semi-Conductor Division with its headquarters located in Phoenix, and Honeywell. These companies collectively employ over 14,000 people. Other major electronics employers in the area are The Garrett Corporation, Sperry Flight Systems, and General Semi-Conductor. Several interviews with Arizona based companies are included in a later section.

Colorado — the population of Colorado was 2.96 million in 1981. The State is located in the central Western U.S.; the location is given on the "market area map" in this section. Principal industries are mining, tourism, agriculture, aerospace, and electronics. Colorado contains approximately 3,707 manufacturing establishments; principal manufactured goods are computer equipment, instruments, food, machinery, rubber and steel products. The State shipped \$17.2 billion of manufactured goods in 1981. Approximately 12.5 percent of Colorado's population is engaged in manufacturing and 4.2 percent of this work force works in the computer industry. There were twenty-five computer manufacturers operating in Colorado during 1981. The main production center in Colorado is Denver where Storage Technologies has its headquarters; Mountain Bell is also located there. A number of computer companies operate in Boulder and Colorado Springs.

Utah — The population of Utah was 1.5 million in 1981. Twenty-two percent of these people are employed in manufacturing but only 1.2 percent of the total manufacturing work-force is employed in the computer industry. Approximately 2,008 manufacturing establishments are located in Utah and the State shipped \$9.3 billion of manufactured goods in 1981. Nineteen computer establishments are listed in Utah; Sperry Univac, Mini-Computer Operations Division is the leading computer manufacturer. Electronic components, guided missiles, primary metals manufacturing and transportation equipment are among the State's largest manufacturing industries. Salt Lake City is the major center for electronics, apparel manufacturing, and mining. The city is becoming a center for energy resources development operations. Interviews with companies in Utah are included in this study.

In conclusion, it is readily apparent that California could be the most viable center for Canadian computer companies wishing to set up a marketing basis in the Southwestern U.S. Readers should consider the section in this report covering market strategies which discusses this question in more detail.

4.0 DEGREE OF MARKET PENETRATION BY CANADIAN COMPUTER MANUFACTURERS

In 1982, the U.S. computer industry was affected by both the recession in the U.S. and by slowed markets abroad. Most U.S. companies showed substantially lower or negative profit growth and some showed a decline in revenues. The industry did, however, experience an increase in demand towards the latter part of the year which resulted in an 11 percent overall increase in shipments. The Department of Commerce estimates that the U.S. computer industry will continue to recover during 1983 and predicts an increase in shipments of 18 percent for the year. This should take the 1983 total for U.S. computer industry shipments to approximately \$40 billion, after adjusting for inflation.

During 1982, U.S. computer imports increased 30 percent to \$2.1 billion which represented 6.1 percent of the supply of new computer products. Industry sources estimate that imports will increase by 35 percent to \$2.9 billion during 1983. The U.S. is the number one market for computer producing countries seeking to expand their exports. While production of computers in the U.S. remains generally strong, expected growth in foreign competition and the emergence of newly industrialized countries in the computer industry is increasingly challenging the U.S.'s position as the world's leading producer. Declining prices in the high volume market for standardized products will also affect the U.S. computer industry's performance resulting in a shift in production, which in turn will stimulate an increasing import market to the U.S.

Although the U.S. industry is seriously concerned with rising imports in the computer field and also by stiffening competition in world markets, Americans do not register concern over the possibility of increased Canadian exports. This is due, in part, to the fact that the U.S. views the Canadian computer industry largely as a subsidiary U.S. operation. Secondly, Americans know that the Canadian Government has not targeted the U.S. computer industry in the same way as the Japanese have done.

4.1 following. The Japanese have continuously benefited from government support and industry targeting, as discussed earlier. Major Japanese activity to the U.S. in 1982 was centered around desktop computers and peripherals, such as, printers and magnetic disk drives.

* Source: U.S. Department of Commerce, Bureau of Industrial Economics

Canadian Contribution to U.S. Imports:

The Canadian computer industry produced a total of \$600 million combined computer products during 1981, which is the latest figure available for domestic production from Statistics Canada. As shown in table 4.0, Canada exported \$623 million worth of computer products during the same year. The reason why there is a substantial difference between recorded production and exports is because the official Canadian export figures include non-computer mechanical accounting equipment together with software, and substantial re-exports and repairs. Statistics Canada was unable to provide any indication of the ratio of computing equipment to non-computing equipment in this figure.

**U.S. Production of Import Trends
1981-1983 (\$billion)***

	1981	1982	1983
Value of U.S. Production	30.5	34.0	40.1
Value of Imports	1.6	2.1	2.9
Imports as a % of U.S. Production	(5.2%)	(6.1%)	(7.2%)

In 1982, the Japanese computer industry drastically increased its exports to the U.S. and replaced Canada which had previously been the leading supplier. Japanese exports to the U.S. in 1982 account for nearly a third of total imports as shown in table

Table 4.0

CANADA'S EXPORT MARKETS FOR COMPUTER PRODUCTS 1981-1982
(IN \$ THOUSANDS)

COUNTRY	1981 VALUE OF EXPORTS	% OF TOTAL CANADIAN EXPORTS	COUNTRY	1982 VALUE OF EXPORTS	% OF TOTAL CANADIAN EXPORTS
United States	419,469	67.3	United States	510,079	71.2
Netherlands	34,640	5.5	Netherlands	42,843	5.0
United Kingdom	25,148	4.0	France	19,193	2.6
Japan	16,140	2.6	United Kingdom	17,931	2.5
France	13,840	2.3	West Germany	14,442	2.1
West Germany	13,578	2.2	Japan	13,849	2.0
Mexico	6,887	1.1	Australia	6,166	.08
Canadian exports to above seven countries				624,503	
Canadian world exports				716,034	

SOURCE: Statistics Canada

Canadian computer world exports in 1982, in the same categories as mentioned above, totalled \$715 million. As shown in table 4.0, Canadian computer exports to the U.S. increased by 21.6 percent in 1982 to \$510 million and accounted for approximately 71 percent of Canadian world computer exports.

Table 4.1 shows Canada's export competitors in the U.S. market. The information presented was selected from the U.S. Department of Commerce "Imports by Commodities" for 1982 and 1983, as defined by TSUSA*. Canada's percentage share of the import market is shown for each of the five TSUSA computer product categories recognized in the U.S. When using table 4.1, please note that TSUSA 6846440 "Telegraph Apparatus" includes telex terminals as well as other products not related to computers; and TSUSA 7244000 "Magnetic Tape and Sound Equipment — recordings not specifically provided for" includes all recorded magnetic media including music tapes. For this reason, the totals can be misleading and therefore the information should be used as a general guide of Canadian competitiveness.

Table 4.1 shows that in 1982 Canada increased her exports to the U.S. in all TSUSA categories listed, but at the same time her market share dropped. Canada's 1981 share of the U.S. computer import market was 24.5 percent whilst her share in 1982

was 18.8 percent. The greatest drop in Canada's market share was under TSUSA 6761500 "Accounting and Computing Machines" where an 11.7 percent loss occurred. (This category includes only complete computer units containing a CPU plus one input and one output device such as a keyboard and a CRT, data processing terminals compatible with all major computer manufacturers, 8 and 16 bit mini-computers, word processing, graphics and portable terminals).

In 1982, Japan's overall market share in the U.S. increased by 35 percent. Increases occurred in Japanese exports for all categories with the exception of TSUSA 7244000 "Magnetic Tape and Sound Recordings", where a 5.8 percent drop occurred. Under this category, the United Kingdom replaced Canada in 1982 as the U.S.'s top supplier. Table 4.1 also illustrates the emergence of computer industries in newly industrialized countries such as Mexico and certain other developing countries who have selected the computer industry as a target sector.

Despite the fact that Canada's overall share in the U.S. market is being seriously threatened, her exports in 1982 showed a healthy increase in dollar value. Intelligent and forceful Canadian marketing, combined with research and development in areas of specialization not currently being targeted by the Japanese, should continue to increase the value of Canadian computer exports.

* Tariff Schedules of the United States

Table 4.1

CANADA'S POSITION AS AN EXPORTER OF COMPUTER PRODUCTS
TO THE UNITED STATES IN 1981 AND 1982 (IN \$ THOUSANDS)

TSUSA CATEGORY	COUNTRY	1981			1982			
		VALUE OF EXPORTS TO U.S.	TOTAL EXPORTS TO U.S.	% OF EXPORTS TO U.S.	COUNTRY	VALUE OF EXPORTS TO U.S.	TOTAL EXPORTS TO U.S.	% OF EXPORTS TO U.S.
TS 6761500 Accounting & Computing machines (com- plete computer systems)	Canada	92,914	234,037	39.7	Japan	110,442	336,213	32.8
	Japan	56,076		24.0	Canada	94,112		28.0
	U.K.	21,445		9.2	U.K.	30,351		9.0
	Singapore	12,600		5.4	Ireland	16,284		4.8
	Italy	9,965		4.3	France	14,566		4.3
	France	9,938		4.2	Italy	11,321		3.4
	Belgium	5,245		2.2	Singapore	7,926		2.4
	Sweden	4,077		1.7	Hong Kong	3,317		1.0
TS 6763030 Data processing Machines (addi- tional peri- pherals)	Canada	168,687	456,205	37.0	Japan	277,577	639,298	43.4
	Japan	120,096		26.3	Canada	185,004		28.9
	Spain	59,984		13.1	Spain	63,734		10.0
	W.Germany	20,305		4.4	W.Germany	20,222		3.2
	Hong Kong	14,082		3.1	China	16,843		2.6
	France	13,778		3.0	Rep. Of Korea	16,435		2.6
	U.K.	13,770		3.0	Israel	12,027		1.9
	Italy	8,884		1.9	U.K.	11,879		1.8
TS 6765230 Parts of data processing machines (parts, board level products, peri- pheral controllers, etc.)	Japan	204,727	948,551	21.6	Japan	434,188	1,319,051	32.9
	Hong Kong	176,004		18.6	Canada	145,699		11.0
	Canada	137,514		14.5	Hong Kong	132,113		10.0
	Mexico	91,291		9.6	Mexico	118,707		9.0
	China	45,822		4.8	China	84,125		6.4
	W.Germany	45,631		4.8	Singapore	81,551		6.2
	U.K.	42,782		4.5	W.Germany	49,699		3.8
	France	41,683		4.4	U.K.	43,123		3.3
TS 6846440 telegraph apparatus (includes telex terminals & other non-computer products)	Canada	5,125	15,630	32.8	Japan	17,918	53,273	33.6
	Japan	4,744		30.4	Canada	16,200		30.4
	Netherlands	1,694		10.8	Netherlands	7,881		14.8
	U.K.	1,608		10.3	W.Germany	5,824		10.9
	W.Germany	1,110		7.1	U.K.	2,051		3.8
	Belgium	618		4.0	Singapore	754		1.4
	Italy	151		1.0	Australia	598		1.1
	Switzerland	138		.9	France	415		.7
TS 7244000 Magnetic tape & sound recordings (software)	Canada	3,232	10,883	29.7	U.K.	6,347	23,353	27.2
	U.K.	1,957		18.0	Canada	5,608		24.0
	Japan	1,460		13.4	Japan	1,769		7.6
	W.Germany	976		9.0	W.Germany	1,687		7.2
	Rep. Of Korea	619		5.7	Netherlands	1,410		6.0
	Netherlands	537		4.9	Malaysia	1,023		4.4
	Mexico	317		2.6	Rep. Of Korea	973		4.2
	Singapore	285		2.9	Belgium	615		2.6

SOURCE: Imports by TSUSA commodities, Department of Commerce

The Market in the Southwestern United States:

We have previously determined that the U.S. imported \$2.1 billion of computer equipment during 1982. However, no official figures are available which show what percentage of these imports are shipped to the Southwestern U.S. We showed earlier that the Southwestern U.S. produced approximately \$14 billion worth of computer equipment in 1982 and that during the same year \$1.4 billion of this production was exported internationally. Neither industry nor government sources in the U.S. are readily able to determine the extent of interstate shipments in the computer industry, or local consumption. Consequently, it is not possible to assess the potential shortfall in the supply of computing equipment in the market area.

The interviews conducted during the course of this study, however, clearly demonstrate a substantial potential market for many of the product areas examined in this study. The export prospects for Canadian products, as discussed later in sections covering systems manufacturers, distributors, and turnkey systems operators, appear to lie more with the distributors and systems houses than with the manufacturers.

The results of our interviews indicate that Southwestern end-users could be interested in Canadian scientific and word processing software (especially data acquisition and process control); graphic, data-processing, portable, word processing, and other terminals; high resolution color terminals with graphics potential; impact and non-impact printers; video backup devices; disk drives and Winchester back-up devices. Southwestern end-users are generally interested in micro computer peripherals. Interviews also indicated that there is a definite interest in higher priced computers with micro-mini overlap capability and that there is also fairly widespread interest in micro based systems, personal computers, high speed multi-plexes, and CRTs. Some companies interviewed expressed an interest in STD Bus peripherals. This is an indication of the potential in the market area.

Forty-six Canadian companies responded to this study but very few of these are listed amongst the top Canadian computer producers. Thirty-four of the respondent companies reported sales of approximately \$8 million in the market area. These companies, however, represent a small cross section of the Canadian computer industry. Undoubtedly, there are other Canadian producers who are already supplying the area and total Canadian exports to the Southwestern U.S. would then logically be substantially higher than \$8 million.

5.0 DISTRIBUTION CHANNELS AND METHODS

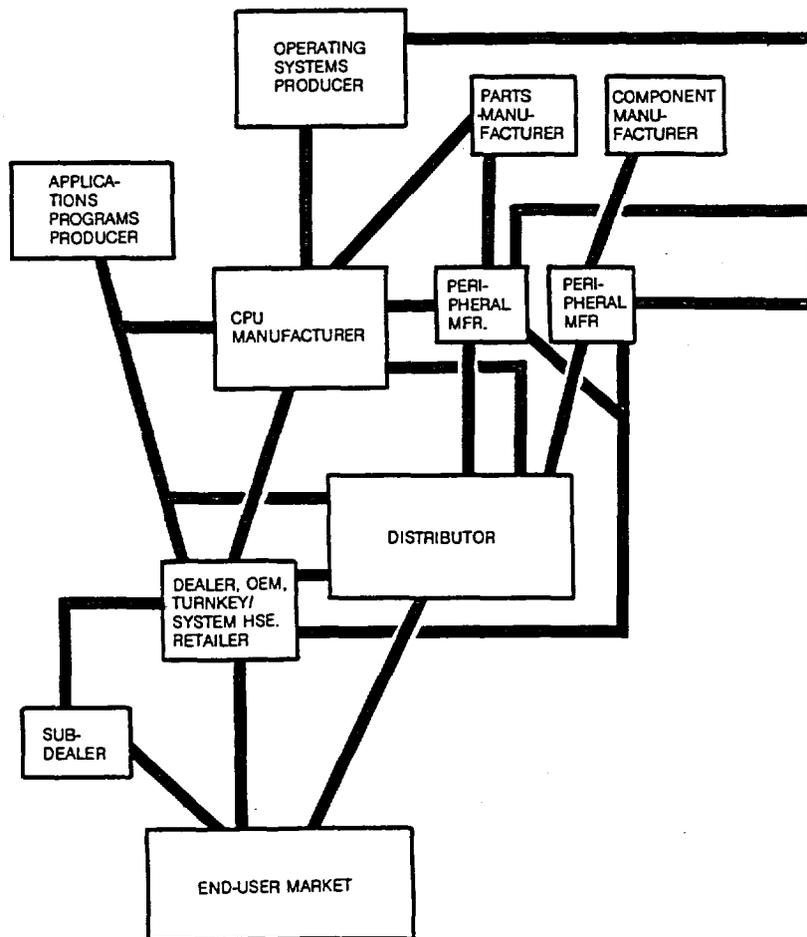
Accepted distribution channels and standard trade practices play an important role in the marketing of any product in a given area. A major objective of this study is to determine the distribution methods in use by the computer industry in the Southwestern U.S. An understanding of the way distribution works in the industry will benefit Canadian companies who wish to market their products in the Southwestern United States.

The computer industry is extremely fragmented. The fast rate of growth in the industry, overlapping technologies, the large number of companies which are involved in every aspect of the industry, and the vast number of products which are now available in most categories have all combined to create a situation

where virtually any company can be involved in any aspect of the industry. In the computer industry, not only do products and technology evolve at a rapid rate but also marketing and distribution methods can change frequently to suit the developing character of the market.

Computer systems manufacturers and software manufacturers, as well as distributors, sales representatives, stocking distributors, dealers, turnkey systems companies, retailers, and even the actual end-user can be involved directly in the distribution chain as can be seen from the chart which follows. In outlining the various distribution choices it has become apparent that it will be up to the individual Canadian manufacturer to select the distribution method which best suits his company and product mixture. There is no definite norm for the computer industry.

BASIC DISTRIBUTION RELATIONSHIPS COMPUTER HARDWARE AND SOFTWARE MANUFACTURING AND DISTRIBUTING



Note: Both computer manufacturers and peripheral manufacturers do sell directly to end-users in some instances

Source: Louch & Associates

Distributors:

Interviews with distributors indicated that approximately 70 percent hold stock of the items they sell. Products held in stock covered a wide range of prices. Distributors generally expect to negotiate a firm sales agreement with the supplier company. The sales agreement will be based on the distributor's own evaluation of the product offered for his market. One distributor, for example, may base his evaluation on projected annual sales of 2,000 floppy disk drives. Manufacturer and distributor will agree that the distributor will receive a structured discount or credit at the end of a set sales period. If the distributor sells at least the full quantity projected, he will receive the maximum sales discount. The selling agreement is usually structured to provide reduced discounts and credits for smaller than projected annual sales. This type of distribution agreement is common when the supplier company has a definite market presence and brand name acceptance.

Distributors are a good solution for companies entering a new market area with little or no brand name acceptance. Lack of capital or marketing expertise could be other reasons for selecting an established distributor. The distributing company itself will have made a critical evaluation of projected salability before agreeing to distribute. One marketing group we talked to advised that they are only interested in selling new products if their market evaluation indicates that the new product could gross a million dollars in sales in the first year.

Canadian companies can use the following as a guide when estimating prices for their products which include distributors' margins: If the product is to be resold in its current form, the list selling price should include a 40 percent margin (10 percent distributor's margin and 30 percent reseller's margin), e.g. list selling price of item = \$168.00, less distributor's margin (\$16.80) and reseller's margin (\$51.20) = ex-factory cost \$100.00. If the product is being purchased as a component by another manufacturer, the list selling price need only include a distributor's margin of 10 percent, e.g. list selling price = \$111.00, less distributor's margin (\$11.00) = ex-factory cost \$100.00. Canadians should also note that distributors may elect to increase their margins with new or untried products. Distributors frequently commented that Canadian companies should consider reducing their prices for an initial period in order to establish their market presence. It may be advisable not to produce a firm printed list price until margins have been thoroughly discussed with prospective distributors.

Non-stocking Distributors and Sales Representatives

Distributors are usually fairly selective about the items they hold in stock. Price is not always the determining factor. In those cases where stock is not held, the distributor essentially acts as a sales representative. Normal procedure, in these cases, will be for the manufacturer to invoice the sale directly to the customer under the direction of the

selling organization. Distributors and sales representatives we talked to indicated that suppliers should include 3 - 7 percent selling commission. The actual commission paid will depend on the size of the order. Distributors indicated that in the case of a sale where they are not directly involved but where their influence has assisted the sale, they would expect a 4 percent commission. Additionally, the commission rate is always negotiated for exceptionally large sales which are not covered under the day-to-day selling agreement. A manufacturer may well be known nationally and internationally yet it is frequently to his benefit to use the specialized contacts a distributor has developed in his market territory. Over 45 percent of the selling organizations we contacted restrict their selling activities to the western U.S. or a smaller portion of the territory specifically to build up their local expertise.

Specialty Retailer

Dealers who specialize in a specific branch of the computer industry often work out of showrooms or offices. This can be the case where the equipment being sold is too large or involved to be demonstrated easily by a salesman on the road. One dealer we talked to had handled a Canadian manufactured CAD/CAM system intended primarily for involved design and drafting work. He found that the only solution was to attract his customers to visit him. Dealers' margins are generally similar to distributors. Dealers usually hold systems samples for demonstration purposes and sometimes stock.

Turnkey Systems Companies

There are approximately 700 turnkey systems companies operating in the Southwestern United States. These companies undoubtedly form an important link in the distribution chain for many computer products and can offer substantial sales or access to additional sales. Most turnkey systems companies would like to purchase computer products directly from manufacturers. This report will clearly demonstrate that turnkey systems companies operate across the complete spectrum of business, professional, and scientific enterprise. The problem for the Canadian supplier seeking distribution by this method, however, is to determine which turnkey systems companies could be suitable to act as distributors. In our opinion, the extreme variation in the numbers of systems installed by the companies we interviewed for this study would make effective selection extremely difficult for Canadian suppliers. The only exceptions could be those turnkey systems companies which operate on a national basis. We suggest that turnkey systems companies should only be approached initially through established regional distributors.

Retailers:

The retailer is a rapidly growing force in the computer distribution cycle. The rise of this industry segment is related primarily to the remarkable success of the microcomputer. Several of the leading retail

chains should be considered seriously by Canadian manufacturers. These retailers may be able to offer the sales volume small and medium size manufacturers require. Retailers report that 25 and 35 percent are the accepted margins for hardware and software respectively. Readers should refer to Section 9 for a more detailed look at possibilities.

Distributors Already Handling Canadian Products:

A number of distributors in the Southwestern U.S. market area are already handling Canadian products. The names of these companies are given in the Appendix. Products currently being distributed include software programs with a range of uses including sophisticated systems software, civil engineering packages, farm management packages, general business packages, medium priced micro-computer systems, and CAD/CAM systems. The degree of satisfaction in sales, service, and support varied from distributor to distributor. Most distributors complimented Canadian quality and technical expertise. Pricing does not appear to be a problem once a specific product or software program appeals to a distributor.

It is apparent that there are product gaps for software programs and also for hardware. One such gap has enabled a Canadian company to introduce its farm management software program. The Southwestern U.S. distributor concerned adopted this program because he felt "it was the best on the market". The company had attracted Canadian shareholders. Other distributors have commenced selling Canadian hardware. Products currently being sold are primarily microcomputers, both in the higher priced personal computer category and in the full business systems category. Although products and service support are largely satisfactory, distributors point out that manufacturers must be prepared to maintain an adequate market program with sufficient capital resources behind them before entering the market place. One Canadian company recently went out of business at a point when the product was proving acceptable. The reason was lack of capital resources.

Sales Direct to End-users:

Many computer and software manufacturers deal directly with corporate end-users. Usually the customer companies are of some size in order to generate the volume of business required to satisfy the supplying manufacturer. Companies wishing to break directly into this segment of the computer market should be aware that brand name awareness is usually a vital ingredient for success in the corporate market. Consequently, we do not recommend this method as an exclusive marketing direction for Canadian companies unless the products are specifically designed for corporate end-use.

Evaluating Distributors:

When introducing a new product, it is vital to move quickly in any new market territory in order to establish presence and market share. This has become an

accepted maxim in the computer industry. Whilst this sounds relatively simple, Canadian new-comers to the Southwestern U.S. market should plan for a minimum of two years of on-going effort when setting up an effective distribution system.

The number of distributors required depends largely on the type of product being sold. This aspect is discussed in the section on market strategies. The primary effort required is centered around finding the right distributor in the market territory for the product under consideration. Once this has been done, the continuing effort revolves around supporting, training, visiting, monitoring, and evaluating the distributor.

We believe extreme caution should be exercised before making a firm distribution agreement with any distributor. If the selection decision is made too hastily, vital points can be easily overlooked. The loss of marketing time resulting from the choice of an ineffective distributor can be extremely costly and damaging. We advise any Canadian company seeking distribution to keep alternative distributors in reserve. U.S. manufacturers have reported that up to 50 percent of the distributors they appointed in new overseas territories proved unsuccessful. For this reason, it is advisable to prepare a standard method of evaluation before meeting with prospective distributors in the field. Main points to cover in such an evaluation include:

- *References* — Southwestern U.S. and possibly Canadian business references together with bank references.
- *Personalities* — Distributor's ability to relate to key personnel in manufacturer's organization. If it is not possible to solve problems constructively at the outset, it will be even more difficult later on.
- *Willingness to get behind the "line"* — Specific personnel to be assigned to product sales. Distributor's technical knowledge and service ability. Level of product training the distributor is actively able to pursue.
- *Financial abilities* — The distributor's ability to set and meet sales targets. Distributor's financial strength.
- *Marketing experience* — Distributor's past experience in marketing similar products in his market area. How aggressive is the distributor; does the distributing company have visibility and presence in the market?

A thorough consideration of the above will provide a sound basis for evaluating potential distributors. Canadian companies who are new in the export field and unsure of their ability to choose a distributor should consider employing a marketing or other specialized consultant to assist in making a decision in this vital matter.

6.0 COMPUTER SYSTEMS MANUFACTURERS

Definition: For the purpose of this study we defined a computer systems manufacturer as being a company of any size shipping in excess of \$1 million of product a year and whose prime purpose in doing business is to construct and market either a portion of or a complete computer system. In its most basic form this can be the production of a CPU, complete with operating system, whilst in the more complete sense of the phrase, the computer systems manufacturer can provide a CPU complete with operating system, terminal work-station, keyboard, and usually disk drives and printer. Computer systems manufacturers either resell under their own brand name or operate as OEMs. Because of the OEM practices which are so prevalent in this fragmented industry we accepted interviews with companies who manufacture peripherals, terminals and a variety of equipment which could be used as a part of the computer system in addition to those companies who manufacture complete computer systems.

The Interviews: According to the Department of Commerce, approximately 40 percent of all computer systems manufacturers operating in the U.S. are located in the Southwestern U.S. California alone contains 30 percent of these manufacturers. Questionnaires were sent to 150 manufacturers in the market area; 44 percent of the companies selected for mailing were located in Northern California, 44 percent were located in Southern California, including San Diego, whilst, approximately 8 percent were selected from Colorado, Utah, and Arizona.

It is clear that both Northern and Southern California are relatively equal in terms of importance as manufacturing centers. Northern California because of the early and continuing lead established in the industry by the Santa Clara, Silicon Valley area, and Southern California because of its larger population and abundant labour pool in the high tech industries. The computer industry in Southern California has, as a result, decentralized to such centers as Orange County and to outlying areas such as Ventura, San Diego, and parts of the San Joaquin Valley.

Companies operating substantial manufacturing facilities in California but headquartered outside the State were also included in the mailing and these companies accounted for approximately 10 percent of the total. Initial results from the questionnaires were somewhat disappointing with only 15 percent of those mailed responding. We had previously determined that we required 30 percent response rate in order to create an effective data base. Consequently, the remaining results were obtained by telephone interviews. Results for the entire group of interviews are presented in a tabulated form in section 6.1. In addition, we have summarized the most significant findings at the end of this section.

6.1 COMPUTER SYSTEMS MANUFACTURERS SURVEY OF RESULTS

Product Information

1. List items you purchase in complete form, with volume, to be sold as a part of your product range, i.e. terminals, data acquisition or storage, disk drives, printers, CPUs, etc.

20% did not answer
10% do not buy any items in complete form
70% buy items in complete form

Disk drives and terminals were the most popular items bought in complete form, followed by printers, CPUs, peripherals and electronic equipment such as circuit boards, resistors and capacitors. Volume figures reported ranged from 18 to 12,000 units per year for disk drives and from 20 to 40,000 units per year for terminals.

2. List representative selection of components purchased for incorporation into your products, i.e. board level products, STD bus peripherals, 8 and 16 bit microcomputers, peripheral controllers, etc., and what sort of volume do you purchase in this category?

42.5% did not answer
5.0% do not buy components
42.5% buy board level equipment such as capacitors, resistors, diodes, conductors and transistors
10.0% buy other components, such as controllers, multiplexers boards, and micro-processor chips

Again, the volume figures reported varied enormously.

3. List software purchased to be sold with your systems, i.e. business, medical, graphics, scientific software, etc.

7.5% did not answer
42.5% answered none
17.5% write all their own software
30.0% buy software

The kinds of software most often bought were word processing, medical, communications, graphics, business/financial and data base management programs and CPM and operating systems.

4. Do you purchase "bought in" products direct from a manufacturer or from stocking distributor?

17.5% did not answer
47.5% buy directly from manufacturers
10.0% buy from distributors
25.0% buy from both distributors and manufacturers

5. Are you experiencing any difficulties in obtaining supplies?
- 15.0% did not answer
 - 52.5% are not experiencing any difficulties in obtaining supplies
 - 17.5% are experiencing difficulties in obtaining supplies and believe that lead times are usually too long and deliveries are often delayed.
 - 15.0% are experiencing occasional problems in obtaining supplies
6. Is price a problem?
- 25.0% did not answer
 - 62.5% replied that price is not a problem
 - 12.5% replied that price is a problem

New Suppliers Information

7. Where do you purchase, i.e. locally, overseas?
- 10.0% did not answer
 - 60.0% purchase locally
 - 7.5% purchase overseas, especially in Japan
 - 22.5% purchase both locally and overseas
8. What percentage of hardware do you purchase as opposed to software?
- 32.5% did not answer
 - average percentage hardware purchased was 96%
9. Do you visualize any changes in your buying patterns?
- 40.0% did not answer
 - 35.0% do not visualize any changes in their current buying patterns
 - 25.0% do visualize changes in their current buying patterns
- Several of the companies who visualize changes in their buying patterns predict that they will be buying and selling larger volumes in the future.
10. Are your suppliers on top of current technological development?
- 65.0% answered yes
 - 10.0% answered no
 - 25.0% did not answer
11. Are you interested in investigating new sources?
- 22.5% did not answer
 - 10.0% answered no
 - 67.5% answered yes
12. Have you looked at Canadian producers as potential suppliers? If so, what was your experience?
- 30.0% did not answer
 - 52.5% have not looked at Canadian products
 - 17.5% have looked at Canadian products

In the last category a number of manufacturers found Canadian products and services completely satisfactory. Several found either the quality, the pricing, or the delivery unsatisfactory while a few companies did not comment.

13. What is the best way for prospective new suppliers to make contact with your company?
- 30.0% expressed no preference
 - 50.0% listed a name (usually the purchasing agent) and a department to contact
 - 20.0% advised potential suppliers to write with product information, call, visit or attend a trade show and, above all, to keep in touch.

Marketing Information

14. Do you handle your own sales directly or through distributors?
- 2.5% did not answer
 - 15.0% sell through distributors
 - 50.0% sell directly to their customers
 - 32.5% sell both directly and through distributors. These manufacturers often sell directly in the U.S. and through distributors abroad.
15. Are there any distributors you can recommend?
- 82.5% did not recommend any distributors
 - 17.5% recommended distributors
- TSF, Miami; Digital Associates, Stamford CT; Moxon Electronics, CA; Nidi-Northwest, Bellevue Washington; Data General Sales, Culver City, CA; and Data Systems Marketing and American Teledata, both nationwide, were among the distributors mentioned.
16. How extensive is your marketing area?
- 5.0% did not answer
 - 22.5% operate nationally
 - 72.5% operate internationally
17. What is the industry buying or likely to be buying in the near future?
- 72.5% did not answer
 - 27.5% listed products of interest
- Some product categories mentioned were personal computers, communications and networking equipment, disk drives, printers, modems and peripherals in general.
18. What is the price range of your products?
- 10.0% did not answer
 - 32.5% sell products for less than \$5,000
 - 40.0% sell products for between \$5,000 and \$50,000
 - 17.5% sell products for more than \$50,000

19. Who are your customers? i.e. Industrial, business, professional, etc.

- 7.5% did not answer
- 17.5% sell to all the groups mentioned
- 7.5% sell to specified groups

All the following groups were mentioned often: business, Fortune 1000, government, professional, commercial, scientific/engineering, education, industrial, manufacturing, banking, OEM, and defense.

20. What sort of business volume do you do?

- 27.5% did not answer
- manufacturers average dollar volume (in millions dollars per year) \$88 million

21. Are you interested in the possibility of joint marketing in some ways with Canadian companies?

- 17.5% did not answer
- 15.0% are not interested in joint marketing with Canadian companies
- 5.0% are already involved in joint marketing with a Canadian company
- 62.5% are interested in joint marketing with Canadian companies

Trade Promotion

22. Which trade publications do you read?

- 60.0% did not answer
- 40.0% listed the trade publications they read

The most often mentioned trade magazines were Electronic News, Computer World, Mini/Micro, Datamation, EDN and electronic journals and business journals (such as Wall Street, Fortune, etc.) in general.

23. Which trade publications do you advertise in?

- 35.0% did not answer
- 65.0% listed the trade publications they advertise in

The most often mentioned trade magazines mentioned were Computer World, Mini/Micro, Electronic News, Datamation, Computer Decisions, business journals and professional journals in the manufacturer's speciality (i.e. medical, travel, publications).

24. Which trade shows do you attend?

- 30.0% did not answer
- 7.5% do not attend trade shows
- 62.5% listed the trade shows they attend

The most often mentioned shows were Comdex and the NCC. Other shows mentioned were Wescon, Siggraph, National Computer Graphics Association, and Telecommunications Association.

25. Do you belong to any professional trade associations

- 55.0% did not answer
- 20.0% do not belong to any professional trade associations
- 25.0% belong to one or more professional trade associations

60.0% belong to the American Electronics Association, the only trade association mentioned more than once.

6.2 THE INTERVIEWS

Interviews from companies contacted during the course of the study are presented on the following pages. A complete list of the companies originally mailed will be found in the Appendix. Readers should note that companies interviewed are not necessarily taken from the list and interviews are not presented in alphabetical order.

DATA PRODUCTS CORPORATION

6200 Canoga Avenue
PO Box 746
Woodland Hills, CA 91365-0746 (213) 887-8206

Barry Kasarda, Director of Corporate Materials (DCM)

Data Products Corporation claimed to be the world's largest independent manufacturer of computer printers. The company operates manufacturing facilities in Chatsworth, San Jose, Irvine and Woodland Hills, California, Wallingford, Connecticut, Milford, New Hampshire, Hong Kong, Puerto Rico, and Ireland. The company currently employs 4,500 world wide. Data Products manufactures printers for the OEM market and brand names produced include Qume, Diablo, and Centronics. In addition to complete impact printers the company also produces printer supplies and components as well as telecommunications and aerospace equipment.

The company purchases from a wide variety of component manufacturers with 60 percent of total purchases being made in North America, 30 percent in Asia, and 10 percent in Europe. Data Products is proposing to influence its customers into providing an annual as opposed to a semi-annual forecast of their requirements in the immediate future. The company maintains a corporate policy of being completely open to new supply sources but has not previously considered Canada as a potential supplier. Mr. Kasarda recommends that interested Canadian component suppliers should visit Data Products purchasing personnel. The company's products are marketed directly and also by utilizing the services of distributors. Mr. Kasarda recommended Kierulff Electronics, Schweber Electronics, Harvey Electronics, and Arrow Electronics as viable and effective distributors.

FORWARD TECHNOLOGY, INC.

2175 Martin Avenue
Santa Clara, CA 95050 (408) 988-2378

Robert Angus, Vice President, Marketing and Sales

Forward Technology, Inc. is a substantially smaller company employing 12 production employees. Despite the small work force, the company projects sales in excess of \$7 million for 1983. The company produces engineering workstations, graphics controllers, and 68K single board computers. Mr. Angus advised that Forward Technology buys in terminals, disk drives and CPUs. On the software side, the company buys in graphics, operating systems and data base management systems. To date, the company has purchased its requirements in the United States. Forward Technology products range in price from complete systems at \$15-40,000 to individual boards at \$4,000. The company's customers are CAD/CAM OEMs, the medical industry and the process control industry.

COMPUCORP

2211 Michigan Avenue
Santa Monica, CA 90409 (213) 829-7453

Ray Chacon, Financial Manager

CompuCorp manufacturing facilities are located in Santa Monica. The company employs 150 people. CompuCorp manufactures computer systems, printers, and word processors and has an annual turnover of approximately \$20 million. Mr. Chacon would not say what range of components the company purchases for incorporation in its computer systems but did say that CompuCorp buys in disk drives, printers and computer furniture. To date, CompuCorp has obtained its requirements entirely in the United States but would be interested in looking at potential Canadian suppliers. The corporation sells 35 percent of its products directly and 65 percent through distributors, and markets its products in the United States, Europe and Africa. CompuCorp's products range from \$2,000 to \$30,000 and clients include commercial and governmental agencies. Mr. Chacon predicts that the company's sales will increase to \$80 million by the end of 1983 and felt that CompuCorp could be interested in the possibility of some form of joint venture activity with Canadian suppliers or manufacturers.

REXON BUSINESS MACHINE CORPORATION

5800 Uplander Road
Culver City, CA 90230 (213) 641-7110

Mr. Bob Love, Marketing Support Manager

Rexon manufactures computer systems. The corporation employs 125 people and has an annual turnover of approximately \$12 million. The company buys approximately 3,000 terminals, 12,000 cypher tape drives and 12,000 disk drives per annum; these

items are both purchased in the United States and overseas. Mr. Love does not know of any previous connections with Canadian suppliers but he feels the company would be interested in new sources of supply and suggests that Canadian manufacturers contact John Leighton who is manager of product development. Rexon purchases business, medical and word processing software for supply with their computer systems. The company's products sell from \$10,000 to \$50,000. Rexon's customers are business and medical groups. Mr. Love is looking for smaller faster disk drives.

BEEHIVE INTERNATIONAL

4910 Amelia Earhart Drive
Salt Lake City, UT 84125 (801) 355-6000

Mr. Warren Clifford, President

Beehive International is a substantial sized company with gross annual sales in excess of \$40 million. The company employs 100 in production and produces terminals and small business computers. Mr. Clifford mentioned a disk drive as a main bought in item. Beehive is a company that has looked into doing business in Canada but discovered a number of disadvantages and has therefore not pursued production there. Beehive is used to purchasing the peripherals and components it needs on the international as well as the domestic market. Currently, Mr. Clifford estimates he purchases 70 percent of his requirement in the United States and 30 percent from other sources. Beehive purchases mainly hardware as opposed to software. Despite Beehive's lack of success as a producer in Canada, the company has purchased in Canada and found the experience satisfactory. Mr. Clifford mentioned that he is interested in investigating new sources. He also mentioned that his company is interested in the possibility of some form of joint marketing activity with potential Canadian suppliers. Beehive products range in price from \$695 to \$15,000 and these products are currently sold in 49 different countries.

AMERICAN MICRO SYSTEMS

3800 Homestead Road
Santa Clara, CA 95051 (408) 246-0330

Mr. Bill Baker, Senior Vice President (Manufacturing)

American Micro Systems belongs to the Gould Group of companies with locations in Santa Clara, Idaho, Korea, Philippines and Austria. The company manufactures customer circuits, memories, micro processors, and connectors at its Homestead Road plant. Mr. Baker declined to supply any information on the products which the company purchases in but did say that American Micro Systems generally purchases the products direct from the manufacturer rather than the stocking distributor. Mr. Baker indicated that the quantities of components the company purchases are generally obtained at the most competitive prices and that the company purchases

from both local and overseas sources. American Micro Systems purchases consist of 90 percent hardware. The company is interested in looking at new sources of supply and would be prepared to buy in Canada provided pricing is competitive; American Micro Systems has no direct experience with Canadian suppliers. Interested Canadian suppliers should write to Mr. Baker. American Micro Systems sells its products in the U.S.A., Europe and Southeast Asia and could possibly be interested in joint venture marketing with Canadian companies. Mr. Baker feels that Canadian companies will need to target a section of the U.S. market and that a major marketing effort will be necessary in order to successfully break into the U.S. market.

MDB SYSTEMS, INC.

1995 N. Batavia Street
Orange, CA 92665 (715) 998-6900

Ms. Lois Leonard, Export Coordinator

MDB Systems manufactures computer systems, peripheral controllers, data communications equipment, and data communications support equipment. The corporation buys in printers, CPUs, processors, and memories as complete units and also purchases the bulk of components it requires for manufacture and assembly of its own products. MDB does not supply any of its systems complete with software and consequently does not purchase any software. The company employs 125 personnel in manufacturing and assembly and the current turnover is in the vicinity of \$20 million.

SIERRA NATIONAL CORPORATION

5037 Ruffner Street
San Diego, CA 92111 (619) 277-4810

Ms. Judy Bernstein, Service Manager

Sierra was established in 1969. The company's current gross annual sales are around \$5 million per annum. The company currently manufactures a series of computers, multiplexers, and programmable collectors. Sierra purchases disk drives, terminals and printers for sale with its own computer systems. Ms. Bernstein listed controllers and memory chips amongst the products the corporation buys in together with some software, for example, Digital Research Operating Systems and MicroPro products. Price is always a problem. To date, Sierra has purchased most of its requirements locally but is interested in increasing purchasing volume and could be interested in looking at potential Canadian sources of supply. Canadian companies interested in supplying hardware should contact Mr. Jim Lind, whilst, those companies offering peripherals should contact Mr. Walt Jones. Sierra handles its own sales exclusively and sells to the national U.S. market. Ms. Bernstein listed retail, wholesale, general business, and service industries as main client groups.

SELANAR CORPORATION

437A Aodo Avenue
Santa Clara, CA 95050 (408) 727-2811

Mr. Robert Gans, Vice President Finance

Selanar currently employs 15 persons in production and the corporation sales are around \$10 million a year. Selanar produces graphics and printed circuit boards for retrofit to Digital Equipment Corporation, Televideo, and Lear Siegler Terminals. The corporation buys in terminals and CRTs (tube and yoke). Components purchased include proms, Ic's, resistors, cables, etc. To date the corporation has not purchased any software to be sold with its own products but is willing to consider the concept. In line with this thinking, Selanar is interested in looking at new sources of supply and Mr. Gans suggested that Canadian companies contact the purchasing agent at Selanar. The corporation handles some of its own sales but uses distributors in some cases and markets in both Europe and North America. The price of Selanar's products ranges from \$300 to \$1,500. Selanar markets its products exclusively to users of Digital Equipment Corporation, Televideo, and Lear Siegler Terminals. Mr. Gans said that the company could be interested in the possibility of investigating joint marketing with a Canadian supplier.

ZENDEX CORPORATION

6644 Sierra Lane
Dublin, CA 94568 (415) 828-3000

Mr. Robert Livermore, Chairman

Zendex manufactures microcomputer systems, disk equipment, peripheral controls, memory devices, and multi-bus boards (CPU, disk control). The company currently employs approximately 40 persons in assembly and has an annual turnover in excess of \$4 million. Zendex buys in disk drives and terminals amongst other items. Mr. Livermore stressed that his company manufactures 8 and 16 bit multi-bus boards (he does not manufacture STD bus). Zendex occasionally buys in memory boards from outside sources. The only software purchased is operating systems CPM, MPM, RMX, etc. Zendex purchases directly from manufacturers and also from distributors. Currently, all products purchased for inclusion in Zendex systems come from the Southwestern United States and 85 percent of those purchases consist of chips. The company is always interested in looking at new sources of supply. Prospective Canadian suppliers should write or call. Zendex's products range in price from \$10,000 to \$30,000 and Mr. Livermore mentioned IBM, Chesborough Ponds and Los Alamos as existing clients. Zendex would be interested in the possibility of investigating joint market with Canadian companies.

NESTAR SYSTEMS, INC.

2585 East Bayshore Road
Palo Alto, CA 94303 (415) 493-2223

Ms. Grace Matias-Myers, International Sales Director

Nestar manufactures disk equipment, magnetic tape equipment and data communications equipment. The company specializes in local area networks that support IBM, Apple II and Apple III systems. The company buys in hard disks and drives and considerable quantities of boards. Nestar develops some of its own software but not applications software. All bought-in products are purchased directly from manufacturers. Generally, Nestar buys on a 12 month purchase projection and the final price depends on how much they purchase during that 12 month period. All bought in products are purchased in the United States. Ms. Myers mentioned Prime and Archives as examples of suppliers and advised that her company has not so far looked at Canadian producers as potential suppliers because she believes 60-137 megabytes which Nestar uses are not made in Canada at this time.

Canadians who feel they have something to offer Nestar should contact Mr. Stan Khanna, V.P. Operations. Nestar sales are in the vicinity of \$10 million. The corporation handles sales directly in the U.S. and internationally but maintains a research and development office in London, UK, which also handles European sales. Nestar's software networks generally cost from \$35,000 to \$100,000 per unit depending on the number of stations involved. The company's clients are banks, insurance companies and major corporations such as Rockwell, Honeywell and GSA. Ms. Myers expressed an interest in the possibility in marketing one Canadian computer in the United States providing it was compatible with their own systems and she said that finding a compatible computer system was a high priority item for her.

SYSTAR CORPORATION

1762 Technology Drive, Suite 208
San Jose, CA 95110 (408) 280-7066

Ms. Dorie Filipini, Director of Marketing

Systar manufactures networking products, communication front-end processors, and multiple host switching equipment suitable for mail distribution. The company has developed its own software packages but does purchase complete hardware packages directly from manufacturers such as IBM. To date, all products have been purchased locally. Systar concentrates its marketing mainly on large corporate end-users. Products range from \$22,000 to \$50,000. This company has a relatively small turnover and did not express any interest in communicating with Canadian suppliers.

TRILOG INC.

17391 Murphy Avenue
Irvine, CA 92714 (714) 549-4079

Mr. Phil Zarro, West Coast Regional Sales Manager

Trilog produces line printers. The company currently

manufactures 50 machines per month and expects to increase production to 100 units per month at the end of 1983. Turnover is in the vicinity of \$5 million. Trilog only purchases components consisting of sub-assemblies, circuit boards, electrical assemblies, and enclosures. 60 persons are employed in assembly. To date, Trilog has purchased all of its requirements in the Southwestern U.S. but is interested in investigating new potential supply sources and Mr. Zarro suggested that Canadian companies should approach Mr. Mark Tribolet, Director of Purchasing. Most of the company sales are so far being made through distributors and independent sales reps. Mr. Zarro recommended Moxon Electronics in California and Nidi/Northwest, in Belview, Washington as potential distributors. The company's products sell from \$3,900 to \$4,900 and main customer groups are involved in data processing. Mr. Zarro felt that his company could be interested in the possibility of joint marketing with Canadian companies providing the Canadians manufactured compatible equipment and suggested any interested Canadian company should contact Mr. Tom Smith, Trilog's Director of International Marketing.

DUAL SYSTEMS CORPORATION

2530 San Pablo Avenue
Berkeley, CA 94702 (415) 549-3854

Ms. Joan Stibeis, Marketing Director

Dual Systems appears to be growing rapidly; sales have doubled every seven months and the company's annual volume has increased from \$2 million in 1982 to \$7 million this year. Dual manufactures computer systems, disk equipment memory devices and data communications support equipment. Dual's computer model #8320 is capable of 20 MB of disk storage. The company is planning to produce a computer with 80 MB storage in July this year. Dual purchases a wide range of peripherals and they are experiencing some difficulties in obtaining Fujitsu disks from Memorex. The company is interested in selling its products on an OEM basis. Ms. Stibeis listed scientific and academic software developers among their major clients.

PLESSEY PERIPHERAL SYSTEMS

17466 Daimler
Irvine, CA 92714 (714) 540-9945

PLESSEY CORPORATION

277 Park Avenue
New York, NY 10172

Mr. Dale McIver, Vice President Corporate Development

Plessey Peripheral Systems is a member of the Plessey Group. The corporation employs 30 to 40 personnel at its Irvine location.

Plessey Peripheral Systems manufactures computer systems, disk equipment, magnetic tape equipment, memory devices, and data communications equip-

ment amongst other products. Mr. McIver listed printers, terminals, and tape and disk drives amongst the complete items the company buys in and PC boards amongst the components the company buys in. In addition to buying in complete hardware components, Plessey also purchases software in the form of word processing, and medical and communications software. Generally, the company purchases the products it requires directly from a manufacturer. Mr. McIver mentioned that the supply problems with Digital Equipment Corporation had alerted him to the danger of depending on single sourcing. The company places its main emphasis on purchasing domestically whenever possible but has purchased terminals in Korea and Japan. Mr. McIver listed hardware items as comprising 80 percent of total corporate purchases and software as comprising 20 percent. Mr. McIver expressed an interest in considering Canadian suppliers as potential sources and said that to date he had received no significant offers from Canadian suppliers. Mr. McIver suggested the best method for Canadians to contact Plessey was directly through the purchasing manager at each facility. Plessey Peripheral Systems does approximately \$50 million worth of business annually. Their main client groups are business, educational, commercial, and government agencies. Plessey could be interested in the possibility of doing some joint marketing with Canadian companies. Mr. McIver stressed that Canadian companies planning to tackle the U.S. market must realize that investment in setting up a service and sales organization in the United States would be an essential prerequisite to successful business.

COMPUTER PRODUCTS MARKETING INC.

12624 Daphne Avenue
Hawthorne, CA 90250 (213) 754-8250

Mr. Anthony F. Coppola, President and
Vice President Marketing

Computer Products Marketing manufactures memory devices e.g. IBM plug compatible, and Univac compatible. Mr. Coppola listed terminals, memory and power peripheral amongst the complete products his company buys in. Computer Products also purchases in board level components, but does not buy in software. The company has no preference for buying locally or overseas but could be interested in discussing prospects with Canadian suppliers. Mr. Coppola felt that computer trade shows could provide a viable way for Canadian companies to make contact with his company. Computer Products Marketing has an annual turnover in the vicinity of \$10 million. The company sells directly and also through distributors and recommended Digital Associates, Stamford, Connecticut as a distributor.

COMPUTER SCIENCES CORPORATION (INFONET GROUP)

1200 E. Grand Avenue
El Segundo, CA 90245 (213) 615-0311

Corporate Headquarters:

INFONET GROUP

650 N. Sepulveda Boulevard
El Segundo, CA 90245

Mr. L.D. Amdahl, Director of Advanced Engineering

Computer Sciences Corporation's gross annual sales are in excess of \$630 million. A total of 14,000 persons are employed and approximately 300 persons are employed in product development and support alone. The company produces teleprocessing services (CSC-owned large host computers), communications network (including value added services) and end-user equipment (CSC supplies micros and some minicomputers). CSC offers substantial prospects to suppliers. The following products and components represent a selection of items the company purchases every year: mainframe computers (large and medium scale 2-3 per year); minicomputer systems (few per year); 8 and 16 bit micros (500 per year); serial printers (300 per year); modems (600 per year); 5¼ inch subsystems (400 per year); microcomputer board products (800 per year); line printers (10 per year); multiplexers (60 per year); X.25 protocol converters (100 per year). In addition, the corporation purchases the following software used with micros: communications emulators, operating systems, language packages, data base packages, spread sheet packages and financial applications. The corporation also purchases various mainframes and system software and application packages.

The CSC buys 80 percent of its requirements direct from manufacturers and is experiencing serious delays in obtaining new products. Mr. Amdahl advised that price is important to CSC and that the corporation generally buys major items on a discount basis. To date, CSC has purchased the bulk of its requirements in North America. CSC buys 75 percent hardware and 25 percent software and visualizes its software requirements will increase in the near future. CSC has had considerable experience with Canadian suppliers and has purchased the following Canadian products: specialized terminals, display terminals, modems, protocol converters and software. Interested Canadian suppliers should contact corporate purchasing. Hardware evaluation is carried out by the corporation's engineering departments whilst system software evaluation is controlled by the corporation's software development department. Mr. Amdahl recommended that Canadian companies should contact the CSC systems group at Fallschurch in Virginia. He felt that the computer industry in the United States would be increasing its purchases of micros, printers, modems, and video text terminals. Most of CSC's products are leased and leasing costs range from \$300 to \$3,000 per

month for hardware. Major customer groups consist of business and industrial companies, banks, insurance companies and professional organizations.

AMF GEO SPACE CORPORATION

5803 Glenmont, PO Box 36374
Houston, TX 77081 (713) 666-1611

Mr. Bruce A. Boyd, President

AMF, INCORPORATED

777 Westchester Avenue
White Plains, NY 10604

AMF is headquartered at White Plains, New York. We spoke to Mr. Boyd at the Houston location. AMF manufactures graphic equipment including sensor products, image recording systems (digital plotters and plotting systems), and data display units. The company's purchasing pattern for complete units is as follows: terminals (20 per year), disk drives (18 per year), tape drives (10 per year) and plotters (10 per year). AMF also purchases the following components: tape controllers (20 per year), multiplexer boards (20 per year) and miscellaneous PC board assemblies (40 per year). The bulk of the company's requirements are purchased locally in the United States. Price is a key selection criteria. The company purchases approximately two-thirds of its requirements direct from manufacturers and one-third from stocking distributors.

The company produces its own software system specifically to cater for the highly specialized needs of its clients. Mr. Boyd advised that AMF is developing a new line of equipment which will considerably increase the volume of items the company purchases. Mr. Boyd considers AMF is working with the major suppliers in his field who are in the main the leaders in technological development. However, he is interested in looking at new supply sources. To date, he has had no experience with Canadian companies. Mr. Boyd suggested Canadian companies should contact his purchasing department and they would then be put in touch with corporate engineering. AMF markets their products on a world wide basis with an annual turnover in the vicinity of \$20 million. The company handles all of its own sales directly and products range in price from \$8 to \$5 million.

AMDAHL CORPORATION

1250 East Arques Avenue
Sunnyvale, CA 94086 (408) 746-6000

Mr. Vern Smith, Vice President Manufacturing

Amdahl Corporation had gross annual sales in excess of \$300 million in 1981. In that year, Amdahl achieved a 2 percent share of the mainframe computer market. Amdahl Corporation manufactures computer systems, disk equipment, and data communications equipment. Mr. Smith advised that Amdahl purchases a number of complete items

including front end processors - 200 units/year; and disk storage subsystems - approximately 2,000 units/year. In addition, the company is a major component purchaser and buys \$50 million of semi-conductors, \$18 million of printed circuit boards, \$6 million of connectors, \$8-9 million of back panels, \$3-5 million of cable assemblies and \$16 million of pre-packaged power supplies each year.

Amdahl does not supply any software with its computer systems. The company buys 40 percent of its requirements in Japan and has a strong relationship with Fujitsu. The remaining 60 percent is purchased in the United States. Mr. Smith advised that Amdahl is, however, becoming increasingly inclined to buy its requirements close to its home base. He also said that his company sources its requirements from a number of different manufacturers. For this reason there may be business for Canadian suppliers. Amdahl has had experience with one Canadian source, whom it considered to be extremely reliable.

Amdahl markets its products on a world wide basis. The company's products range from \$1.5 million to \$4.5 million. It is expected that Amdahl's top priced product will shortly sell for in excess of \$6 million. The company finds a great number of its clients among the Fortune 1000 companies. Interested Canadian companies should contact Mr. Bill Jastrow, Director of Purchasing. Mr. Jastrow mentioned that Amdahl had recently contacted a number of companies in Japan, England and Canada and had asked them to bid for a contract to supply printed circuit boards with a high standard of tolerance. Bids have been received from all three countries but, Mr. Jastrow pointed out, only five of the twelve Canadian companies he had contacted had responded. Mr. Jastrow felt that four of the five Canadian companies had either substantially overpriced their bids or had requested that Amdahl should reduce their required tolerances. Only one Canadian company was attempting to meet the bid in terms of quality and price.

TELECOM TERMINAL SYSTEMS

3903 Grand View Boulevard
Los Angeles, CA 90066 (213) 390-9494

Mr. Len Winters, Vice President Marketing and Sales

Telecom Terminals is a relatively small company with a turnover in the vicinity of \$2 million. The company produces communications equipment which consists mainly of telex, twix, and airline reservation systems equipment. Mr. Len Winters V.P. of marketing and sales advised that the company purchases printers and CRTs to supplement its own production, while components purchased consist of microprocessors, chips and several others. Telecom produces its own software exclusively but buys in the products it needs from both manufacturers and stocking distributors. Pricing is considered a critical element in all purchases. The company is experiencing some pricing difficulties with some of the components or complete products it buys at present. Telecom has purchased both local and imported products but

generally tends to deal strictly with importers and distributors. Telecom has dealt with at least three Canadian suppliers in the past and mentioned one or two quality problems. Currently the company markets its products exclusively in the United States and Venezuela but is looking for other markets. Products range in price from \$2,400 to \$4,500 and main customer groups serviced are travel agents and other varied professional groups. Interested Canadian suppliers should contact Mr. Len Winters.

SYSTEMS GROUP

1601 Orange Wood
Orange, CA 92668 (714) 633-4460

Mr. Dave Jenoff, Vice President for International Marketing

Systems Group manufactures a family of business micro computers, digital computers, magnetic tape equipment, word processors, peripheral controllers, and various memory devices. The company's sales are currently in the vicinity of \$6 million a year. Systems Group buys in complete peripherals but Mr. Jenoff did not give any details of the type of peripherals purchased. In addition, the company buys in blue chips at a rate of about 1,500 per year. Systems Group buys in CP/M, MPM, and Oasis Software Systems. In addition the company has developed its own software system called "Business Express." Generally Systems Group likes to purchase directly from a manufacturer wherever possible. To date all products purchased have been obtained locally. Mr. Jenoff mentioned SESCO, as a potentially viable Canadian distributor in Canada. Systems Group markets its products nationally and prices range from \$3,000 to \$20,000 per system. The Company is interested in meeting potential Canadian suppliers and discussing business prospects generally. Contact should begin with Mr. Ralph Sasser, General Manager and V.P. of Operations.

KONTRON ELECTRONICS

630 Price Avenue
Redwood City, CA 94063 (415) 361-1012

Mr. Tom Curfman, Sales Engineer

Kontron currently employs 100 persons in production. The company manufactures computer systems, I.E.E.E. instrumentation, proms, logic analysers, and software development systems. Mr. Curfman indicated the company could be interested in buying disk drives. The company purchases its requirements locally in the U.S. and overseas and is always interested in reviewing new potential supply sources. Canadian companies should contact Mr. Carrie Ford who is their purchasing agent. The company handles its own sales in the United States and uses distributors overseas; Digidyne in Canada is Kontron's Canadian distributor. Kontron markets internationally and its products are priced from \$3,000 to \$200,000. Sales are currently in the vicinity of \$6 million. Mr. Curfman listed OEMs, instrumentation manufac-

turers, designers and software writers as among the corporation's major customer groups.

GRINNELL SYSTEMS CORPORATION

6410 Via del Oro Drive
San Jose, CA 95119 (408) 263-9920

Order Administrator

Grinnell Systems Corporation manufactures computer peripherals, graphic and imaging processing systems hardware. The company purchases monitors. Grinnell develops its own software. Products sold range from \$20,000 to \$80,000 and main customer groups consist of universities, the animation industry such as Hanna-Barbara together with high technology industries. Potential suppliers should direct their enquiries to the purchasing department. Grinnell is also interested in joint marketing on an OEM basis.

6.3 SUMMARY

Over 60 percent of the manufacturers we contacted are interested in new supply sources. Manufacturers expressed an interest in a large range of products ranging from complete peripherals to systems software, components and sub-assemblies, and packaged software. Canadian companies should read the interviews in Section 6.2 to get a fully rounded idea of prospects for their products. Most Southwestern manufacturers buy from domestic sources but are open-minded on imports. The majority of companies contacted have not yet considered buying Canadian products although 17 percent are aware of Canadian producers and have looked at a variety of Canadian products in one form or another.

Canadian suppliers will need to be competitive if they wish to supply Southwestern U.S. computer systems manufacturers. It is clear that U.S. customers will respond more favorably to those companies which establish effective selling, distribution, and service facilities in the market area. U.S. customers see Canadian presence in the Southwestern U.S. marketplace as an effective way of insulating themselves from problems caused by Canadian customs and mail services. These problems were stressed by manufacturers, distributors, and turnkey systems companies contacted for this study. At the same time, companies from all three groups were interested in the possibilities offered by two-way trade with potential Canadian suppliers. We recommend that Canadians consider this aspect carefully; it is indicative of a growing mood among U.S. manufacturers to counter increasing imports. Those companies who are able to establish an effective trading relationship could find a two-way arrangement most advantageous.

7.0 TURNKEY SYSTEMS OPERATORS

Skilled technicians and programmers have always been at a premium in the computer industry. As the industry has grown, several classes of specialists have emerged including the consultant, systems houses or turnkey systems operators (which will be referred to as "turnkey systems companies" from now on), the computer retail store, the software center, and the most recently recognized class of specialist, the computer "whiz". These specialists have emerged largely because of inadequacies in the education and servicing system provided by computer manufacturers. (The computer retail house and software centers are discussed in a separate section). Consultants, and lately computer "whizzes" fill a specific niche mainly where personalized computer installations and exceptional service are required. Turnkey systems companies, on the other hand, can often offer computer or peripheral manufacturers an effective market avenue. Canadian companies who intend to work with turnkey systems companies should be aware, however, that sales volume can often be relatively limited in many cases.

There are a large number of turnkey systems companies currently operating in the United States. Approximately 700 of these work in the Southwestern United States market territory and a number of these companies operate on a national basis. Turnkey systems companies we interviewed, however, proved to be relatively small sized establishments in the main employing only a limited number of sales personnel. Initially, turnkey systems companies begin as low overhead operations. Little or no investment needs to be made in stock. The founders of most turnkey systems companies usually have viable connections with one or more computer systems manufacturing companies or peripheral manufacturers. As companies grow, they may hold stock of some key items. Turnkey systems companies we contacted operate various sized market territories. The largest percentage (34.3 percent) of companies interviewed sell on the West Coast or operate smaller territories. Generally, turnkey systems companies operate in a market territory which is confined to one day's drive. This effectively cuts the cost of sales substantially.

Turnkey systems companies' business is usually based on selecting complete computer systems or networks generally constructed from component units supplied by a number of manufacturers. Part of the key success for the turnkey systems company is in the supply of the software system. Usually these companies develop their own specific software for the system they sell. The underlying object of the turnkey system company is to supply the potential user with a fully installed computer system complete with operating software specifically designed to meet the clients' particular requirements. Many turnkey systems companies work primarily with specific industries or professional groups.

For this study, we selected 150 turnkey systems companies. They were mailed a set questionnaire.

We determined that demographic trends play a significant role in turnkey systems companies' locations. For this reason, we mailed 43 percent to companies in Southern California and 30 percent to companies in Northern California. Mailings were concentrated on companies with a turnover of more than \$1 million. It should be noted, however, that the rapid growth patterns which typify the computer industry make it possible for a turnkey systems company starting business today to achieve major status within a very short period of time.

The initial mail return was 11 percent. This return was supplemented by intensive telephone interviews bringing the final total to 25 percent. A number of companies were interviewed which were not on the initial mailing list. The full list of companies mailed is listed for reference in the Appendix. The results of the survey follow in Section 7.1.

7.1 TURNKEY SYSTEMS OPERATORS SURVEY RESULTS

Product Information

1. Do you buy direct from a manufacturer or through a distributor?
 - 48.6% buy direct from manufacturers
 - 5.7% buy only through distributors
 - 37.1% buy both through distributors and directly from manufacturers
2. Are you experiencing any problems with your current suppliers, i.e. in available technology, pricing, delivery, service, etc.?
 - 52.8% were satisfied with their current suppliers
 - 8.3% did not answer
 - 38.9% were experiencing problems with their current suppliers, of these;
 - 7.2% complained about available technology
 - 21.4% complained about pricing
 - 64.3% complained about delivery
 - 7.1% complained about service
3. What level of service support do you expect from your suppliers?
 - 8.6% said they do not rely upon suppliers for service support
 - 80.0% explained their expectations as follows:
 - 25.0% said they expect complete support in terms of full repair/replacement
 - 28.6% said they expect "prompt" or "immediate" attention (i.e. within 24 hours)
 - 10.7% said they expect suppliers to train company personnel
 - 7.2% said they expect 30 to 60 day lead times

The remaining 28.5 percent had various requirements such as on site availability, local service stations, and close consultation during installation. One company expects that products bought

perform well with little servicing; another explained that its service expectations depend on the product and its price.

4. Do you service the equipment you sell yourselves?

- 54.3% do service their products themselves
- 31.4% do not service their products
- 8.6% service their products sometimes
- 5.7% did not answer

5. What is the cost of your average installation?

- 14.3% answered \$1,000-\$10,000
- 22.3% answered \$10,000-\$30,000
- 37.0% answered \$30,000 and above (highest answer \$2,000,000)
- 25.7% did not answer

**6. How many installations do you complete in one year?
in each category:**

Category	Average #	High	Low
\$1,000-\$10,000	141	320	10
\$10,000-\$30,000	125	400	12
> \$30,000	28	105	2

7. What percentage of your sales is hardware as opposed to software?

average answer: 54.5% hardware
 extremes: 0.0%
 100.0%

8. Do you operate in a specific geographic area?

- 5.7% did not answer
- 17.1% operate nationally
- 17.1% operate nationally and in Canada
- 11.4% operate nationally and internationally
- 20.0% operate only on the West Coast
- 14.3% operate in specific areas such as a single state or part of the state, or a foreign country (i.e. Japan)
- 14.3% do not operate in a specific geographic area

9. Do you aim at specific groups, i.e. commercial, business, professional, etc.?

- 5.7% did not answer
- 17.1% do not aim at specific groups
- 77.2% do aim at specific groups

The groups most often mentioned were business, commercial, government and manufacturing. Other groups mentioned were professional, accounting, medical, agricultural, banking, insurance, and construction.

**10. How many salesmen do you employ?
How many do you have on commission?**

8.6% did not answer
 average number of salesmen: 8
 high: 128

low: 0
 77% of the salesmen employed are on commission.

11. Please check the product categories which interest you?

- 5.7% were not interested in any of the categories
- 17.1% did not answer
- 77.2% checked the categories which interested them and made a total of 59 checks

of these 59 checks,

- 5.1% were for board level products
- 8.5% were for peripheral controllers
- 25.4% were for graphic/business/scientific and word processing software
- 16.9% were for graphic/non-impact/data processing/portable/telex and word processing terminals
- 10.2% were for STD BUS peripherals
- 33.9% were for 8 and 16 bit microcomputers

12. Would you like more information on any of the product categories you have checked?

- 68.6% answered yes
- 14.3% answered no
- 17.1% did not answer

13. Could you be interested in the possibility of formulating a joint marketing venture with a Canadian manufacturer?

- 80.0% answered yes
- 11.4% answered no
- 8.6% did not answer

14. Would you be interested in attending government sponsored seminars to learn more about Canadian capabilities?

- 45.7% answered yes
- 31.4% answered no
- 22.9% did not answer

15. Have you dealt with Canadian companies before? If so, what has been your experience?

- 51.4% said they had not
- 14.3% did not answer
- 34.3% said they have dealt with Canadian companies

of these

- 75.0% said it was positive experience and that they were satisfied with Canadian products and service
- 25.0% said it was a negative experience and explained that their dissatisfaction was partially due to long customs delays

16. Which trade publications do you read?

- 14.3% do not read any
- 8.6% did not answer
- 77.1% do read trade publications

The magazines most often mentioned were Computer World, ISO World, Computer News, Computer Systems News, and Byte. Computer Decisions, Info Systems News, Info World, Hard Copy, Electronics, Minimicro World, and MIS Weekly were also mentioned more than once.

17. Which trade publications do you advertise in?

- 31.4% do not advertise in any trade publications
- 20.0% did not answer
- 48.6% do advertise in trade publications

Computer World was by far the most often mentioned computer magazine. Many companies advertise in specialist publications such as banking, transportation, hotel, government, or broadcasting magazines.

18. Which trade shows do you attend?

- 17.1% do not attend trade shows
- 11.4% did not answer
- 71.5% do attend trade shows

Comdex and the NCC Show were by far the most often mentioned trade shows. Several companies only attend local shows or shows which cater to their specialist selling market, such as, accounting, medical, or agricultural shows.

19. Do you belong to any professional trade associations?

- 45.7% do not belong to any trade associations
- 17.2% did not answer
- 37.1% do belong to trade associations

The most often mentioned trade associations were ADAPSO and AEA. Most companies belonged to associations or professional groups catering to their specialty.

7.2 THE INTERVIEWS

Interviews with turnkey systems companies contacted during the course of the study are presented in this section.

THE BRINER CHASE GROUP

4685 Highland Drive, Suite 208
Salt Lake City, UT 84117 (801) 272-8601

Mr. Randy Chase, Vice President Marketing

Briner Chase Group's turnover is in the vicinity of \$1 million. The company exclusively uses Kado systems hardware; has an OEM agreement with Kado. Briner Chase specializes in turnkey systems for the broadcast and communications industries selling their systems in the main to radio and TV stations. For this reason the company operates on a national basis and has completed installations in 36 states of

the United States as well as in several other countries. The average cost of the Briner Chase installation is approximately \$30,000 for hardware and software package inclusive. The ratio of hardware to software is approximately 65 percent to 35 percent respectively. The company currently employs three salesmen who operate on commission.

Mr. Chase expressed an interest in Canadian 8 and 16 bit microcomputers and said that he would also be interested in obtaining any information on computer systems or peripherals that are compatible with universal operating systems such as CP/M, Oasis, etc. Briner Chase has dealt with one Canadian company and would be interested in reviewing other Canadian products. Mr. Chase advised that his company attends the National Association of Broadcasters and the National Radio Broadcasters Association shows together with selected broadcast conventions in a variety of states.

MARFAM CORPORATION

5340 Thornwood Drive
San Jose, CA 95123 (408) 226-0170

Mr. John Marler, President

Marfam uses the following company's products in constructing its turnkey systems: OSM, Altos, Kaypro, Osborne, Franklin, Radio Shack, Columbia, Eagle and NEC. Marfam purchases the products it sells both from distributors and manufacturers. Mr. Marler claimed that delivery is always a problem. He said that his company's average installation was in the vicinity of \$15,700 and that approximately 70 installations are completed a year. Marfam operates with seven commissioned salesmen and has traditionally found its market in Northern California but has recently opened an office in Los Angeles. The company's main customer groups are business and commercial operations and Marfam is equipped to service the equipment it sells. Mr. Marler said his company requires full repair and replacement service support from its suppliers.

Mr. Marler expressed an interest in Canadian 8 and 16 bit microcomputers, software packages (mainly aimed at professional groups including graphics), and in graphic terminals. He is interested in the possibility of meeting potential new Canadian suppliers and could be interested in the possibility of some form of joint venture marketing with a Canadian supplier. Marler has had some experience with suppliers from Canada and has purchased software packages. Client service from Canada had been wholly satisfactory.

APEX DATA SYSTEMS

6464 East Grant Road
Tucson, AZ 85715 (602) 298-1991

Mr. Dwight W. Babcock, President

Mr. Babcock mentioned Digital and Prime computers as his main systems suppliers and said that his com-

pany dealt with a great variety of other peripheral manufacturers. Apex concentrates specifically on supplying the insurance industry with sophisticated, comprehensive turnkey computer systems. The company has an annual turnover of approximately \$5 million per year. This turnover is achieved from only 3-4 installations making the average price of an installation approximately \$1.5 million. Apex expects a high level of support from its computer and peripheral suppliers and requires on-site service from the vendor or his authorized agent in the locality of the installation. Mr. Babcock advised that the company's sales territory included both the U.S. and Canada. The company currently employs 5 commissioned salesmen.

Mr. Babcock expressed an interest in a variety of Canadian products including board level products, peripheral controllers, business and word processing software and 8 and 16 bit microcomputers, although he did mention that his main interest would be in word processing and business software. Apex could be interested in the possibility of working with a Canadian company to mutually expand business possibilities. The company has supplied systems in Canada.

METRA INSTRUMENTS

2056 Bearing Drive
San Jose, CA 95131 (408) 297-8530

Mr. Fred Evert, Marketing Manager

Metra uses Intel, Centronics, and AMD equipment in its systems installations. The company's turnover is approximately \$2 million per year with installations ranging in price from \$20,000 to \$60,000. About 40 installations are completed every year. Metra deals with both distributors and manufacturers and generally stipulates a three week delivery period. Hardware accounts for 90 percent of the typical cost of an Apex installation. The company works with 60 percent manufacturers' representatives and all operate on commission. Metra services the national market.

Mr. Evert expressed an interest in learning more about Canadian board level products, business colour graphics and scientific software, specialized terminals, and 8 and 16 bit microcomputers. To date, Metra has not dealt with any Canadian suppliers but would be interested in attending government sponsored seminars to learn more about Canadian capabilities and in general learn more about the industry in Canada.

MARC SOFTWARE INTERNATIONAL

260 Sheridan Avenue
Palo Alto, CA 94306

Mr. Pedro V. Marcal, President

Marc Software uses Prime computer systems in its installations. The equipment is purchased direct from the manufacturer and Marc services the equip-

ment it supplies itself relying on the original equipment manufacturer solely for the answer to technical queries. The average price for a Marc installation is around U.S. \$250,000 and the company completes approximately 30 installations a year. Approximately 80 percent of the company's invoice sales consist of hardware. Marc is interesting insofar as the company's main sales area is Japan. The company has achieved its current sales level with a sales force of 20 commission salesmen.

Marc is interested in learning more about Canadian manufactured data processing and telex and word processing terminals, and also portable terminals. Canadian companies who wish to contact Marc Software should write direct to Mr. Marcal. Mr. Marcal attends the following computer shows: NCC, DECUS, and COMDEX.

KNOX DATA INC.

7100 Havenhurst Avenue
Van Nuys, CA 91406 (213) 781-4477

Mr. Richard M. Knox, President

Knox Data Inc. installs systems for the hotel industry. The products it uses are almost exclusively from DEC. Mr. Knox indicated that reliable and unqualified service support is essential in supplying turnkey systems to the hotel industry as down time could have disastrous effects on hotel business. To date, DEC has provided more than adequate service and generally gets to any malfunctioning stored equipment within four hours. Mr. Knox also pointed out that DEC was able to provide disc level support at an international level. Mr. Knox said Canadian companies may be unable to match this level of service support, also that border problems could create specific difficulties for him. He said the solution could be for the Canadian supplier to set up an American subsidiary to let the Canadian parent deal with the importation problems. Knox Data completes on the average 100 installations a year operating both in America and overseas. Installations range in price from \$10,000 to \$750,000. The company belongs to the American Hotel and Motel Association.

BUDGET COMPUTER SYSTEMS INC.

5752 Oberlin Drive
San Diego, CA 92121 (714) 953-2646

Mr. Eugene E. Cranford, Vice President Marketing

Budget Computer Systems uses primarily IBM, NCR, and General Automation, and ADDS equipment in its system. The company generally purchases its requirements direct from the manufacturer and relies on the manufacturer for most normal service and also for equipment training for its personnel. Budget does service some equipment itself and this consists primarily of CRTs, and printers. Mr. Cranford advised that the cost of his company's average installation is around \$125,000 and the company completes

60 installations a year. Budget computer systems is software oriented with hardware accounting for only 45 percent of all invoiced sales. Budget operates primarily in the Western United States. The company's main customer groups are manufacturers and distributors. Seven salesmen are employed on a commission basis. Mr. Cranford did not express specific interest in any of the products covered by this study. He is, however, interested in the possibility of working with a Canadian manufacturer provided that he could increase his marketing range.

ACTU SYSTEMS

865 Linden Avenue
Carpenteria, CA 93013

(805) 684-4622

Ms. Kathy Petoauskas, Executive Administrator

Actu Systems is a computer systems manufacturer in addition to being a turnkey systems house. Products bought in to be sold with the company's turnkey systems come from Motorola, Southwest Technical and Omni Data. The company generally buys direct from the manufacturer. Actu services the equipment itself except in the case of damaged units when the expected level of service support from supplying manufacturers consists of the immediate replacement of returned products. Actu completes approximately 300 installations a year at the average price of \$12,000. The company's market territory consists of the U.S. and Canada and Ms. Petoauskas said that Actu concentrates exclusively on small to medium size retail business applications. Actu currently employs five commissioned salesmen.

Ms. Petoauskas expressed an interest in learning more about Canadian board level products, graphic, business and scientific software and 8 and 16 bit Canadian bit microcomputers. Actu has so far only sold products in Canada; it has no Canadian suppliers. Ms. Petoauskas could be interested in the possibility of working with Canadian manufacturers. She would also be interested in any educational seminars on Canadian products. Like many of the companies interviewed for this study, Actu has experienced serious frustration and delay when dealing with Canadian customs. Ms. Petoauskas mentioned week delays were typical and that resulting storage charges which the company had incurred because of "necessary paperwork" have been excessive. Ms. Petoauskas compared the midwestern U.S. market with the Canadian market for her company's products and found Canada traditionally conservative saying that Actu's turnkey systems did not sell amongst Canadian small businesses as they do in the Midwest, an area which is also traditionally conservative.

FARM PLAN COMPUTER INC. SYSTEMS

1055 Sunnyville Saratoga Road
Sunnyville, CA 94087

(408) 746-0636

Mr. Milo Tenney, President

Equipment sold in Farm Plan turnkey systems con-

sists of Apple computers and Texas Instruments. Farm Plan concentrates exclusively on business management systems for farmers and business users. The company has only been in operation since February 1982 but completed 300 installations in its first year of operation at an average installation price of \$5,000. The company purchases the equipment it needs directly from a manufacturer and Mr. Tenney said that he is currently experiencing delivery problems with Apple. Farm Plan takes care of most service problems in its own service department and only refers to the original equipment manufacturer in case of serious equipment breakdown. 60 percent of the company's invoice sales consist of hardware at present. Farm Plan operates nationally in the United States and also in Canada. The company employs one full-time salesman and operates with an additional 50 commission salesmen. Mr. Tenney expressed an interest in learning more about Canadian peripheral controllers, graphic, business, scientific and word processing software, and 8 and 16 bit microcomputers. He could be very interested in investigating some form of joint marketing effort with a Canadian manufacturer and would be interested in attending government seminars to learn more about Canadian capabilities generally. Mr. Tenney claimed his company had already dealt with Canadian companies in the past and had been fairly satisfied with the results but did not name the company or companies involved. Like many turnkey systems operators who specialized in a clearly defined area, Mr. Tenney only attends those trade shows which have a specific bearing on his industry, i.e. agricultural trade shows.

FORTH INC.

2309 Pacific Coast Highway
Hermosa Beach, CA 90254

(213) 372-8493

Ms. Elizabeth D. Rather, President

Forth Inc. has been in operation since 1973. The company specializes in software packages, system house work and consulting. Equipment sold for inclusion in turnkey systems include DEC, ABEL, Plessey, Grinnell, Periteck and others. The number of installations completed annually is quite restricted but the company's sales volume is in excess of \$1.3 million. Forth Inc. concentrates primarily on scientific and industrial applications. The company operates with two salesmen plus two commission salesmen. Ms. Rather expressed an interest in learning more about STD bus, peripherals and 8 and 16 bit microcomputers. Ms. Rather would be interested in hearing from any Canadian companies with products to offer in these categories. She would also be interested in working with Canadian manufacturers on a reciprocal basis providing they could offer Forth software for sale in Canada. The company does have a representative in Canada. Ms. Rather claimed that slow mail service to Canada impeded business prospects.

ANACOP INC.

1390 Main Street
Sarasota, Florida 33577

(813) 366-2600

Mr. Michael J. Shade, Senior Region Vice President

The Anacop Group of Companies is a substantial organization with sales in excess of \$160 million. Anacop specializes in software packages; service bureau work; consulting; facilities management; and turnkey systems supply. Anacop also leases computer equipment to its customers. The company uses IBM, General Automation, Perkin-Elmer, and Prime computer equipment in its turnkey systems. Generally speaking, all equipment is purchased direct from the manufacturer. Mr. Shade explained that the level of service required depends upon the relationship with the supplier, the product and the negotiated price and in some cases service was definitely a problem. Anacop does not service the equipment it sells. Anacop installations range in price from \$100,000 to \$1 million. The company installs 100 smaller systems a year and 5 larger systems. Targeted sales groups consist of financial institutions, hospitals, manufacturing, energy, and several smaller vertical markets. Invoice sales percentages range from 0-40 percent depending on the product mix and Mr. Shade said that many sales consist of software only. The company operates to a worldwide market that concentrates heavily on the U.S. and Canada. Anacop employs 30 salesmen who sell major bank products and a further 15-20 salesmen who concentrate on small minicomputer based products. All of these salesmen operate on a commission basis. Mr. Shade expressed an interest in learning more about Canadian software packages and 8 and 16 bit microcomputers and suggested that Canadian companies contact him directly. To date, the company has not dealt with any Canadian suppliers on a subcontractor or supplier basis.

INTERACTIVE MANAGEMENT SYSTEMS CORPORATION

3700 Galley Road
Colorado Springs, CO 80909

(303) 574-5050

Mr. David Lumb

Interactive Management Systems specializes in software packages, turnkey systems and programming. The company's annual turnover is in the vicinity of \$700,000. Interactive Management Systems uses Texas Instruments and Data General equipment in their turnkey installations, and expect on the site support from supplying manufacturers. They have been experiencing pricing problems from Data General recently. The company operates both in the U.S. and Canada concentrating on systems for the construction industry and for non-profit membership organizations. Mr. Lumb claimed that 50 percent of his invoice sales are for hardware and 50 percent software. The company employs four salesmen, two of whom are on commission. Mr. Lumb expressed an interest in learning more about Canadian potential in

the field of word processing software and word processing terminals. To date, Interactive Management Systems has not dealt with any Canadian companies and could possibly be interested in some form of cooperative venture with a Canadian supplier in the future. Mr. Lumb pointed out that he preferred to pay more for a U.S. product rather than buy far cheaper Japanese equipment.

ASSOCIATED COMPUTER CONSULTANTS

720 Santa Barbara Street
Santa Barbara, CA 93101

(805) 963-9431

Mr. David E. Lawton, Marketing Manager

Associated Computer Consultants have gross annual sales in the vicinity of \$7 million a year. The company employs 110 persons. Associated Computer's average installation ranges in price from \$80,000 to \$100,000 and the company concentrates on selling to government departments, commercial customers and OEMs. The company produces software packages, office consulting services and maintenance, as well as turnkey systems. The company's sales are 70 percent hardware and 30 percent software and the equipment used for turnkey installations comes from DEC, TI, Kennedy and Motorola. Associated Computer Consultants usually buy the equipment they sell directly from a manufacturer and service the equipment they sell themselves. The company employs eight salesmen and two commission salesmen selling to the national U.S. market. Mr. Lawton was not interested in looking at any Canadian products.

WISMER AND BECKER

PO Box 1168
Sacramento, CA 95906

(916) 381-3930

Mr. Woody Nelson

Wismer and Becker's annual sales are in the vicinity of \$10 million. The company has 100 employees and concentrates its business activities on software packages, turnkey systems programming facilities, construction and consulting. Wismer and Becker use equipment from Hewlett-Packard, DEC, Lear Siegler and General Electric in their turnkey systems installations. The company concentrates on large promotional and government installations and only completes a small number of installations at a relatively high cost every year. Eighty percent of the company's invoice sales consist of supply of software packages. The company has no specific marketing area and employs one salesman only. Mr. Nelson expressed an interest in learning more about Canadian peripheral controllers, telex and word processing terminals, STD BUS peripherals and 8 and 16 bit microcomputers. The company would like to hear from prospective Canadian suppliers. Mr. Nelson feels it will be an idea for Canadian companies to send literature a letter for initial contact. Wismer and Becker have done business with one Canadian company and found the experience satisfying.

COMPUTER INPUT CORPORATION

1840 So. Elena
Redondo Beach, CA 90277 (213) 372-2177

Mr. J.W. Bradley, President

Computer Input Corporation is involved in turnkey systems installations, facilities management consulting and also operates as a computer service bureau. The company's annual turnover is in the vicinity of \$5 million. Mr. Bradley was not prepared to provide us with the average price for a Computer Input Corporation turnkey system. He felt the prices varied considerably. The company uses Northern Telecom, IBM, and General Computer Systems equipment in its installations. All equipment is purchased directly from the manufacturer and no problems are currently being experienced with suppliers. Computer Input Corporation expects no service support from its suppliers and services all the equipment installed itself. About 25 percent of the company's sales are for hardware as opposed to software. The company operates in a national U.S. and Canadian market. Main customer groups are the government, insurance companies and education establishments. Computer Input Corporation employs 14 commission salesmen. Mr. Bradley would be interested in learning more about Canadian 8 and 16 bit microcomputers. Like most of the companies we talked to, he is interested in examining marketing possibilities with Canadian suppliers and could be interested in attending any seminars or educational programs to learn more about Canadian capabilities. Mr. Bradley has had some experience with Canadian supplying companies.

LODESTAR COMPUTER SERVICES

1830 Vernon Street,
Roseville, CA 95678 (916) 969-3883

Mr. S. Kalman, V.P. Sales

Lodestar is a relatively small company with 1982 turnover in the vicinity of \$1 million. The company describes itself as being an early-end systems house, being involved in maintenance and equipment leasing. Lodestar uses equipment made by Quazar, Contex, Kierulff, and others. Products are generally purchased from a distributor. Lodestar's main area for sales is on the West Coast and the company concentrates on the real estate and construction industries. Thirty-two salesmen are employed. Lodestar intends to move in the Canadian market within the next few months and will be actively canvassing for a Canadian partner via a national press campaign. Mr. Kalman had recently been discouraged from entering the Canadian market which he felt centered around the minicomputer. However, on reflection he feels this will create less competition for his company and its microcomputer based systems. Mr. Kalman could also be interested in learning more about Canadian 8 and 16 microcomputers. He suggested that Canadian companies who would like to pursue a business opportunity with Lodestar Computer Services contact him.

TRAIL BLAZER SYSTEMS

2448 Watson Court
Palo Alto, CA 94303 (415) 858-2800

Mr. Martin de la Fuente, Sales Manager

Trail Blazer's gross annual sales are in the vicinity of \$3 million. The company employs 25 people and it was established in 1971. Main business areas are software packages, turnkey systems, programming, timesharing, facilities management, equipment leasing, education and training. To date, the company has used CPU, Digital, BTI Systems and Ampec equipment in its turnkey systems installations. Trail Blazer expects 24 hour service from its suppliers and in addition services some equipment itself. Mr. de la Fuente would not give any information on the average price of Trail Blazers installations but he did say that the company operated mainly on the West Coast selling systems primarily to the motor freight and transportation industries. The company purchases its equipment both from manufacturers directly and also from distributors. One salesman only is employed. Mr. de la Fuente had recently returned to the U.S. from a Canadian motor freight transportation show. He noted that a number of Canadian companies were looking to America for specialized data processing systems because there appeared to be nothing suitable offered in Canada. For this reason Trail Blazer could be interested in working with a Canadian company on a reciprocal basis although Mr. de la Fuente has no specific knowledge of Canadian suppliers at present. He suggested that interested Canadian suppliers should contact him.

BINEX AUTOMATED BUSINESS SYSTEMS INC.

1787 Tribute Road
Suite M
Sacramento, CA 95815 (916) 920-8805

Mr. Walter Heideg, President

Binex Automated is a service bureau and turnkey systems operator. The company is almost 20 years old and has sales in excess of \$1 million. Four people are employed. Mr. Heideg mentioned Zenith, Data General, and Televideo as being equipment suppliers for the turnkey systems he installs. Generally, the company purchases the products it requires directly from a distributor and services some of the equipment it supplies itself. The cost of the average installation from Binex Automated is between \$15,000 and \$20,000. Sales usually consist 50/50 of hardware and software. The company sells on a national market employing regional representatives. Mr. Heideg expressed an interest in learning more about Canadian 8 and 16 bit microcomputers and suggested Canadian vendors contact him personally. The company sells to a generalized market; the emphasis is on commercial and business installations. Mr. Heideg mentioned that he was generally receptive to the prospects of doing business with Canadian companies but had found that previous approaches by Canadian companies often lacked follow through.

MUNICIPAL DATA SYSTEMS

2140 West 190 Street
PO Box 3697
Torrance, CA 90504

Mr. K. Bodger, V.P. Marketing

Municipal Data Systems' turnover is around \$1 million a year. The company employs 25 people and specializes in software packages and turnkey systems installations. At the same time the company also operates as a service bureau. Municipal Data Systems utilizes IBM, Honeywell, Eagle, Intel, Cypher, and Control Data equipment in its installations which invoice on the average at around \$10,000 each. The company buys the equipment it requires directly from the manufacturer and services the equipment it installs itself but relies on close consulting with original equipment manufacturers during installation. Approximately 30 percent of Municipal Data Systems sales are hardware the balance being in software. The company concentrates its sales activity on the West Coast employing one salesman and as its name implies Municipal Data Systems is primarily involved in turnkey systems for local government. Mr. Bodger expressed an interest in 8 and 16 bit Canadian microcomputers and business software. He would like more information from Canadian suppliers. He had dealt with one Canadian company which he found to be competitively priced and relatively easy to work with. Mr. Bodger pointed to an apparent lack of manufactured microcomputers compared with the United States. In his opinion, there is an excessive number of companies who are serious suppliers of microtechnology in the United States compared with only two in Canada and that in order to gain a substantial market share, Canadian companies would need to become more visible in the market and have more market presence and possibly focus on a particular area. Mr. Bodger mentioned that the software market which had purposefully been ignored by the Japanese was wide open for further development.

PROMEDICS DATA CORPORATION

1032 Elwell Court
Suite #240
Palo Alto, CA 94303 (415) 961-2401

Mr. Ralph N. Sardell, Marketing Manager

Promedics Data Corporation produces software packages and turnkey systems aimed specifically at professional, physicians and medical practices. The company's turnover is in the vicinity of \$2 million and 22 employees are apparently employed. The average price of the company's installations is between \$18,000 and \$50,000 and the company installs approximately 40 systems a year. All systems consist of both hardware and software on a true turnkey basis and the company operates solely in California employing approximately ten salesmen, all of whom are on commission. To date the company has used equipment from Digital Corporation, IBM,

and Scientific Micro Systems. In most cases purchases are made direct from the manufacturer and the equipment is serviced by Promedics Data Corporation after it has been installed. Mr. Sardell expressed an interest in looking at Canadian 8 and 16 bit microcomputers and also said that he would be interested in purchasing Canadian products and collaborating with a hardware manufacturer providing it was possible in return to run and distribute Promedic Data Corporation software in Canada. Mr. Sardell would welcome any information on Canadian products which have a bearing on Promedics branch of the industry.

QUEST INC.

30 Professional Center Parkway, #B
San Rafael, CA 94930 (415) 479-0600

Mr. Darell J. Tycehurst, President

Quest Inc. supplies turnkey systems, software packages and consulting aimed at general accounting users. The company uses IBM PCs and IBM PC compatible equipment in its installations. The equipment is bought both directly from a manufacturer and also through distributors. The company installs 20 complete systems a year and supplies approximately 15,000 software packages. Hardware sales are far less important to Quest than software. Quest operates on a national basis employing seven commission salesmen. Mr. Tycehurst is interested in the possibility of meeting potential Canadian manufacturers but so far has not seen anyone with enough market presence. Mr. Tycehurst added that he had dealt with one Canadian company but the project had been abandoned because of the absence of structure within that company. He expressed an interest in 16 bit Canadian microcomputers.

CALIFORNIA SYSTEMS ASSOCIATES

2845 Mesa Verde Drive East, #4
Coasta Mesa, CA 92626 (714) 546-9716

Mr. Jeff Welles, V.P. Sales Administration

California Systems Assoc. employs 12 people. The company is a turnkey systems supplier and systems house and also supplies turnkey packages and programming. Mr. Welles mentioned Digital Equipment, CDC, Kennedy, Emulex, Disc, and Saturn Systems were the main suppliers used for hardware in the company's turnkey systems. California Systems completes about 20 installations a year which range in price from \$50,000 to \$200,000. The company's turnover is around \$1 million. Mr. Wells has been experiencing delivery problems with Digital recently. California Systems restricts its sales operations to Southern California and concentrates on supplying manufacturers and distributors with usual turnkey systems. The company employs two salesmen, 30 percent of the company sales are software as opposed to hardware. Mr. Welles was completely unfamiliar with Canadian computer products and was unable to name one company. Mr. Welles expressed

an interest in Canadian software packages and would like any information from suppliers who feel they could have a mutual interest with California Systems. Mr. Welles believes there is a general reluctance on the part of American software manufacturers to get involved in the Canadian market and he raised the question of ethics and copying.

7.3 SUMMARY

Turnkey systems companies are interested in business, graphics, and scientific software, peripheral and word processing terminals, and microcomputers — 8 and 16 bit micros were the most frequently mentioned items. Over thirty percent of respondents have had some dealings with Canadian suppliers and most of these reported the experience was satisfactory. Turnkey systems companies usually rely heavily on a range of computer and peripheral suppliers for the items they sell. For this reason, they are particularly sensitive on delivery, service and price issues. Turnkey systems companies will, however, usually consider any new hardware which might give them a specific edge in their own highly specialized fields.

Turnkey systems companies which had purchased Canadian products found them satisfactory although there is concern that service and after sales follow up are not good. Some respondents commented that Canadian companies are conservative and unresponsive to market requirements. There is, however, a general respect for Canadian product engineering skills and quality.

Southwestern turnkey systems companies are also interested in reaching Canadian markets and they see mutual advantages in working with established Canadian hardware or software suppliers. Although most turnkey systems companies develop their own software, they can also be interested in other sources of supply provided extra sales dimensions can be added and that other software systems are compatible.

8.0 DISTRIBUTORS

Interviews with distributors are divided into two categories — those dealing primarily with hardware products and those dealing primarily with software products.

In most areas of business involvement in the computer industry it is often difficult to draw a fine line between hardware and software distributors. Although many distributors concentrate primarily on a variety of hardware products this study showed that an average 18 percent distributors in the Southwestern United States have added software to their product line-up in order to better service the industry. We determined that hardware distributors tend to sell systems software rather than applications software. At the same time, some software distributors also sell hardware although generally they do so on a turnkey or system house basis in order to expand the potential service offered by their particular software system.

The original brief for this study did not include software distributors. Due to certain re-emphasis during the course of the study we interviewed a number of software distributors and manufacturers. The information obtained from these interviews is discussed in section 8.2.

Criteria for interviews: 150 hardware distributors in the market area were mailed a set questionnaire. It became apparent during the selection of companies for the mailing that demographic trends play a significant part in the number of hardware distributors located in a given territory. Consequently, Southern California with its greater population is home to a larger number of hardware distributors than Northern California. For the purpose of the study we mailed 43 percent of our questionnaires to distributors in Southern California, 30 percent to distributors located in Northern California, 10 percent of Arizona, 8 percent to distributors in Colorado, and 4 percent to distributors located in Utah. Approximately 5 percent were mailed to companies located with their headquarters outside the market area.

Distributors selected to receive the questionnaire were selected for a variety of reasons: Volume — it was essential to select companies of some substance who would be financially strong enough to add additional lines to their distributorship. Generally, we mailed companies with sales volume in excess of \$3 million. Product base — we made a point of mailing companies who had a reasonable but not excessive range of products. Previous studies in other industry sectors have proven that it is often not wise to consider doing business with companies who attempt to distribute too broad a range of products.

As with computer systems manufacturers, initial returns from hardware distributors were disappointing. We targeted for 30 percent return rate but received only about a 20 percent response. Consequently, we supplemented mail returns with extensive telephone interviewing. In some instances, we selected companies who were not on our initial list for mailing. The full list of companies mailed is presented in the Appendix.

8.1 HARDWARE DISTRIBUTORS SURVEY RESULTS

Product Information

1. What percentage of the products you sell is imported?
High: 60.0%
Low: 0.0%
Average: 13.4%
6.1% did not answer
2. Are imported computer products causing you problems in price, delivery, etc?
3.1% did not answer
24.2% do not import
60.6% are not experiencing any problems with imported products
12.1% are experiencing problems with the products they import
3. What percentage of your sales make up "complete systems" as opposed to individual units?
15.1% did not answer
high: 100%
low: 0%
average: 43.8%
4. Are systems sales or sales of individual units more important to you?
9.1% did not answer
27.3% reported that systems sales are more important to them
33.3% reported that sales of individual units are more important to them
30.0% reported that systems sales and sales of individual units are equally important to them
5. What percentage of hardware do you sell as opposed to software?
9.1% did not answer
high: 100%
low: 40%
average: 82.2% hardware
6. Do you hold stock of any of the items you sell?
6.1% did not answer
24.2% do not hold stock
69.7% hold stock
7. In what price bracket are these "stock" items?
33.3% did not answer
36.4% stocked items which sell for less than \$10,000
18.2% stocked items which sell for between \$10,000 and \$30,000
12.1% stocked items which sell for more than \$30,000

8. What level of service support do you require from the manufacturer whose products you sell?

- 9.1% did not answer
- 27.3% require little to no service support
- 63.6% require a high level of service support from their suppliers

These distributors said they expect the products they buy to be maintained by their suppliers. They expect immediate attention to their problems, and replacement of defective parts when needed. 88% of the distributors that require service support specified that they expect a 90 day warranty to the end user.

Field or department service was considered especially convenient.

9. Is this service level available from your current suppliers?

- 6.1% did not answer
- 18.2% require no service support at all
- 69.6% are satisfied with the service support from their current suppliers
- 6.1% are not satisfied with the service support from their current suppliers

One distributor explained that service from some of his suppliers is very slow.

10. Do you have any problems with supply, delivery, etc?

- 18.2% did not answer
- 60.6% said they are experiencing very few to no problems
- 21.2% said they are experiencing problems with supply and delivery

About three-quarters of these said delayed deliveries are often a problem

11. What is the extent of your market territory?

- 6.1% did not answer
- 6.1% operate nationally and internationally
- 18.2% operate only in the United States and Canada
- 21.2% operate only in the United States
- 33.3% operate for the most part in the Western States
- 15.1% operate only in California

12. How many salesmen do you have?

- 9.1% did not answer

high: 770

low: 0

average number of salesmen: 12.3

13. Which major groups do you consider your key client groups, i.e. professional, manufacturing, commercial, medical, etc.?

- 9.1% did not answer
- 12.1% do not concentrate on particular groups
- 78.8% do concentrate on particular groups

Most of these distributors reported that they focus on manufacturing, professional, and commercial groups. Computer reselling, banking, government, scientific/engineering, education and legal groups were also mentioned often.

New Suppliers Information

14. Are you interested in considering select Canadian products for addition to your portfolio?

- 6.1% did not answer
- 0% answered no
- 93.3% were interested in considering Canadian products

15. Have you purchased Canadian products?

- 3.0% did not answer
- 75.8% have not purchased Canadian products
- 21.2% have purchased Canadian products

If so, how successfully did they sell and do you have any comments on pricing and Canadian attitudes?

Of the distributors who have purchased Canadian products, a number complained about extensive importing paperwork, and several complained about high prices.

Several felt that Canadians have a passive approach to selling and lack sophisticated marketing techniques. As a result, there is little Canadian brand name awareness in the United States.

16. How should an interested Canadian supplier contact you, i.e. appointment, letters or phone call?

- 42.4% did not express any preference
- 42.4% prefer to be sent a letter with product information
- 9.1% prefer to be phoned
- 6.1% prefer to be contacted by appointment

17. Would you be interested in learning more about Canadian computer technology via government sponsored seminars, etc?

- 12.1% did not answer
- 24.2% would not be interested in attending government sponsored seminars
- 63.6% would be interested in attending government sponsored seminars

18. Are you interested in the possibility of a joint marketing venture with a Canadian company? Would you like to investigate this further?

- 6.1% did not answer
- 12.1% would not be interested in forming a joint marketing venture with a Canadian company
- 81.8% would be interested in investigating the possibility of a joint marketing venture with a Canadian company

19. What new or alternative categories of equipment are you considering currently?

- 9.1% did not answer
- 30.3% are considering all new products in general
- 60.6% are considering specific kinds of products

The only categories mentioned more than once were video terminals and printers. Other categories mentioned were software application programs, electronic games, controllers, personal computers, and robots.

20. Do you see any gaps in the technology currently being offered to you by your suppliers?

- 15.1% did not answer
- 57.6% do not see gaps in the technology being offered by their suppliers
- 27.3% see gaps in the technology available to them

Some items which distributors feel there is a need for are letter quality impact printers, and more advanced software packages and video terminals.

Trade Promotion

21. Which trade publications do you read?

- 15.1% did not answer
- 84.9% read trade publications

The trade publications mentioned most often were Computer World, Computer Systems News, Datamation, Hard Copy, Electronic News, Computer Science, Computer Dealer and Computer Merchandising. Computer World was by far the most popular trade publication read.

22. Which trade publications do you advertise in?

- 15.1% did not answer
- 15.1% do not advertise in any trade publications
- 69.8% advertise in selected trade publications

Many distributors advertise in magazines directed at their key client groups and in general magazines such as in-flight magazines, Time, Newsweek, and the Wall Street Journal. Computer World was again by far the most often mentioned computer magazine. Other computer publications mentioned often were Byte, Electronics, Computer Dealer, Hard Copy, Computer Hot Line, Computer Systems News, Computer Retail News, Electronic News and Computer Merchandising.

23. Which trade shows do you attend?

- 12.1% did not answer
- 3.1% do not attend trade shows
- 84.8% do attend trade shows

Comdex and the NCC were the most often mentioned computer trade shows. Many distributors attend their key client groups' trade shows. Several attend only local shows.

24. Do you belong to any professional trade associations?

- 9.1% did not answer
- 54.5% do not belong to any professional trade associations
- 36.4% do belong to one or more professional trade associations

The only trade association mentioned more than once was the American Electronic Association.

8.2 THE INTERVIEWS

Interviews with distributors outlined in this section were obtained during the course of the study.

MINI COMPUTER EXCHANGE INC.

1010 Stewart Drive
Sunnyvale, CA 94066 (408) 733-4400

Ms. Jane McGowan, Contract Representative

Mini Computer Exchange represents Ampex, Okidata and Fujitsu. The company also sells Data General, Hewlett Packard computers and related peripherals and IBM mini computers, on a non-exclusive basis. Sales of complete computer systems account for 50 percent of the company's business. Mini Computer does not sell any software. Ms. McGowan advised that the company does not hold stock in any of the items it sells and operates either as brokers of used equipment or dealers in case of new equipment. The company sells on a national basis employing four salesmen. Mini Computer requires a standard warranty and factory repair service from suppliers. If field maintenance can be offered, it is an added advantage but not strictly necessary for small clients. The company could be interested in adding Canadian suppliers to its portfolio. Ms. McGowan mentioned disk drives, CRTs, printers, and controllers were currently under consideration. She is mainly interested in equipment which is compatible with Data General, DEC, Hewlett Packard and IBM existing equipment. Mini Computer Exchange's main clients are manufacturers.

HAMILTON MICRO SYSTEMS

19515 S. Vermont Avenue
Torrance, CA 90502 (213) 615-3904

Mr. Richard McCombs, Marketing Services Director

Hamilton Micro Systems is a division of Avnet, Inc. The corporation is a major distributor for Altos, DEC, North Star, Adds, Centronics, Datasouth, Diablo, Hazeltine, IBM, Lear Siegler, Okidata, Televideo, Texas Instruments, Novation, Shugart and Ricoh. The company concentrates its business activities in selling microcomputers, printers, video display terminals, modems, disk drives and software. In addition to distributing products, the corporation provides extensive education and training programs and has in excess of 45 offices located throughout the United States (six located in California, one each in Arizona, Colorado, and Utah). Mr. McCombs advised that

sales of complete systems account for approximately 40 percent of the corporation's business but that sales of individual units are given equal priority. Five percent of Hamilton's turnover consists of software. The company holds stock of quite a number of the items it sells. Generally, the top price limit for stocked items is \$50,000.

When considering a new line Hamilton looks for the following support from manufacturers: parts and labour warranty for end users; manufacturers who offer repair centers throughout the United States and Canada (this is particularly important for commercial systems); and, authorized repair programs for dealers and distributors who can meet the qualification levels. The majority of the corporation's suppliers currently meet all of the above criteria.

Hamilton's market is the entire continental U.S. and Canada and the company employs approximately 770 salesmen. Hamilton's major client groups in order of priority are commercial, professional and manufacturing end users.

Mr. McCombs mentioned that Hamilton would be extremely interested in the possibility of adding new Canadian products to its sales portfolio, particularly for distribution in Canada and also that there are possibilities for U.S. distribution. This company has not hitherto bought Canadian products. If Canadian suppliers are interested in establishing a business relationship by initially supplying the company for Canadian sales, they should contact Mr. Dick O'Melveny at (213) 615-3939. The company could be interested in some form of joint venture marketing activity in the commercial microcomputer application area, particularly if retail stores are important to the plan. Accessories, supplies and video monitors are currently high priority items of new sourcing. Mr. McCombs considers there are product gaps in local area networking and in equipment for communications between micro and mainframe computers.

PERIPHERAL MARKETING

1400 Stierlin Road, Building D-1
Mountain View, CA 94043 (415) 964-4652

Mr. Al Levy, Director of Marketing

Peripheral Marketing is a new company, having been formed in 1982. Sales are in the vicinity of \$6 million a year. The company represents the following manufacturers: Axion, Brikon, Rana Systems, Liberty Engineering, Tadam, Vertex, World Storage Technology, Qubex, Xemag and Xidex Magnetics. Main sales areas for these manufacturers' products are hard and floppy disk drives, testers for floppy and Winchester drives, floppy disk media and duplication service, and matrix printers. Less than 10 percent of the products which Peripheral Marketing sells are imported; 90 percent of the company sales are for hardware items. Peripheral Marketing holds all items in stock and prices for products range from \$20 to \$3,000. Generally speaking, Peripheral Marketing handles all the service its customers require and

very rarely refers to the manufacturer. The company operates nationally with offices from coast to coast and employs 30 salesmen. Mr. Levy advised that his market consists primarily of medium size OEMs and secondarily, of dealers. He is interested in looking at Canadian products which could add to his existing line up; he suggests that interested Canadian suppliers first send a letter with full product information. Items which could interest Peripheral Marketing include portable PCs, terminals, printers, and Winchester backup devices.

CABOT BUSINESS SYSTEMS INC.

2790 Harbor Boulevard
Coasta Mesa, CA 92626 (714) 662-0723

Mr. Robert A. Grote, President

Cabot was established in 1978, has an annual turnover in excess of \$2.5 million, and employs 15 persons including 6 salesmen. The company basically concentrates on supplying turnkey operating and system houses with Epson, Eagle, Kaypro, Durango and Rexon Products. In addition, Cabot is also able to supply more than 80 software packages. To date, approximately 5 percent of the products which Cabot sells are imported and they have experienced no problems either in price or delivery with imports. Since Cabot concentrates on supplying complete systems, as opposed to individual items, 95 percent of the company's sales volume is made up of complete system sales. Mr. Grote estimated that his company's sales are 60 percent hardware and 40 percent software. Cabot holds stock of some of the products that it sells and items are priced for sale between \$500 and \$5,000. Cabot generally expects a minimum of service support level from the manufacturer whose products it sells. The company is currently not experiencing any problems with the deliveries though its market in some instances is world-wide, although is mostly centered in Southern California. Mr. Grote considers the rental equipment, medical, distribution and manufacturing markets are his key market areas.

Mr. Grote could be interested in considering select Canadian products for addition to his portfolio and suggests that any interested Canadian supplier sends him a letter and sets up an appointment to see him. Mr. Grote is interested in the possibility of learning more about Canadian products, attending industry information seminars, and could be interested in the possibilities of joint venture marketing with Canadian sources. Mr. Grote said that his company is currently considering a "pick" based system for national distribution.

BYTE INDUSTRIES INC.

21130 Cabot Boulevard
Hayward, CA 94545 (415) 783-8272

Ms. Sandra A. Erikson, Vice President Marketing

Byte Industries is a computer terminal, printer and productivity software distributor. The company repre-

sents Televideo, Eagle, Compupro, Diablo, NEC, Amdex, Espirt, Qume, Adds, Sanyo, Okidata, Anadex, MicroPro, and Basicorp. None of the products sold by Byte industries are imported. The company reports 85 percent of its sales are made up of sales of individual units with only 15 percent being system sales. Ms. Erikson added that 90 percent of the company sales are hardware and only 10 percent are software. The company does not stock any of the items itself and operates a sales force of six. Sixty percent of Byte sales are made in the Northwestern United States and 40 percent are made in the rest of the United States. Byte primarily sells to computer resellers who in turn resell to a wide variety of markets. Ms. Erikson advised that her company is always interested in looking at new products provided they are well made and a specific marketing program has been prepared. Any new products the company considers should be accompanied by adequate warranty and service programs but, she added, that Byte is not interested in importing themselves. Thus, Canadian companies wishing to do business with Byte will need either to consider establishing a market distribution center in the U.S. or operating through a domestic U.S. agent. Ms. Erikson listed robotics as an area which her company is seriously considering for future expansion.

COMPUFACT

1430M South Village Way
Santa Ana, CA 92705

(714) 972-2000

Mr. John W. Haynes, III

Compufact represents the following manufacturers: Prime, Data Products, Printronics, Mannesman Tally, ADDS, Televideo, Texas Instruments, Rexon and NEC Spinwriter. The company sells computers, discs, tapes, printers, CRTs, and bar code equipment. To date, none of the products the company sells are imported. Mr. Hanes advised that 80 percent of his company's sales are comprised of complete system sales and that 70 percent of sales consist of hardware as opposed to software. Compufact holds none of the items it sells in stock but relies on fast accurate deliveries from the manufacturer. Mr. Hanes mentioned that he expects approximately 35 percent support level from the manufacturer whose products he sells. Compufact sells nationally in the United States and has 10 salesmen on its payroll. The company concentrates on manufacturers and distributors which it considers its key client groups. Mr. Hanes could possibly be interested in looking at new products from Canada; he has not hitherto purchased from a Canadian source but he suggests that interested Canadian companies write to him in the first instance. Mr. Hanes further added that his company would be ready to seriously investigate some business activities with Canadian companies within the next 12 to 18 months and that he is currently looking for new sources of terminals and printers. No financial information on the company's turnover was offered.

COMPUTER INPUT CORP.

1840 South Elena
Redondo Beach, CA 90277

(213) 372-2177

Mr. John Bradley, President

Computer Input Corporation is a service bureau and consulting firm. The company also provides facility management and offers turnkey systems. Mr. Bradley advised that his company represents IBM, Hewlett Packard and Informatics. The company's turnover is approximately \$5 million per year. Sales consist of 100 percent complete systems. Mr. Bradley considers that his software sales are an integral part of his hardware sales but, added, that out of his total sales, 40 percent of the invoiced value is usually for hardware and 60 percent for software. To date, the company has concentrated its sales activities on IBM and Hewlett Packard Series I computer systems, and on legal software. Mr. Bradley mentioned that the bulk of his business is with the legal profession and that Computer Input still specializes in anti-trust applications. The company stocks some of the hardware it sells and Mr. Bradley mentioned that \$140,000 was the typical in-stock value for a stock system. Computer Input Corporation requires 90 percent of its service support from the manufacturer whose products it sells and so far has experienced no major delivery set-backs with hardware suppliers. The company's software suppliers often operate on a very extensive lead-time which can cause some problems. Computer Input currently maintains a sales force of fourteen. Mr. Bradley could be interested in investigating Canadian sources for new products. He suggested that interested suppliers send him a letter before making an appointment and added that he would be interested in attending Canadian Government sponsored seminars to learn more about computer technology. Further, Mr. Bradley would also be interested in some form of reciprocal marketing arrangement with a Canadian company, providing common interest could be established.

DAYTON-FORESTER & ASSOCIATES INC.

8740 Shirley Avenue
Northridge, CA 91324

(213) 701-0127

Mr. N.L. Eyster, President

Dayton-Forester & Associates are distributors, and also computer and software retailers. The company represents the following manufacturers: Texas Instruments, General Electric, Lear, ADDS, Racal-Veikolics Inc., Micro Products Co., Diablo, and Micro 5. The main products sold by Dayton-Forester from these manufacturers are printers, CRTs, microcomputers, modems, multiplexers, and supplies. None of the products are imported. Mr. Eyster advised that both sales of complete systems and individual unit sales were equally important to his company and that his current sales consist 98 percent of hardware but that Dayton is becoming increasingly involved in software sales. The company does hold stock in the items it sells. Mr. Eyster advised that the price limit

on items carried in stock was \$10,000. The company requires board level service support from the manufacturers whose products it sells. Dayton markets in California, Utah, Nevada and Arizona with a sales force of nine. Mr. Eyster is currently considering new sources for microcomputers, software application programs (a wide variety), and photo core converters. Mr. Eyster suggested that interested Canadian companies should contact him for an appointment.

J.P. PATTI INC.

10015 South Pioneer Boulevard
Santa Fe Springs, CA 90670 (213) 949-0960

Ms. Donna Van Buren, Vice President & General Manager

Patti Inc. is a hardware distributor selling primarily to the West Coast U.S. market. Ms. Van Buren listed Memorex, Epson, Wabash Tape Corp., 3M, and Control Data Corporation as companies whose products Patti represents. The company's sales consist primarily of printers, computer tape and floppy disks, and storage equipment for computers and hardware peripherals. The company sees itself primarily as a media supplier but does also sell a little hardware. Epson printers are the main item sold. Ms. Van Buren claimed that her company has the largest inventory of magnetic media in the United States and priced the products which her company holds in stock at up to \$800. Patti's major client groups are banking, aerospace and education. The company would be interested in looking at any product that helps profitable growth. So far, Patti Inc. has had nothing to do with Canadian suppliers and would be interested in learning more about available Canadian products. Ms. Van Buren felt that Canadian companies were natural trading partners for American companies and they were being awfully slow in tackling the market here. She said that in order to effectively market products in the United States, Canadian companies should: 1) carry out sufficient market research to enable them to identify gaps of product availability in the United States and then to develop realistically priced answers; 2) they should be concerned with building brand name awareness for their products; and, 3) they should ensure they make available adequate support service in the United States.

ALPHA COM INC.

2323 South Bascom Avenue
Campbell, CA 95008 (408) 559-8000

Mr. Syed Zaldi

Alpha Com employs a sales force of 10 salesmen and concentrates its sales efforts on manufacturers. Products are sold by the company in the United States and Canada. Alpha Com represents Olivetti. The company concentrates its activities exclusively on computer printers and holds stock in the printers it sells, which are priced from \$119 to \$165. Mr. Zaldi expects standard warranty service

from manufacturers. The company also supplies its own service support. Alpha Com would be interested in looking at new low to medium priced Canadian printers. Mr. Zaldi suggested that any interested Canadian supplier should first send some advanced literature. Mr. Zaldi said that he had previously been approached by at least two Canadian companies who have been interested in forming a joint marketing venture with Alpha Com. Mr. Zaldi felt that Canadian casualness in business was alarming. He stated that the communication had occurred with these two Canadian companies on a yearly basis only! He said he expected to hear from those companies again in another year or so.

LEASAMETRIC INC.

1164 Tritom Drive
Foster City, CA 94404

Mr. D. Sobo, Vice President of Marketing

No information was available on the turnover volume of Leasametric, but the company maintains offices in approximately thirty-five U.S. and Canadian cities. The company classifies its business activities as distribution, equipment leasing and equipment maintenance. In addition, the company is a manufacturer's representative for the following companies: Hewlett-Packard, Texas Instruments, Apple, Pertronics, and DEC. Generally speaking, Leasametric is more interested in leasing equipment than in selling. The bulk of the company's leases are made with scientific and engineering enterprises. The company has 91 percent of its business in the United States, 8 percent in Canada and 1 percent in Germany. 130 salesmen are currently employed. The main products leased are electronics instrumentation, computers, terminals and personal computers. When actually selling as opposed to leasing, the company tends to concentrate on individual units rather than systems and sells 100 percent hardware, no software. None of the items sold or leased are carried in stock. Leasametrics relies exclusively on service provided by supplying companies. The company has purchased Canadian products and this was done through a wholly owned Canadian subsidiary. Canadian companies who feel that they have a product to offer Leasametrics should contact the company's Canadian general manager. Mr. Sobo felt that there was probably little chance of any joint marketing venture between Canadian and Leasametric because of possible conflict of interest with the company's Canadian subsidiary but he advised that his company is generally in favor of that type of activity, and pointed out that Leasametric currently had a very satisfactory joint venture with a German company. Leasametric is interested in investigating new sources for personal computers.

THE KOFFLER GROUP

3029 Wilshire Boulevard
Santa Monica, CA 90403 (213) 453-1844

Mr. R. Koffler, President

The Koffler Group are consultants and manufacturers' representatives. They currently represent Altos, NEC, Qume, and Televideo. Mr. Koffler listed products sold as including 8 bit small business systems, daisy wheel and matrix printers. The company only sells imported printers. Mr. Koffler added that 20 percent of his sales consist of complete computer systems sales and that 80 percent of the company's sales are hardware as opposed to software. The company's turnover is in the vicinity of \$1 million and major client groups are professional and commercial. Mr. Koffler is always on the lookout for new products. He said that Canadian companies should write to him and send details of literature, etc. before making an appointment to see him.

DMC SYSTEMS INC.

2300 Omowem Street
Santa Clara, CA 95051 (408) 727-4444

Mr. Jack Seitze, Vice President of Marketing & Sales

DMC Systems have gross annual sales in the vicinity of \$14 million per year and the company employs 225 people. DMC manufactures computer systems and also acts as a distributor in certain areas.

Mr. Seitze listed Zentek, Molecular Computers, Diablo, and Centronix as companies represented by DMC. He listed printing terminals and point of sale and credit line equipment amongst the major items the company sells. To date none of the products sold by DMC are imported. Mr. Seitze said that less than 5 percent of the company's sales were made up of complete system sales and that 95 percent of sales are hardware. DMC Systems stock some items which range in price from \$500 to \$20,000 and the company maintains its own extensive field service. DMC markets its products in the U.S. and Canada and also has limited sales activity in Australia and South Africa. The company's sales force consists of 3 salespersons. Financial institutions are amongst DMC's largest client groups. Mr. Seitze is interested in the possibility of examining Canadian products; he is primarily interested in microcomputer peripherals. He suggests that Canadian suppliers send him a letter prior to making an appointment. He would be interested in some form of joint marketing venture providing it made good business sense.

WESTERN MICRO SYSTEMS

(A Division of Western Micro Technology Sales)

10040 Bubb Road
Cupertino, CA 950014 (408) 725-1660

Mr. John Hughes, General Manager

No financial information was available on this company. However, Western Micro Systems do employ 30 salesmen and represent products from Altos, Molecular, Televideo, Corona, Eagle, Weiss, Star Micronics and NEC. Mr. Hughes claimed Western has a catalogue list of 300 items they sell. At the present time, about 30 percent of Western's products are imported while sales of complete systems

make up about 60 percent of the company's sales. Western are interested primarily in computer system sales. The company holds stock of all the items it sells which range in price from \$100 to \$30,000. Western sells 95 percent hardware. The company handles most field service itself but expects logical disk drives, etc., to be replaced by manufacturers, and experiences frequent delays. Western's marketing territory is the West Coast and Mr. Hughes listed dealerships amongst his main client groups. The company is, at present, seriously considering higher-end machines with micro-overlap capability which would have an end-user cost of approximately \$50,000 dollars. Mr. Hughes suggested that Canadian companies who felt they had something to offer should send some advance product literature. He could be interested in meeting with them.

INFOMATICS GENERAL CORP.

200 East Mitchell Drive
Phoenix, AZ 85012

Mr. Roger A. Phillips, Vice President and General Manager

Infomatics distributes and sells computers and peripherals. Products represented are primarily Wang, also Compuscan and Totec. Less than 2 percent of the products sold by Infomatics are imported. The little experience the company has had with importing has been thoroughly satisfactory. Mr. Phillips mentioned 70 percent of his company's sales were for complete computer systems, which are their main area of interest. The company is also active in software package selling and Mr. Phillips maintained that 25 percent of the company's sales were in the software area. No items are held in stock. The company is currently looking for a new micro-based system and would not mind if it came from Canada. Mr. Phillips suggested that Canadian companies with something to offer should contact him. The company maintains a national marketing and also a focused West Coast sales territory. Sales are exclusively to legal practices. Mr. Phillips explained that his company expects a high level of service from suppliers and that service contracts should be honored. He added that he is experiencing delivery problems with Wang, one of his main suppliers, who are currently backlogged with orders on new equipment. They could additionally be interested in joint venture marketing with Canadian companies.

X-MARK CORP.

3176 Pullman Street, Suite 9
Coasta Mesa, CA 92626 (714) 556-9210

Mr. Tousignant

X-Mark Corporation has sales in excess of \$2 million a year and employs 15 people. The company was established in 1973. X-Mark supplies turnkey systems operators with hardware, operates as a consultant, as a manufacturers' representative, and as a computer retailer. Manufacturers represented currently

include Kennedy, NEC, Intelligent Shugart and Visual Technology. Typical products sold include word processors, telephone systems, optical systems and printers. The only imported products the company sells are printers (20 percent of X-Mark's printer sales are imported). Mr. Tousignant advised that the majority of his company's sales are for complete computer systems although, generally, they also look for sales of individual units. Seventy percent of all the company's sales are in the area of software and X-Mark does hold stock in some of the items it sells. Values for stocked items range from \$200 to \$13,000.

The company markets its products on the West Coast of the U.S.A., in Canada and Saudi Arabia. Four salesmen are employed. The government (Aerospace) and publishing were listed as key client groups. Mr. Tousignant mentioned that an important difference between East and West Coast markets was that in the East clients often prefer to construct computer systems they require from individual units, while on the West Coast, complete systems were usually preferred. Mr. Tousignant felt that there was an acute need for a high quality mid to upper priced mini computer. He felt that this was something that Canada was clearly capable of producing. However, he said that he felt Canadian companies were just not used to producing products in enough volume to make a consistent impression on the United States market and that, unlike other countries who could present a united front when entering a foreign market, there was a high degree of in-fighting between Canadian companies. Interested Canadian suppliers should contact Mr. Tousignant.

RPS ELECTRONICS INC.

6230 Descanso Ave.
Buena Park, CA 90620 (714) 521-5230

Mr. Scott Forbe, Marketing Manager

RPS Electronics is unusual insofar as the company was established in 1929. The company acts as a distributor for some manufacturers, as a turnkey systems supplier, as a consultant, and is also active in education and training programming. Mr. Forbe mentioned Texas Instruments and Data General Corporation as the lines that RPS currently represents. The company generally concentrates on sales of individual items rather than systems and only 5 percent of the items sold by the company are imported. These generally consist of Japanese chips; (Mr. Forbe is currently experiencing delivery problems). The company holds stock in some of the items it sells and these items are priced from as low as \$1 to as high as \$20,000. RPS expects full warranty service from the manufacturers whose products it sells. The company concentrates exclusively on the West Coast market territory, with a sales force of 19. Government, professional and manufacturing groups were listed amongst key clients. RPS could be interested in looking at new Canadian products providing they are compatible with the company's existing line-up but is not specifically looking for any products at

the current time. To date the company has not been involved with any Canadian suppliers.

NEW SYSTEM INC.

2505 East Thomas Road, #9
Phoenix, AZ 85016

Mr. Randall DeMarco, Vice President Marketing

New System Inc. represents Televideo, Data South, Okidata, OSM and MicroPro. The company concentrates primarily on sales of terminals, probe printers and word processors. To date less than 30 percent of the products the company sells have been imported and 40 percent of the company's sales are made up from complete systems sales. Currently, the company is also a substantial software supplier with 60 percent of its sales in the software area. New System does hold stock in the items it sells which range in price from \$850 to \$20,000. Mr. DeMarco mentioned a major market need for a processor with large multi-user capability in a CBM environment. The company specializes in the hotel industry on a national and an international basis. New System is interested in the possibility of looking at Canadian products and suggests that interested suppliers send a letter. The company could be interested in joint venture marketing with a Canadian company.

MODUTEST SYSTEMS INC.

10632 North 21st Avenue, Suite 6
Phoenix, AZ (602) 942-0365

Mr. Lothar Mueller, Vice President Marketing

Modutest is a company which both manufactures computer systems and also acts as a distributor. Mr. Mueller listed Victor and Texas Instruments among the companies whose products they represent. Actual items sold consist of large scale main frame computers, peripheral and small scale business computers and software. To date, none of these products has been imported. The company sells only complete systems. Sales are made up of 80 percent of hardware as opposed to software; no items are held in stock. Mr. Mueller listed power companies and professionals as amongst their major client groupings. The company markets its products on a national and on a limited European basis but does not employ any salesmen. Mr. Mueller could be interested in selected Canadian products in addition to his portfolio and has not hitherto purchased any Canadian products. He suggests that Canadian suppliers write to him. He is currently interested in electronic games and possibly other software.

CSS TELECOMMUNICATIONS

2680 Bayshore Frontage Road
Mountain View, CA 94043 (415) 964-4335

Mr. Stan Sitko, Vice President Marketing

CSS Telecommunications are manufacturers representatives and distributors. Companies represented

are Ekimian Laboratories and Telecom Techniques. Representative products sold are communications systems and automated fault isolators. To date, the company has imported approximately 15 percent of the products it sells while 50 percent - 60 percent of all products sold are for complete systems. Mr. Sitko advised that his company sells 100 percent hardware and that CSS holds stock in some of the items it sells. Items which are held in stock generally range in price from \$200 to \$800.

The company is actively looking for new sources for high speed multiplexers at present and could be interested in looking to Canadian companies for supplies. CSS sells to a national market but strictly emphasizes the West Coast and maintains a sales staff of four. Mr. Sitko advised that the company finds most of its customers among the communications industry and Fortune 500 companies. Interestingly, CSS Telecommunications has recently embarked on a joint marketing venture with a Canadian company importing data communications equipment through an American subsidiary. Mr. Sitko does not anticipate any problems with servicing; in his experience he found that Canadian companies arrange for a high level of support in the United States. Mr. Sitko generally felt that Canadian companies had a too relaxed and passive approach to selling. This was evidenced by comparing Canadian and American sales literature and brochures. The low-key approach taken in Canadian sales literatures then had a distinct disadvantage which is a great shame, he said, because he felt that the Canadian technical approach was as good as anyone's.

AMERICAN COMPUTER AND ENGINEERS INC.

2001 South Barrington, Suite 204
Los Angeles, CA 90025 (213) 477-6751

Mr. Aziz Al-Khal, Vice President Marketing and Sales

American Computer and Engineers Inc. has annual sales in the vicinity of \$4.8 million and employs 20 people. The company was established in 1977. American Computer and Engineers concentrates on software packages, supplying turnkey systems, consulting, and maintains a service bureau. The company is also a manufacturer's representative. American Computer and Engineers represents the following hardware manufacturers: Cronenco, DEC, NEC and Compro. On the software side, the companies represented are MicroPro, International Micro Systems and Visual Technology. Mr. Al-Khal quoted microcomputers both 8 and 16 bit as being typical of the hardware products his company sells. He said that 10 percent of the products sold were imported and the fact that they were imported had caused no problems in price or delivery so far. Further, Mr. Al-Khal estimated that 80 percent of all the company's hardware sales consisted of complete computer systems; in fact the company sold 80 percent hardware. Some items are kept in stock and range in price from \$200 to \$10,000. Mr. Al-Khal stated that one of his suppliers, NEC, had been

causing him delivery problems. He claimed that the company frequently under-rates demand and that there are resulting long delays.

American Computer and Engineers markets internationally but their main emphasis in selling is in California. The company employs 15 sales staff. Mr. Al-Khal claimed that professional groups made up a majority of his company's clients. Mr. Al-Khal is interested in looking at any worthwhile Canadian products and welcomes enquiries from Canada at anytime. He could conceivably be interested in some form of joint venture marketing activity with a Canadian company. An example of new equipment which the company is currently looking for is an English language word processing package which is able to display mathematical equations on the screen. Mr. Al-Khal stressed that a main problem for companies such as his has been that 16 bit software has only recently caught up with the hardware which has been available for some time. This is occurring in a time when 32 bit hardware is being introduced. He anticipates the same problem occurring there.

8.3 SOFTWARE DISTRIBUTORS AND MANUFACTURERS

We determined that the percentage of software sales made by companies from the three major groups interviewed for this study varied considerably. Hardware distributors, for example, reported an average of 17.8 percent of their total sales were for software. Thirty percent of computer systems manufacturers reported that they do purchase software packages for resale with their hardware but many write their own programs. Software sales for turnkey/systems house companies can also vary from a high of 80 percent to a low of 20 percent. The amount of software sold depends on the specific selling platform of the individual company.

There are approximately 6,000 U.S. firms involved in software design, production, and distribution. The field contains small, medium and large companies. In addition, an increasing number of computer manufacturers are beginning to develop their own software divisions. A software producer can be involved in producing anything from highly specialized systems and driver software to custom tailored business, scientific or professional programs or pre-packaged programs for consumer microsystems. The field is extremely fragmented and new companies are continually emerging.

Many of the interviews with computer systems manufacturers, hardware distributors, and turnkey/systems companies included in this study contain information on software prospects. For this reason we conducted a sampling of fourteen interviews specifically with software specialist companies. The interviews covered companies involved in production, design and distribution. The results follow in a precis form.

QUARK INC.

2525 West Evans
Suite 200
Denver, Colorado 80219 (303) 934-2211

Ms. Jennifer Gardiner, Asst. Marketing Manager

Quark develops and manufactures office automation and word processing packages for Apple computers. Prices range from \$89-\$295. The company sells approximately 3,000 packages per month. Quark is not interested in talking to Canadian suppliers.

SOFTWARE SYSTEMS MARKETING

1850 E. Southern
Tempe, Arizona 85282 (602) 820-0515

Jess Kennedy, Vice President

Software Systems Marketing produces custom designed software package systems for individual business, and medical needs. Once packages have been developed for specific customer use, they are generally marketed to a wider customer base. Prices for this company's packages range from \$100-\$1,000. Software Systems is not interested in working with Canadian companies.

SPECTRA SYSTEMS, INC.

3481 Old Conejo Road
Suite A4
Newbury Park, California 91320 (805) 499-6729

George Teachout, Vice President

Spectra Systems has an annual sales volume of around \$2 million. The company produces DEC compatible business applications systems. Spectra has purchased a word processing package from Canada. The package quality was good but the price has inhibited sales. Despite the fact that service support was inadequate, in this case the company is interested in other Canadian packages and would also be interested in selling Spectra systems on a reciprocal basis.

LOGICAL SERVICES, INC.

2340 A Walsh Avenue
Santa Clara, California 95051 (408) 727-1470

Don Nickol, Vice President

Logical Services has gross annual sales of approximately \$1 million. The company designs and develops financial management and word processing systems which are then sold to manufacturers who produce and market them in large quantities. The company buys a variety of software itself to use in the systems it designs. To date no imported software has been purchased. Interested Canadian suppliers should send literature to Don Nickol.

NATIONAL INFORMATION SYSTEMS, INC.

20370 Town Center Lane
No. 245
Cupertino, California 95014 (408) 257-7700

Guy W. Bohner, Vice President in charge of sales and marketing

National Information Systems designs and manufactures personnel, business management, and data base management software. The company also sells other manufacturers' software and some hardware. National sells about ten systems a month for mainframes and minicomputers. Annual sales are around \$3 million. The company would be interested in considering imported software. Interested Canadian suppliers should contact Mr. Bohner.

MINICOM SYSTEMS

Minicom Building
1636 Wilshire Boulevard
Los Angeles, California 90017 (213) 483-2400

Jack Cipriano, Vice President in charge of sales

Minicom Systems is a systems integrator. The company designs, assembles and sells systems using Data General and IBM hardware. The company designs most of the software it requires itself although Minicom has purchased software from other sources on occasion. The systems Minicom develops are for accounting, manufacturing and wholesaling. Minicom's annual turnover is around \$9.5 million. Jack Cipriano has not looked into Canadian software possibilities but could be interested providing the software being offered uses IPC or IRIS. Potential suppliers should send literature to Mr. Cipriano.

SOFTOOL CORP.

340 S. Kellogg
Goleta, California 93117 (805) 964-0560

Bruce Hannah, Marketing Director

Softool manufactures and sells its own software. The company specializes in general purpose software packages designed to facilitate computer systems programming and maintenance. The company's customers are usually large corporations and government departments. The company is not interested in Canadian software.

SOFTEMM SOFTWARE DISTRIBUTORS

10023 W. Jefferson
Culver City, California 90230 (213) 558-1144

Grace Follin, Product Acquisition Manager

Softemm Software Distributors is a software distributing firm. The firm's annual turnover is in the vicinity of \$24 million. Softemm sells primarily packaged software for business and entertainment. The aver-

age package price is \$250. At this time, about 2 percent of Softeemm's software is imported. Softeemm already purchases a number of Canadian packages and Ms. Follin has so far been completely satisfied with pricing, delivery and service support; she would like to hear from other Canadian suppliers.

SCIENCE APPLICATIONS, INC.

2404 Townsgate
Westlake, California 91361 (805) 496-6655

Lenny Karo, Purchasing Manager

Science Applications works mainly for defense industry related companies such as Martin Marietta and Lockheed developing software for specific defense related purposes. Nuclear diction was an example quoted. Once the software has been developed, it is usually handed over to the client company for its own use. Science Applications has a turnover in excess of \$300 million, with one hundred and twenty offices located throughout the country. There are four thousand employees. The company would be interested in hearing from Canadian specialist companies who relate to its field.

OCCIDENTAL COMPUTER SYSTEMS, INC.

6666 Valjean Avenue
Van Nuys, California 91406 (213) 782-3005

Paul Marchetti, President (213) 826-4500

Occidental Computer Systems manufactures and sells healthcare software packages. The company also sells other people's software. Occidental has been in business since 1974. The company has not purchased any imported software to date, but Paul Marchetti is interested in hearing from Canadian software companies which specialize in healthcare and medicine.

SKU

2600 10th Street
Berkeley, California 94710 (415) 848-0802

Bob Goldberg, Vice President Marketing

SKU is a software distributing company. SKU buys and sells all kinds of software, mainly pre-packaged, including business, education and entertainment packages. Mr. Goldberg advised that he is currently considering including imported software in his catalog. Canadian manufacturers should forward brochures before making an appointment. SKU's turnover is in the vicinity of \$24 million a year.

8.4 SUMMARY

Hardware:

The average amount of imported products sold by the hardware distributors who responded to the study is 13.4 percent. Approximately 20 percent of all companies interviewed had purchased Canadian computer products. Most companies expressed an

interest in learning more about potential Canadian sources and products. Only 21 percent suggested that they are experiencing problems with pricing and deliveries of imported products. This suggests that distributors have adjusted to selling imports.

At the same time, however, Southwestern U.S. distributors offer constructive criticism which, if followed, could assist Canadian suppliers to penetrate Southwestern markets successfully. Distributors are prepared to do business with Canadian companies. They suggest that poor marketing strategies, and the inability of Canadian companies to build product-brand awareness through coordinated advertising and effective literature has seriously impeded Canadian efforts in the U.S. Distributors cited Japanese companies' willingness to work together to achieve national identity for their products and compared this with an apparent Canadian reluctance to cooperate in areas to achieve mutual sales goals.

Many distributors felt that Canadians should be prepared to reduce prices to obtain a market share or consider developing radically new products. They felt that Canadian technical and engineering approaches are good but that there is no point in trying to compete with the Japanese, for example, in selling low-priced microcomputer systems and peripherals. A number of distributors do feel that there are gaps in product/technology availability. Video terminals with color graphics potential, high quality impact letter printers, laser printers, processors with multi-user capability, and software capable of operating with both 16 and 32 bit capability are examples. Canadian companies could move to fill these and other product gaps. There is a growing feeling of resentment against the Japanese which Canadians could turn to their advantage provided they are prepared to gear up realistically for export production.

Software:

Although only a relatively small number of software distributors were interviewed, it is apparent that most of these companies are interested in considering imported software packages and that they would consider buying Canadian.

The software distribution industry is extremely fragmented. Some distributors only sell packages manufactured by other companies; other companies design and produce their own packages and also distribute packages made by other manufacturers. Turnkey system companies can also be considered viable software distributors, in certain instances.

The best prospects for Canadian software manufacturers and designers appear to be moderate to high priced special applications packages. Here, a wide range of applications is in demand. Healthcare programs, farm management packages, database management, financial management, survey and construction management packages are examples, and other applications can virtually create their own markets as soon as they have been developed. Companies which specialize in design rather than production could also make successful and profitable connections in the industry. We talked to one com-

pany with extensive connections in the defense industry which is always prepared to work with designers in allied fields.

We discovered prospects for low priced packages suitable for distribution to retailers. Competition in this area will be more severe and price is an important aspect. Canadian manufacturers will find themselves far more dependent on their distributors than they will be with a more specialized product. It will always be possible to sell a specialized product at a more basic level, for example, by using a single sales representative, particularly during the early stages of a marketing campaign.

Software companies will generally give a clear yes or no answer when asked if they are interested in distributing new products. Most companies who say no will do so simply because they design or produce all the software they need themselves. Two of the companies we interviewed have sold Canadian software previously. One of these companies was completely satisfied with the packages they purchase. The second company found pricing too high for the particular package they had purchased; service support was also inadequate. Despite the negative overtones, both companies were interested in new Canadian products.

9.0 RETAIL COMPUTER MARKET

Twenty-eight of the top two hundred retailers in the electronics and major appliance field are located in the seven Western States. Retail sales of computer equipment in the area totalled \$2.01 billion in 1982. California alone generated \$1.25 billion of retail sales and is responsible for 15.6 percent of the entire U.S. retail computer market. Sales and Marketing Management magazine estimates that sales to households in the western region are \$681 higher than in the rest of the nation. Los Angeles dominates the retail sector in the West with 4.1 percent of total retail sales. The percent of Los Angeles households owning home computer systems in 1982 increased from the 1981 level of 1.6 percent, or 54,305 households, to 2.5 percent, or 86,438 households.

According to Computer Retail News, 38 percent of sales of computer equipment are made through computer retail stores; 15 percent of sales are as a result of direct selling; 13 percent are sold through mass merchandisers; 13 percent through general merchandisers; 8 percent through consumer electronic stores; 7 percent direct by mail; and, 6 percent are sold through office product dealers.

Multilocation chains are expected to increase by 4 percent from 27 percent to 31 percent of the overall market. While there is an increasing trend toward chain and franchise computer stores, this does not mean that the independent store will be entirely wiped out. According to Future Computing magazine's survey, a typical computer store, after five years of operation, will generate sales of \$1.7-\$1.9 million per annum and will stock three to five personal computer brands. In 1982, the best selling personal computer was the IBM personal computer; Apple II was the second highest seller followed by the Kaypro II computer. Future Computing's survey indicated that the best selling brands are now facing some healthy competition as U.S. and foreign companies continue to develop lower priced personal computer systems for the business and retail markets. The increasing importance and spread of retail computer stores can be measured by the projected increase in the national total of stores from 1,800 in 1982 to an estimated 2,300 at the end of the first quarter alone in 1983.

We take the current view that the nature of computer retailing has already changed substantially and that personal home computers and game packages have become secondary. The future store-front retail operation will form the primary sales channel to the small businessman. This is possibly the largest untapped market segment available to the computer maker today.

9.1 RETAIL INTERVIEW RESULTS

The information presented in this section is based on interviews with retailers conducted during the course of the study:

- Sixteen of the buyers we talked to had not considered buying Canadian computer products and

are not familiar with them. There is an obvious lack of Canadian brand name awareness in the Western U.S.

- Four of the stores we interviewed do purchase a Canadian product. All four of these stores are satisfied with the product, but not entirely satisfied with the service.
- Most buyers we talked to are interested in looking at Canadian computer products. We also talked to a number of the new separate software stores which are making their appearance in the market area in increasing numbers and found that opinions were divided amongst buyers. Some expressed an interest in looking at available foreign software, while others felt that imported software packages could only cause them delays and inconvenience. None of the buyers seemed concerned that foreign software might not perform effectively for U.S. consumers.
- Ten of the stores interviewed sell primarily microcomputers in the \$1,500-\$5,000 price range, peripherals and software for small business applications; three stores catered to both business and home markets; while six concentrated mainly on the home market, selling lower priced hardware and software. IBM, Apple, Kaypro, Commodore and TI are brand names many buyers termed popular. Most of the computer retail stores we interviewed sell about 10 microcomputers, 7 low priced printers and 75 software packages per month. A smaller number of large retail stores sell up to 90 microcomputers, 80 low priced printers and 500 software packages per month.
- Several of the stores interviewed construct systems from different manufacturers' hardware for their customers.
- The majority of stores interviewed buy their hardware and software requirements from distributors located in the market area. Only two retailers reported buying hardware directly from manufacturers.
- Apple was mentioned as virtually the only company which runs its own distribution organization in the market area.
- Computer retailers surveyed by Computer Merchandising magazine report that the average mark-up on computer products at retail is about 25 percent on hardware and 35 percent on software.
- In terms of service support, most stores expect immediate replacement of defective products and 90 days parts and labour warranty from the date of consumer purchase. Other stores surveyed expect full service coverage for at least 6 months in the store but parts and technical advice should be available almost indefinitely. IMS International was credited for having an unusually good warranty which included full instore coverage for 2 years plus 90 days to the consumer. Service from Atari was said to be particularly convenient because Atari has its own repair shops to which retailers may send customers to have their computers repaired free of charge.

- Several of the stores questioned are not experiencing any significant problems with their current suppliers; other stores reported varying problems. One manager, for example, said that parts for the same computer often arrive at different times. One store reported that the Commodore 64 computer is so popular that orders are back-logged for months, and another store cannot keep up with the demand for Epson printers.
- Almost all the buyers interviewed believe that their current suppliers have room for improvement, and all except one would be interested in investigating Canadian computer products providing adequate service, support and marketing facilities are available.
- The one Canadian computer system which is currently on the market has definitely created a good impression for other Canadian products but in order to succeed both hardware and software manufacturers must make every effort to ensure their products reach the market without excessive border delays and that special care is taken to maintain round-the-clock communication support for American customers. A toll free line is now the norm for customer enquiries.

9.2 RETAIL INTERVIEWS

The interviews in this section were conducted during the course of the study from a cross section of retailers in the market area.

Los Angeles Area:

COMPUTERAMA

3808 West Verdugo
Burbank, CA 91505 (213) 848-5521

Ms. Mary Marca, Manager

Computerama is a retail computer store which stocks Apple, IBM, IMS and Sony hardware and a variety of software. IBM and Apple computers in the \$1,500-\$5,000 price range are the most popular. Computerama sells 20 to 30 microcomputers with software each and about 8 to 10 printers per month. Computerama buys hardware directly from the manufacturer and software through a distributor. Computerama is having delivery problems with their current suppliers because not all the elements of a given computer arrive at the same time. Computerama sells software with every computer sold, but sells little additional software. Computerama is now looking at microcomputers and peripherals for the business market. Computerama would be interested in looking at Canadian products, but not necessarily in taking on a new line.

MICROSOLUTIONS

8511 Washington Boulevard
Culver City, CA (213) 559-3940

Mr. Alan Hanckel, Chief Buyer

MicroSolutions is a retail computer store which sells about 75 percent hardware and 25 percent software. The most popular products in stock are Molecular, IBC and Kaypro computers which sell for \$2,000 to \$50,000, and Multiplan software which sells for \$1,000 per package. MicroSolutions sells approximately \$75,000 worth of microcomputers, \$1,500 worth of printers, and \$10,000 worth of software every month. Alan Hanckel, buys for the most part through distributors. He expects immediate exchange of defective products. MicroSolutions also has its own service department. MicroSolutions has established product lines, and is not really interested in taking on new lines at this point. Mr. Hanckel has not been exposed to Canadian computer products and he would like to see brochures so that he can compare them to the computers he sells.

MICROAPPLICATIONS

3920 Birch, Suite 104
Newport Beach, CA 92660 (714) 476-2900

Mr. Paul Kaylor, Buyer

MicroApplications operates two retail stores and one consulting office. MicroApplications designs and sells computer systems. The hardware stocked includes Alpha Microsystems, Apple and Altos. Their most popular item is the Alpha Microsystems 32 bit, medium-scale business computer, which sells for \$10,000 to \$75,000. MicroApplications sells a number of different brands of software, most of which are accounting packages \$500 to \$1,500 per module. Paul Kaylor is familiar with Canadian computer products from reading trade magazines. He buys both through distributors and directly from manufacturers. He is experiencing problems with his current suppliers in that some distributors have extended delivery times.

MicroApplications sells 4 to 6 microcomputers for \$10,000 each, 10 low priced printers (Okidatas), and 4 to 6 software packages (sold with the microcomputers) per month. Paul Kaylor is currently looking for another line of hardware to supplement the lower priced end. Mr. Kaylor is looking for small, single-user microcomputers in the \$6,000 to \$8,000 price range, and he is considering the IBM PC, the IBM XT and the Columbia, which sell for about \$6,000 each. He would also like to see software for these smaller computers, such as accounting packages.

INTELLITOYS

8522 Beverly Boulevard
Los Angeles, CA 90048 (213) 732-5409

Mr. Neil Bailey, Vice President

Intellitoys operates 2 stores in the L.A. area and sells high quality toys and consumer oriented computer products. Intellitoys stocks IBM, Apple, Commodore, and Atari hardware and a variety of independent software packages. Their most popular computers are IBM's in the \$2,000-\$4,000 price

range. Intellitoys sells 6 to 8 microcomputers for \$500-\$800 each, 2 printers for \$600-\$700 each, and 200 software packages for about \$35 each per month. Intellitoys buys both directly and through a distributor, and sells about 40 percent hardware and 60 percent software. Mr. Bailey is experiencing problems with his current suppliers, especially in price support and would definitely be interested in looking at Canadian computer products.

FEDERATED GROUP

5655 East Union Pacific Avenue
City of Commerce, CA 90022

Mr. Kirk Keys, Buyer,
Computer Department (213) 728-5100

The Federated Group operates 15 stores which sell stereo, video and computer systems. Total sales are worth \$89 million per annum. Federated sells about 30 percent hardware and 70 percent software. Federated stocks Atari, TI, Commodore, Epson, NorthStar, Coleco, Mattel, and Franklin hardware. The company also sells a variety of software. Currently, Federated's most popular computers are the Commodore home microcomputers which sell for \$79-\$200. Federated sells mostly entertainment software, plus some educational/home management software and some business software. Mr. Keys commented that the market is dividing into a price conscious segment and a sophisticated home computer and small business segment, which are far less price conscious. Mr. Keys believes that the home computer category is disappearing because customers now want either very low priced "toy" computers for entertainment purposes or sophisticated, challenging small business or personal computers, which sell for a higher price.

Mr. Keys is interested in looking at hardware in either category together with compatible software. Federated is experiencing problems with both delivery and service from suppliers. Canadian companies wanting to supply Federated must be prepared to maintain a service facility in the market area.

Mr. Keys explained that California law stipulates that service stations should be located no more than fifty miles or one hour from the point of purchase and that many computer companies do not conform to this requirement. He said that consumer action can be expected shortly to correct this situation. Mr. Keys is familiar with Canadian audio equipment but not with Canadian computer products. He would definitely be interested in looking at Canadian computer products and he would appreciate it if brochures were sent to him.

MAY COMPANY

Platt Music
625 Alaska Avenue,
Torrance, CA 90503 (203) 320-5880

Ms. Marni Godfried, Chief Buyer for the electronic departments of Southern California May Company Stores

May Company operates 3 stores with electronics departments in Southern California. May Company stocks Atari, TI and Commodore computers. Although business is soft, \$100 Atari and Commodore computers are popular. May Company usually sells one piece of software for every piece of hardware. The company sells approximately 150 \$100 microcomputers, 10 low priced printers and 300 software packages in each line per month. May Company's customer is the home-user and the chain is interested in looking at moderately priced units and would definitely consider Canadian products if exposed to them.

GEM CO.

La Grand Corporation
3090 East Airport Way
Long Beach, CA 90806 (213) 424-0717

Mr. J. Jones

GEM CO.

2169 West Redondo Beach Boulevard
Gardena, CA 90247 (213) 327-9550

Mr. Sid Dutcher, Manager, Electronics Department

Gem Co. operates a chain of 60 membership department stores with electronics departments which stock Commodore, TI, and Atari hardware. Total sales are \$176 million per annum. Gem Co. managers could not comment on the rate or the volume of computer products Gem Co. sells or buys in. However, they did say that each electronics department buys software from independent distributors and hardware from La Grand Corporation, which deals directly with manufacturers. Gem Co. would be interested in looking at Canadian computer products. The company is currently looking at keyboards, computer monitors, printers, telephone interfaces and disc drives.

San Francisco Area:

COMPUTER CONNECTION

214 California Street
San Francisco, CA 94111 (415) 781-0200

Mr. Larry Bovenzi, Chief Buyer

Computer Connection is a retail computer store which stocks Apple, Epson, Sony, Fortune Systems, NorthStar, Columbia and Kaypro products. Its most popular computers are the Kaypro and Apple basic systems in the \$1,500-\$4,000 price range. Computer Connection sells 12 to 15 microcomputers for \$2,000 each, 12 to 15 printers for \$600 to \$700 each, and 60 business software packages for \$200 each every month. Computer Connection already stocks a Canadian word processing package which they buy through a distributor. Mr. Bovenzi is currently interested in looking at software for IBM PC compatibles, especially accounting, word processing and data base packages, and at any competitive hardware.

He would definitely like to investigate more Canadian computer products.

SUNSET COMPUTERS

2329 Irving Street
San Francisco, CA 94122 (415) 753-1040

Ms. Katia Jensen, Manager

Sunset Computers is a retail computer store which stocks NorthStar, Franklin, Epson, Hyperion, Morrow and DEC hardware; NEC Comrex, Okidata and Star Mycronics printers; NorthStar, MicroPro, Star, Ortho-code and a variety of other software. Its most popular hardware is NorthStar, Epson and Hyperion computers in the \$3,000-\$8,000 price range and NEC and Epson printers in the \$400-\$1,000 price range.

Sunset Computers sells microcomputers with software for \$3,000 each and 6 to 8 printers for \$600-\$1,300 each per month. Sunset Computers sells about 75 percent hardware and 25 percent software and is interested in looking at any products related to microcomputers for business and professional people, including Canadian computer products.

INFORMATION SOFTWARE COMPUTER SYSTEMS

2637 Pleasant Hill Road
Pleasant Hill, CA 94523 (415) 680-0324

Ms. Lisa Morrison, Sales Manager

Information Software Computer Systems operates 3 stores which design and sell systems. They stock Calstar, Basis, Epson, Osborne, Eagle and Franklin computers, which range in price from \$1,295 to \$4,995. The Calstar and Basis computers are the most popular. Information Software Computer Systems manufactures almost all the software for the systems they sell. Most packages the company sells consists of games but some accounting and medical packages are also sold. Information Software Computer Systems sells about 75 percent software and 25 percent hardware. Information Software Computer Systems sells about 10 of each type of microcomputer they stock, 10 printers at \$500 each, and about 200 software packages per month. The company plans to be selling about 1,500 packages per month by the end of 1983 because they will begin to display their software packages in the same way that record stores display albums. Information Software Computer Systems is interested in looking at microcomputers for home use and mini-computers for small business. Ms. Morrison is not familiar with Canadian computer products but she would like to look at Canadian hardware products.

ECX COMPUTER COMPANY

2678 North Main Street
Walnut Creek, CA 94596 (415) 944-9277

Mr. Randy Hartwig, Manager

ECX Computer Company operates 3 stores which sell Kaypro, Franklin, Commodore, and Victor computers to both home and business users. The Victor, Kaypro and Commodore computers are the most popular and these range in price from \$80 to \$5,000. ECX Computer Company sells about 80 microcomputers for \$1,700 each, 160 printers for \$400 each and 1,000 software packages for \$225 each, every month. ECX Computer Company buys directly from manufacturers and sells about 80 percent hardware. ECX Computer Company buys a software line from Canada as well as a Canadian computer. The company likes the products but said the service cycle is too long and that U.S. duty increases their cost price. ECX Computer Company is currently interested in business software for Victor 9000 and Commodore 64 computers, and would like to see brochures for Canadian products.

COMPUTERLAND CORPORATE

Products Division
30985 Santana
Haywood, CA 94544

Hardware: Mr. Dan Drunglas (415) 487-5000
Software: Ms. Michelle Walter

Computerland Corporate operates 500 franchise retail computer stores which sell about 60 percent hardware and 40 percent software, mostly for the small business market. Total sales are worth \$451 million per annum. Interviews with two Computerland stores in California are summarized below. Buyers for the individual Computerland stores buy most of their merchandise through Computerland Corporate but if Computerland Corporate does not handle a product for which individual stores have a demand, the individual stores can buy directly from the manufacturer. Computerland recently bought a line of Canadian computers which have been popular. The company would like to hear from other Canadian manufacturers. Potential suppliers should contact Computerland Corporate.

COMPUTERLAND

10600 West Pico
Los Angeles, CA 90064 (213) 836-4498

Mr. Brian Brumit, Chief Buyer

Brian Brumit buys for 3 Computerland stores in the L.A. area. His most popular computers are by IBM, Apple, Compaq, Digital, Osborne, and Hyperion. His stores sell about 100 microcomputers for \$2,000 to \$10,000, 75 printers for \$500 to \$3,000 each, and 200 software packages for \$100-\$700 each, every month. Mr. Brumit says that he is not experiencing any problems with his current suppliers and that the lines he carries are established, but that he would be interested in looking at brochures from Canadian computer manufacturers.

COMPUTERLAND

117 Fremont
San Francisco, CA 94105 (415) 546-1592

Mr. Jed Oleson, Manager

Jed Oleson runs 3 Computerland stores in the San Francisco area which stock IBM, Compaq, DEC and Apple hardware and a variety of lines of software. His most popular items are IBM computers in the \$4,000-\$10,000 price range. He is now interested in looking at IBM compatibles in the \$1,500-\$3,000 price range, but he would definitely like to investigate Canadian products because he is experiencing problems with his current suppliers.

THE SOFTWARE STOP

4151 E. Carson Street
Lakewood, California 90712 (213) 420-9315

Alec Troudfout, Manager

The Software Stop is a retail software store which stocks over 100 different brands of software. Software Stop sells about 85 percent software and 15 percent peripherals. Their business packages range in price from \$50 to \$500, while their home computer software runs from \$25 to \$100. Software Stop sells approximately 500 packages (for home and business use) per month. The company buys from distributors. Mr. Troudfout is satisfied with his current suppliers, but is always looking for new products. He is not familiar with Canadian software and he would like to learn more about it.

THE SOFTWARE CENTER

9929 W. Jefferson
Culver City, California 90230 (213) 473-1136

Ron Moss, Chief Buyer

The Software Center operates 50 stores that sell only software and carry every major U.S. software manufacturer, including Micropro, Vivicorp, Digital and Ashton-Tate. Recently, software by Digital Research Products in the \$200-\$600 price range has been the most popular. The Software Center buys both directly and through distributors. Mr. Moss would be interested in looking at any microcomputer-related software for small business applications even though he is satisfied with his current suppliers. He feels there is no significant reason to go outside U.S. borders given the distribution and importing problems of dealing with foreign manufacturers.

BUSINESSLAND, INC.

3600 Stevens Creek Blvd.
San Jose, CA 95117 (408) 554-9300

Mr. Enzo Torresi, V.P. Marketing

Businessland is a relative newcomer to computer retailing. The company is a public company, operat-

ing 23 stores, which has been in business less than three years. The growth of this company has been remarkable. Revenue for the last quarter of 1982 was \$720,000.00. Revenue for the last quarter of 1983 had, however, grown to \$21,641,000.00! Revenue for the last quarter was only based on the sales from 19 stores. We were advised that the company has now reached a \$100 million running rate. Businessland plans an extensive chain of stores for the East Coast U.S. commencing March 1st, 1984. The company attributes its success to professional management and the promise of full customer support and training for all hardware and software purchased. The company services all the equipment and software it sells. All company personnel including retail staff must undergo 30 days training at the company headquarters in San Jose.

Businessland is an IBM dealer. All the equipment it handles is IBM compatible. Products sold include the IBM PCXP and the larger Junior, The Eagle product line, Compaq products, The Burroughs B20 Convergent Technology System, The Comm Ether Net System, and the Corvus Omni Net System. Businessland is the only retailer selling the Xerox Memory-writer and the larger Xerox copier systems. The company has recently taken on the Workslate 895 system. Businessland will only consider taking on any new line (whether hardware or software) if the supplier company has a minimum of \$5 million of sales and is prepared to spend at least \$1 million a year on advertising with Businessland. The secret to this company's success seems to be that it has taken on a far more expensive product range than its competitors.

Businessland would like to move into vertical markets and has been looking for a high quality IBM compatible to reduce its dependence on IBM. Exceptional products will always be considered provided the supplier company offers exceptional support.

Interested Canadian suppliers should contact Mr. Torresi.

Denver Area:

VIDEO CONCEPTS

American Home Video
5200 Denver Tech Center Parkway
Inglewood, Colorado 80111 (303) 771-1282

Video Concepts operates a chain of 179 stores which sell video recorders, video cameras, audio systems, laser discs, televisions, walkmans, computers and software. Total sales are \$115 million per annum. Interviews with two Video Concept Stores are summarized below. Video Concepts stocks TI, Atari, Commodore and NEC hardware and software. Video Concepts sells more software than hardware. The company has been concentrating on the home market but is now planning to move into the business market. Thus, Video Concepts will soon begin to sell IBM, Franklin and Osborne computers, designed for small business. Video Concepts stores are supplied almost exclusively by American Home

Video, which deals directly with manufacturers. Video Concepts would be interested in looking at Canadian Computer products. Potential suppliers should contact:

VIDEO CONCEPTS

8501 West Bowes
Littleton, CO 80123 (303) 973-9146

Mr. Andre Daniels, Manager

Andre Daniels told us his most popular computers are the \$149 TI, the \$249 Commodore and the \$449 Atari. His store sells about 2 complete systems including a microcomputer, a printer and software for \$2,000 each plus an additional \$2,000 worth of software every month. Andre Daniels is not familiar with Canadian computer products and he would like to see brochures.

VIDEO CONCEPTS

1600 28th Street
Boulder, CO 80301 (303) 443-9710

Mr. Don Lyman, Manager

Don Lyman told us that his most popular computers sell for \$200-\$500 and his most popular software packages sell for \$30-\$40. His most popular computer is now the Atari 800. He also sells about 2 systems and 40 software packages per month. Larger Video Concepts stores in Denver sell 5 to 16 systems plus 100 software packages per month. Don Lyman is not familiar with Canadian computer products and would be interested to learn about them.

9.3 SUMMARY

The remarkable growth potential in the retail segment of the computer industry is of particular interest to Canadian companies producing medium and above priced microcomputers for professional and business use. The Southwestern U.S., which has been a constant leader in almost the entire field of computer technology, has become a major computer retailing center.

The retailers in this report show clearly that they are interested in looking at up-priced microprocessors and related products. Because retail expansion has been so rapid, there has been very little opportunity for a conventional type of retail distribution pattern to develop. Retailers interviewed advised that they buy most of their requirements from distributors who appear to be "wholesalers" to the retail computer industry.

In order to be successful in this market, Canadian suppliers will need to sell through an established distributor or alternatively make arrangements with an agent or selling organization to hold a serviceable quantity of stock in the market area. Some companies may prefer to establish their own stock distributorship.

10.0 DEFENSE OFFSET SPENDING POTENTIAL

Canadian companies should be aware that possibilities exist for doing business with major U.S. defense contractors which are engaged in supplying the Canadian Government with military materials. On occasion, it is stipulated that a defense contractor will purchase an agreed amount of goods or services from Canadian industry as a prerequisite of being awarded a defense contract. There is generally no restriction on the type of business activity which can be undertaken by the U.S. defense contractor providing target figures are met.

California is a major center for the aerospace industry and consequently a number of prime defense contractors are located there. Other contractors are located in Arizona, Utah and Colorado. Canadian computer manufacturers and software companies may wish to investigate defense contractors with outstanding offset business. In order to obtain up-to-date information on defense contractors, we recommend that interested Canadian companies should contact the Canadian Government operated trade commissioner posts located in Los Angeles and San Francisco, and their offset project personnel.

11.0 PROMOTIONAL METHODS

11.1 TRADE SHOWS

Most U.S. industries which must reach a large and fragmented market rely heavily on the trade show as one of the most viable and effective means of presenting their products to the buying trade. The computer industry is no exception. However, new suppliers can be readily confused by the large number of computer conferences and shows which are held regularly throughout the U.S. In order to assist Canadian companies make an effective selection we have provided comparative notes on the most prominent shows which are held specifically for the South-western market.

Computer manufacturers, distributors, software and other industry specialists, and the trade show promoters were asked their opinion on the relative merits of various shows. These comments are summarized below.

The NCC (National Computer Conference and Expo) Show:

The NCC show is recognized as the nation's largest show for computer manufacturers. Most computer manufacturers consider exhibiting a vital part of maintaining their corporate image in the face of ever stiffening opposition. Manufacturers frequently premier their new products at NCC and exhibits cover the entire range of computer products including:— hardware, software, services, and publications. Anyone can register to attend. For this reason the attendance base is broad and includes: dealers and buyers from all categories, including consumers, systems analysts, engineers, and manufacturers. The NCC Show is an annual event. In 1983 NCC was held at the Anaheim Convention Center, California, during May. The attendees came mainly from the Western U.S. The 1984 NCC will take place in Las Vegas (July 9th–12th) at the Convention Center. NCC is organized by The American Federation of Information Processing Societies (AFIPS). Management information for the NCC and other shows mentioned is provided in the Appendix.

The Office Automation Show:

Office Automation is an annual show, usually held in February. The 1983 show was held in Philadelphia. The 1984 show will be held at the Los Angeles Convention Center. As its name suggests Office Automation is a national showcase for products used in office automation. Word processors, personal computers, intelligent typewriters, copiers, telecommunications systems, and many other products will be found at the show. Projected attendance for the 1984 show is 25,000. Although the show is open to all comers, most attendees are pre-qualified (i.e. they receive some form of guest pass from exhibiting companies or the organizers). The bulk of Office Automation's audience comes from the show's immediate vicinity; however, there is usually a significant national and international attendance as well.

NCGA Show (National Computer Graphics Association):

The National Computer Graphics Association Show was mentioned by a number of companies we interviewed. The show is held in a different city each year. Last year's show was in Chicago while the 1984 show will take place in San Francisco. Canadian companies wishing to break into the computer graphics field in the U.S. should take a serious look at the NCGA show. Attendance at NCGA mainly consists of electronics industry professionals and management, although some retailers and academics also attend.

Wescon and Mini/Micro West:

Wescon and Mini/Micro West are held concurrently. The shows are in San Francisco in odd years and in Anaheim in even years. *Wescon* is a broad based electronics show covering the following three categories: components, microelectronics and fiber optics; instrumentation, test equipment and control systems; production and packaging. The show is strictly for professionals in the electronics industry and is not open to the public. 78 percent of *Wescon's* attendees come from the western U.S., 6 percent from the eastern U.S., and 16 percent from overseas. Fifteen Canadian companies exhibited at the last *Wescon* show.

Micro and minicomputers, peripherals, software, and components are displayed at *Mini/Micro West*. The show is specifically designed for original equipment manufacturers (OEMs) and is only open to the computer industry. Three Canadian companies exhibited at the most recent *Mini/Micro* show. Generally both shows have a good reputation and should be considered seriously by Canadian suppliers.

Consumer Electronics Show:

The Consumer Electronics show's audience consists mainly of retailers and dealers viewing the latest in electronic products including computers. The show is not open to the general public. Attendance at the most recent Consumer Electronics Show which was held in June at McCormick Place in Chicago, was 80,000. The show is held twice a year; the next show will be held in Las Vegas in January 1984.

Comdex:

Comdex is recognized as a leading international meeting in the computer industry. The show is not open to the general public and most of the attending audience is pre-qualified. Comdex is a forum for manufacturers, OEM's, and dealers. Last year's attendance was 81,000; there was a Canadian Government sponsored exhibit which included eight companies. A further twenty-five companies exhibited independently or with U.S. sales organizations. Comdex is held twice a year, once in the East and once in the Western U.S. Last year's western Comdex was held in Las Vegas. Attendance was approximately 50 percent — Western U.S. and 50 percent — Eastern U.S.

Word Processing Office Technology, West Coast Exposition & Conference:

This exposition takes place annually at the San Jose Conference Center. Last year the show attracted 32,500 visitors who came to examine the latest in electronic office equipment.

Many Canadian manufacturers will be aware of the leading West Coast computer shows which we have discussed. The vital statistics for these shows are presented in Table 11.1 following. Manufacturers may, however, find that smaller or more specialized shows are more suitable for their needs. A number of companies we talked to in the market areas only attend events which relate directly to their specialized products. These companies are in the main packaged software producers or turnkey systems houses who participate in medical, agricultural, business or other conferences. Details of a number of specialized shows are contained in the Appendix and manufacturers should be aware that they can obtain further information on area trade shows and conferences from Canadian Trade Commissioner Posts in the market areas.

Selecting the Right Trade Show:

It should be noted that, while a number of trade shows mentioned previously attract national and even international exhibitors, their audiences are primarily regional and the majority of sales leads obtained will be local.

Choosing the right show can be a problem. Canadian exporters should check the trade press events calendars which usually list shows up to one year in advance to determine which shows cover their specific products in the targeted marketing area. It is also advisable to check that there will be no competition from "national" shows in the same time frame, which could affect the attendance level at the chosen show.

We advise Canadian companies to contact Canadian Consulates in the marketing area. Commercial Officers from the Consulates know the leading trade shows in their areas and can assist in selection.

The show management or organizers will provide prospective exhibitors with show profiles and attendance audits. Using the information obtained it will generally be possible to measure the approximate cost per potential visitor and the principal reason why customers attend.

It is advisable to make a space reservation as early as possible. Competition for space, particularly at the larger shows, is fierce and space is limited. Late comers often find they are allocated space away from the main show traffic.

Special Shows/User Group Meetings:

Some products may benefit from exposure at a specialist show or conference. DEC communications or database software, real estate management software, data logging equipment, and many other products fall into this category. The type of special event that Canadian manufacturers should consider includes area realtors shows, Instrument Society of America conferences, Unix User Group meetings, and many others.

Participation costs for special events are likely to be considerably lower than for trade shows. It is important, however, to have technical specialists available at these events who can discuss technical problems with specialist customers.

Costs/Getting the Most Out of Trade Shows:

It is often expensive to exhibit at a trade show. Typical costs can be in the vicinity of Cdn. \$10,000-\$12,000 (including space rental, travel, salaries, and expenses; but not including the cost of a custom stand). Trade shows are considered the single most effective way of promoting products to a large number of potential customers. In order to justify the costs, however, it is necessary to qualify the leads obtained and make the right moves to conclude business with an acceptable percentage of those potential customers. For this reason it is essential to bring the best possible sales people to the show and to be properly organized to follow up all the leads. It is important to remember that it costs a visitor on the average \$700

Table 11.1

COMPARISON OF ATTENDANCE: LEADING COMPUTER SHOWS FOR THE SOUTHWESTERN MARKET

Show/Sponsoring organization	Venue Next show	Year/Month	Total Sq. Footage	Length of show	Open to Canadians/Foreigners	Data on Last Show Exhibitors		
						Total	Canadian	Attendees
Comdex Interface Group	Las Vegas Conv. Cent.	Nov. '83	500,000	4 days	Yes \$19.50 ft ²	1500	20	70,000
	Atlanta	April '84	350,000	4 days	"	700	-	35,000
WCC Show Amer. Fed. Info. Processing Soc.	Las Vegas Location varies	May '84	370,000	5 days	Yes \$17-19 ft ²	655	9	100,000
Office Automation Show Amer. Fed. Info. Processing Soc.	L.A. Conv. Center	Feb. '84	90,000	3 days	Yes \$17-19 ft ²	150	3	20,000
Hescon Electronic Conventions Inc.	San Fran. Even years in Anaheim	Nov. '83	144,000	4 days	Yes \$1900/2000 booth	800	15	70,000
Mini/Micro West Electronic Conventions Inc.	San Fran. Even years Anaheim	"	27,000	"	"	182	3	32,000
MOCA Show National Computer Graphics Assn.	San Fran. Performing Arts Center	June '84	140,000	4 days	Yes \$15-18 ft ²	206	4	22,473
Consumer Elec- tronics Show Electronic Industries Assn.	Las Vegas Conv. Center	Jan. '84	700,000	4 days	Yes \$7-9.50 ft ²	1250	-	80,000
	Chicago McCormick Place	June '84	"	"	"	"	"	"
Word Processing Office Technology Carlsidge Assn.	San Jose Conv. Center	Oct. '84	125,000	3 days	Yes \$950 booth	150	-	32,500

Source: Show management various shows.

to attend a trade show. People visit shows in order to purchase equipment and the right contact at a show can complete 75 percent of the selling job.

Canadian companies should plan to make potential visitors aware of their presence at the show in advance. Selective trade journal advertising and press releases are both important. Press releases should be sent to the show PR agency at least four weeks prior to the show date. Many trade shows produce show previews which are either mailed to attendees in advance or distributed at the show itself. All trade shows publish official guides or directories. Advertising in a show directory is also an effective way of reaching potential customers. All of the larger shows have press centers. It is advisable to provide a reasonable number of press kits and leave them at the center while the show is open. Most trade show management provide exhibitors with free invitation tickets for preferred customers. These should be distributed with care and follow-up phone calls can be made to key customers.

11.2 TRADE PUBLICATIONS

The study confirmed that most professionals in the computer industry read trade publications. Opinions varied widely as to which publications are effective. We found that manufacturers and distributors tend to subscribe to a greater number of magazines than systems house and software applications specialists. There are a large number of computer magazines published in the U.S. Table 11.2 following provides some information on preferences stated by attendees at a recent national computer show. A general description of a number of the leading publications is provided in this section and contact addresses for these and other publications are given in the Appendix.

Table 11.2
Publications Read Regularly by Attendees at a Leading Computer Show

Computer World	35%	Personal Computer	3%
Datamation	26%	Data Pro	2%
MIS Week	14%	Electronics	2%
Info Systems Magazine	10%	Electronic News	2%
BYTE	7%	Modern Office Procedures	2%
Info Systems News	7%	Popular Computing	2%
Business Week	6%	Software News	2%
Wall Street Journal	6%	Creative Computing	1%
Computer Decision	5%	Computer Business News	1%
Info World	5%	Data Decision	1%
Forbes	4%	MIS News	1%
Mini Micro	4%	N.Y. Times	1%
Data Communications	3%	Office Automation	1%
Fortune Magazine	3%	Word Processing	1%
The Office	3%	None	10%

Data based on interviews with 507 attendees at 1982 INFO Show in New York.

Source: Ralph Head & Affiliates.

Computer World

Computer World is published weekly. Circulation is now over 120,000. The publication is aimed at data processing managers, MIS directors, top corporate managers for Fortune 1000 companies, and third party OEMs. Computer World is the only widely read publication which is distributed by paid subscription, a fact which indicates that its editorial is of major interest to the readers. We were advised that between 15-20 Canadian companies advertise regularly in the magazine. Some articles from Computer World are reprinted in Computing Canada. Computer World features articles on developments in the computer industry, the use of computers in EDP/MIS, and office automation.

Datamation

Datamation is a monthly publication with a controlled circulation of 160,000. The magazine features technical, semi-technical, and general articles on the computer industry. The magazine is generally regarded as a leading data source by the industry. The magazine's readership consists mainly of data processing managers in the larger U.S. companies, senior management, and university and government users.

MIS Week

MIS Week is distributed to a controlled subscriber list of over 100,000. The magazine is published weekly and aims to disseminate information designed to assist in the planning or purchasing of information systems in any of the following categories: data or word processing, voice/text/data communications, advanced telecommunications systems, and repro-graphics. The magazine is intended mainly for MIS departments.

Information Systems News

Info Systems News is also distributed free to a controlled subscriber list which presently totals in excess of 100,000. Recipients are managers, engineers, or information systems directors. The magazine contains articles on new computer hardware, software, and services, as well as marketing, management, and career opportunities. A number of Canadian companies have advertised in the magazine.

Byte

Byte Magazine currently estimates its circulation to be in excess of 300,000, with an expected increase to 450,000 within the next year. Byte is user oriented and subscribers are generally sophisticated professionals or consumers. Subscriptions are paid for. The magazine contains articles on building, buying, and using personal computers and computer systems at home or in the office.

Mini Micro Systems

Mini Micro Systems is a technical magazine edited for OEM systems integrators or for sophisticated end users. Mini Micro regularly summarizes new prod-

ucts and selected product surveys are also featured. To date the magazine does not have many Canadian advertisers.

Trade Press Advertising:

The cost of corporate level advertising in the trade press can be very high. A full page insertion in Byte magazine, for example, costs about \$5,000. In order to maintain a product line or corporate image it will be necessary to advertise consistently. Single advertisements will not achieve the desired effect.

All magazines provide media kits for prospective advertisers. Information contained in media kits includes advertising rate costs, an editorial calendar which highlights the main features to be produced on a month by month basis, and a circulation audit. The circulation audit will be useful in assisting advertisers to assess the value of their advertising through the kind of circulation the magazine achieves. Magazines have either an unqualified circulation (the magazine is obtained by paid subscription or can be purchased directly) or a qualified circulation (the magazine is usually distributed free to a strictly qualified professional audience). In our opinion, qualified magazines offer the best return on advertising. This is because replies from magazines with a qualified subscription are usually from interested professionals or potential end-users in the industry. We suggest Canadian companies who are seriously considering consistent magazine advertising should consult a reputable advertising agency who can advise on how to achieve the best return for their advertising dollar.

Companies who plan to advertise must make sure they are completely prepared to handle the extra workload which could result from large quantities of responses. Few small companies have the resources to follow up effectively. Companies without the extra manpower resources to handle this extra load can consider employing a mail list company. One Canadian company performing this function is MIS — International Mailing System Division of Better Packages of Canada Ltd., 150 Telson Road, Markham, Ontario, (416) 492-1152. It should be remembered, however, that the cost of using a mail list company can be high, possibly \$3-\$5,000 per month.

Editorial Advertising:

Most magazines are constantly looking for industry news items and information on new products. This valuable source of free publicity is available to companies who are prepared to take the simple step of providing regular press releases. Personal contacts made with key writing staff at magazines can be invaluable to any company entering a new market. We recommend all Canadian exporting companies should take pains to build an effective list of trade, business, and consumer publications. Companies should consider using freelance journalists or professional PR agents to produce their press releases or articles. Professional production and writing will always produce a higher success ratio.

Mailing Lists:

Mailing lists can often provide a viable marketing channel. Their effectiveness depends on the customer group to be reached and the type of product to be sold. Lists can be bought from a large number of companies who specialize in list production. Costs vary considerably depending on the source. The most important aspect to be considered is the quality and current nature of the list. Potential exporters should remember that costs on the average range from \$1-\$1.50 to produce an effective and attractive mailing piece. A criticism frequently leveled against Canadian companies during the course of this study was that the quality of Canadian literature and advertising is consistently low. To overcome this poor image, we suggest employing a reputable advertising agency or a professional graphics production organization.

11.3 SEMINARS

We recommend that Canadian manufacturers should consider the possibility of holding seminars for selected customer groups in the market areas. An alternative would be to participate with other manufacturers in government sponsored seminars if these can be arranged. Eighty percent of turnkey systems operators and hardware distributors we contacted during the study were interested in attending this type of event and active business contacts should be made by this method. Manufacturers should discuss this question with specialists in the Department of Industry, Trade, and Commerce/Department of Regional Industrial Expansion (ITC/DRIE), who will be able to outline available assistance.

In our opinion, computer, peripheral and components manufacturers will find the interviews with companies contained in this report, together with effective use of a good trade directory*, and discussions with Commercial Officers from Canadian Trade Commissioner Posts in the market areas, the best way of constructing an effective invite list for a seminar. Software package manufacturers and system houses could find their best course of action is to contact commercial, business or scientific associations directly related to their specialties.

* Data Sources, published four times a year, by the Ziff-Davis Publishing Company (One Park Avenue, New York NY 10016 — tel: (212) 725-4733) is one of the best available.

11.4 PRODUCT LITERATURE

The computer industry, based firmly in advanced technology, relies heavily on hard hitting, factual, attractively designed literature to help sell its products. Most companies we talked to which had knowledge of Canadian computer companies and their products commented that Canadian sales literature is often dull and unexciting. An improvement in the quality and design of product literature could increase Canadian companies' chances in all U.S. markets. Manufacturers should make sure that adequate supplies of literature are always available in the market area.

12.0 DOCUMENTATION AND GENERAL EXPORT INFORMATION

Canadian exporters require market access information which falls into two basic categories: customs and non-customs. Customs information covers such subjects as documentation, tariff classification rates and valuation for duty. Non-customs information relates to other U.S. laws which affect imports and are concerned with such things as consumer product safety, environmental protection, and so on. Information on both these questions may be obtained from the U.S. Marketing Division of the U.S. Trade and Investment Development Bureau, Department of External Affairs, in Ottawa. (Phone number (819) 994-0965). Such information is also obtainable from the U.S. Customs Service or U.S. customs brokers. However, we recommend that Canadian computer companies and software manufacturers intending to export to the U.S. should discuss these questions with the U.S. Marketing Division first. Specialists from the Division can obtain binding classification rulings from U.S. Customs Service headquarters on behalf of Canadian companies. These binding rulings establish firm duty rates for pricing purposes to anywhere in the United States.

Tariff Classification (Rate)

All goods entering the U.S. are subject to U.S. Customs Regulations. The rates of duty applicable to various types of computer products are varied and should be individually obtained from one of the sources mentioned above. Tariff treatment applicable to merchandise imported into the United States is outlined in the Tariff Schedules of the United States (TSUS). The TSUS includes descriptions of commodities accompanied by their respective rates of duty. We have included sample pages from the current (1983) TSUS in the Appendix.

Generally, computer products are classified under the following U.S. tariff item numbers: 676.15, which covers computer central processing units, including microcomputers; 676.52, parts for such computer equipment; and, 676.30, input and/or output devices such as printers, modems and CRT terminals for use in conjunction with computers. Appended 1983 duty rates for these tariff items are as follows:—676.15 — 4.7 percent; 676.52 — 4.7 percent; and, 676.30 — 4.4 percent respectively.

Computer software is classified under the following U.S. tariff item numbers: 724.45, unrecorded or unformatted magnetic recording media (e.g. *blank* floppy disks or *blank* tape cassettes) suitable for use with computers — 5.1 percent; and 724.40, magnetic recordings (e.g. *recorded* floppy disks or *recorded* tape cassettes) — 0.9 c per sq. ft. of recording surface. Articles classified under TSUS item 724.40 (recorded) can be imported free of duty until August 11th, 1985, (TSUS temporary item 960.65) as a result of a Canada/U.S. trade agreement.*

* Even if duties are reinstated for software, the governing rate is sufficiently low that it should not seriously affect Canadian software exports.

Valuation for Duty:

The basis of valuation for duty is normally the "arms-length" transaction price between the Canadian seller and the U.S. purchaser. In cases where the companies' transacting business is related, the value for duty purposes may be different than the actual transaction price.

Drawbacks:

Canadian computer companies should also be aware that the Canadian Customs Tariff includes several drawback provisions that enable manufacturers to recover duty paid on materials imported for incorporation in the manufacture of goods which are subsequently exported. A substantial refund of duty can usually be obtained. Drawback provisions have been included in the Canadian Tariff to assist Canadian manufacturers competing in export markets. Information on duty drawbacks can be obtained from Revenue Canada, Customs and Excise, Tariff Relief Programs, Ottawa, K1A 0L5.

Invoicing for U.S. Customs:

U.S. Customs does not require a special form of customs invoice. However, there are information requirements that must be completed on commercial invoices. Exporters should check with U.S. Customs or a U.S. Customs broker to ensure that these requirements are fulfilled.

Marking Country of Origin:

Every imported article must be legibly and conspicuously marked with the English name of its country of origin, unless the article is specifically exempted from marking. The object of this requirement is to indicate to the ultimate purchaser in the U.S.A. where the article was manufactured.

Canada Customs Entry Form B-13:

All commercial export shipments to the United States should be accompanied by a Canada Customs Entry Form B-13. This form is essential for Canadian manufacturers since it identifies the goods that have been exported and, where necessary, facilitates their return to Canada as in the case of computer equipment which may need to be returned to the point of manufacture for modification, retrofitting, repair or replacement.

The Customs Broker:

Each shipment must be cleared through U.S. Customs at a customs port of entry. Since documentation required by U.S. Customs has reached such a degree of refinement today, it is recommended that the services of a licensed U.S. customs broker be used to clear shipments. In the case of goods which are being transported by road, it is important that the Canadian exporter instructs his transportation company to surrender accompanying documents for customs clearance to a specific broker at the point of entry into the U.S. If this is not done, the carrier may choose his own broker, which can present problems. The position is somewhat different with goods

that are shipped into the U.S. by air. In such cases, unless prior suitable customs clearance arrangements have been made through a U.S. customs broker, shipments will be transferred to warehouse storage facilities after a grace period has been allowed. From this point, retrieval can be costly. Canadian companies who export their products by air-freight and intend to distribute the goods themselves in the U.S. should appoint a broker located at the point of arrival in the U.S.

Canadian exporters should choose their U.S. customs broker with care. A close relationship with the right brokerage house is the best way to ensure smooth, speedy clearance and subsequent delivery. We advise exporters to discuss their program with several brokers and compare the advantages offered before selecting. Brokers' costs can vary considerably depending on the relationship Canadian manufacturers establish with the brokers they choose. If landed prices have been quoted and transactions are to be profitable, it is essential that the question of brokerage fees, tariff classification, and delivery instructions be settled in advance wherever possible.

Consumer Product Safety Regulations:

Canadian computer equipment must comply with product safety regulations concerning electrical equipment for business or personal use. Rulings concerning the acceptability of electrically operated equipment for use in the United States must be obtained from: Underwriters Laboratories Incorporated, 333 Pfingsten Road, Northbrook, Illinois. Tel: (312) 272-8800. Canadian computer equipment must also comply with U.S. emissions regulations. User approval for all equipment which produces electro-magnetic radiations must be obtained from: Federal Communications Commission, P.O. Box 40, Laurel, Maryland 20810, (Mr. Milton C. Mobley, Assistant Chief Engineer of Laboratories Division), Tel: (301) 725-1585.

Entry into a Foreign Trade Zone:

Canadian computer companies can consider placing their products in a licenced U.S. Foreign Trade Zone. Foreign Trade Zones may be of interest to Canadian companies who wish to hold bulk stock of their product in the market area without paying duty. Before goods can be released from the zone into the U.S. marketplace, duty must be paid.

Foreign Trade Zones in the U.S. are licenced by the U.S. Department of Commerce, but they are operated by independent commercial organizations. There are currently a number of Foreign Trade Zones operating in the Southwestern U.S.; details can be obtained from the U.S. Department of Commerce.

Foreign Trade Zone #50 in Long Beach, California offers open-air storage for 8.6 cents per cubic foot per month and covered storage for 56 cents per cubic foot per month. Space and time minimums are by negotiation.

The U.S. Department of Commerce advised that Foreign Trade Zones are usually only advantageous

in certain circumstances. Canadian manufacturers will need to weigh the advantages and disadvantages carefully before making a decision.

It should be noted that goods may be loaded, stored, or have local content added in a Foreign Trade Zone. In some cases, goods in a more advanced state can be re-classified and may attract a lower duty rate if local content has been added while they were in a Foreign Trade Zone.

13.0 FREIGHT AND SHIPPING TO THE MARKET

FREIGHT METHODS

Freight methods were discussed with all company groups contacted during this study. Southwestern U.S. companies considered road transport the most viable and cost effective method for moving regular quantity shipments. These companies were generally concerned with deliveries originating in their own region. U.S. companies also reported using air freight but shipments are generally confined to smaller components which can be shipped economically in large numbers, or to urgent deliveries.

The situation is substantially different for Canadian companies. Road transport can often be time consuming and expensive. Air Canada offers an excellent container service which could be the most cost effective and secure way of moving small to medium size shipments regularly to the Southwestern U.S. This method and others are outlined below.

Air Freight — Air Canada and other airlines offer regular daily containerized freight services to U.S. cities. Air Canada's service covers Los Angeles and San Francisco. The company claims that its rates are more cost effective than truckers' rates. Three container sizes are available, small, medium, and large. The small container carries up to 1,500 lbs weight, has a cubic capacity of 154 ft³ and costs \$245.00* shipped from Toronto to Los Angeles. The large container can carry up to 10,000 lbs, has a cubic capacity of 450 ft³ and costs \$720.00. Manufacturers can collect containers themselves or have them delivered by the airline for a nominal cost. Packing can be carried out under the manufacturer's own supervision. Delivery in Los Angeles or San Francisco is a simple matter.

The average cost using this method, including delivery and pickup, is \$8.50 per 100 lbs. A conservative estimate on current trucking costs (common carrier) indicates that the price would be around \$40 per 100 lbs for small shipments. Burroughs and IBM are using this service. Apple is supplying products to Canada by the same method. Contact number for this service is (416) 676-2940.

Common Carriers — Common carrier rates are approximately \$22.00 U.S. per 100 lbs weight from Eastern Canada to Midwestern transshipment centers such as Detroit or Chicago. Rates from the Midwest to Los Angeles or San Francisco are around \$20.00 U.S. per 100 lbs weight. Common carrier rates are subject to various tariffs which vary on a commodity basis. Canadian suppliers should check the rate that their product attracts with common carriers in their area. Several carriers are listed in the Appendix.

Independent Truckers — Back hauling by an independent trucker from Detroit to Los Angeles costs around \$2,500 U.S. for a complete truck and trailer load. There is no specific price consideration for weight provided the weight is kept within statutory limitations. This method can represent considerable saving over common carriers' rates, but back

hauling may not always be a reliable method since trucks may not be available when required. It is possible to arrange for back hauling from most Eastern Canadian production centers but since these are not regularly scheduled freight services it will be necessary to check with the truckers or their brokers in each case.

Freight Consolidators — Freight consolidators can be effective in helping Canadian manufacturers to cut freight costs when smaller but consistent orders are involved. The Los Angeles Manufacturers Shipping Association (LAMSA)* is a non-profit organization which was formed to reduce freight costs on all kinds of manufactured goods being shipped to California. The association acts as a consolidator and forwarder. Canadian manufacturers are welcome to join. The LAMSA claims it can save its members 25-30 percent over regular freight costs and is capable of arranging shipment from anywhere in the U.S. or Canada to Los Angeles, San Francisco or San Diego. The association is happy to supply cost estimates.

Packaging — Packaging for computers and computer products has become relatively sophisticated. This is due to the often fragile nature of the product. Generally, standard packaging once developed is used for both local and international shipments. Canadian suppliers new to export markets should ensure their packaging is adequate.

Timing — Timing can vary considerably with the freight method used. Trucking companies and independent truckers generally offer a four day delivery from Eastern Canada to the market area. Air shipments can reach most parts of the U.S. the day they are shipped.

*Canadian Dollars

*Los Angeles Manufacturers Shipping Association: 4430 Sheila Street, Los Angeles, 90023: phone (213) 265-3900. Initial membership costs \$100.00. There is a small annual renewal fee. Members must take out an insurance bond for the period of membership.

14.0 PRICING PRODUCTS FOR THE SOUTHWESTERN U.S. MARKET

When pricing products for the Southwestern U.S. market the following points should be carefully considered:

The need to be competitive — interviews with all key groups contacted during the course of this study emphasized that the Southwestern U.S. computer industry is extremely price conscious. From the Canadian point of view, this means not only should products be attractively priced but transactions involving products exported to the U.S. should be kept as simple as possible. Potential customers stressed that it is necessary for Canadian companies to bring their products to the market because U.S. buyers will not feel the need to shop in Canada. For this reason, pricing should include all brokers' costs, customs duty, and any other contributing costs. Agent's, distributor's or sales representative's commission should be included. This will make it possible to quote an all inclusive price. Pricing in U.S. dollars should be a matter of standard practice.

All freight costs should be included. This will be necessary if products are to be warehoused and distributed in the market area or whether they are to be shipped directly to a customer's premises. Fear of excessive freight costs has often held Canadian manufacturers back from developing worthwhile U.S. markets. The section on freight in this report will be helpful as a general guide to minimize transportation costs.

Before commencing a business relationship with an American company, it will be necessary to discuss the question of payment terms thoroughly. Canadian suppliers will be aware that events often move rapidly in the computer industry. For this reason, an adequate credit report should be obtained when dealing with small companies particularly for initial orders. Canadian suppliers may feel comfortable in dealing with large established American organizations on an open-order basis but, here again, it must be remembered that a number of leading U.S. companies in the field have developed severe financial problems over the last year and this could seriously affect payment prospects. If Canadians supply direct from Canada rather than through distributors, a Letter of Credit can be used. This has always been the most satisfactory solution for long range international commercial transactions.

15.0 MARKET STRATEGIES

This report is intended to be a working tool for small to medium sized Canadian companies who wish to market their products or services in the Southwestern U.S.A. It is possible that companies in these categories have not attempted serious international marketing in any form before. For this reason we have produced a guide which covers the following points:

- Market evaluation;
- Preparing a market entry plan; and
- Examples showing how the elements in the marketing plan could differ for a selection of the product types covered by this study.

Market Evaluation:

The first stage is to determine if there could be a worthwhile market for the products Canadian companies wish to export to the Southwestern U.S. The company reports provided throughout this study will serve as an initial guide to the potential market responses which could occur. At the same time, some clear market requirements for certain product types are readily identifiable.

Once it has been determined that the product may be salable, it will be necessary to plan one or two visits to the market area to physically test potential customers' responses. We suggest that these trips should be made by marketing rather than technical personnel. A worthwhile contact list is essential. The list of interested companies obtained from this report should be supplemented by additional contacts. These can be obtained from trade directories such as Data Sources* and by calling companies direct. It is advisable to contact the Canadian Consulate General in the market area. Commercial Officers from the consulate may be helpful in providing additional contacts and in helping to plan a marketing trip so that the greatest benefit can be derived from it.

It is wise to send prospective customers a marketing package in advance. The package should include literature and a personalized letter. A follow-up phone call should be made and arrangements for as many tentative appointments as possible before leaving Canada. It is advisable not to fit any more than three major appointments into any one day's schedule.

The object of the evaluation trip is to discuss the product pricing, delivery, potential order size, and sales potential generally with prospective customers. The second major objective is to interview a number of possible representatives while critically examining the advantages and disadvantages offered by a number of alternative sales and distribution methods which may be available.

If it is at all possible, it will be advantageous to time the trip to coincide with participation in or attend-

ance at an area trade show or conference (these are discussed in the report section on promotional methods).

It should be remembered that there is a great deal of difference between products which sell virtually on a commodity basis such as components and some board level products, and those complete products which offer new or unusual technology. In the latter case, individual seminars together with visits to the exporter's Canadian plant should be considered an investment.

The Canadian Government provides a number of programs designed to assist new exporters with initial export costs. New exporters should consult External Affairs U.S. Trade and Investment Development Bureau and ITC/DRIE to ascertain if any of the available programs apply to them.

Market Entry Plan:

It is essential to prepare a detailed market entry plan which will provide management, marketing, and production staff with a full outline of the processes which are involved in preparing for an export operation. This plan will also outline the practical marketing steps to be taken over the initial period once the export operation commences. The market entry plan should include the following information: —

- *Evaluation results* — Detailed results of the market evaluation to determine the marketability of the product or products, (is the product acceptable in its current form, is modification necessary); whether projected product pricing will be acceptable or should pricing be revised (at least in the early stages); the potential size of the market which could be achieved realistically in a set time; the type of distribution method which best suits the product, the market, and the Canadian exporting company.
- *Timing* — The physical aspects of selling and marketing should not commence until orders can be taken and delivered within a time period which is acceptable to the customer. Consequently, it is necessary to decide when export sales should commence.
- *Selling Organization* — An accurate outline of the selling and distribution organization required to maintain the export operation both in the U.S. and in Canada together with cost estimates for all stages and operations. This should include distributors' margins; travel to the market area; cost of participating in marketing activities such as advertising and trade shows; any related or set-up costs in the market area, i.e. rents, equipment, leasing.
- *In-house Organization* — An estimate of in-house Canadian costs, i.e. allocation of manpower, extra staff required, communications, and product development costs.
- *Budget and Sales Forecast* — An accurate budget and sales forecast reflecting all costs previously discussed and sales to be achieved. The budget and forecast will determine if the market-

* Data Sources: Published by Ziff-Davies Publishing Co.,
1 Park Avenue, New York, N.Y. 10016
Tel: 212-725-3500

ing operation will be viable or if it requires modification. Ideally, budgets and sales forecasts should be prepared to cover the whole of the establishment phase and a consolidation period. We have previously suggested that establishment could take up to two years. A further year can be added to cover a consolidation period.

Once the decision to export has been taken, it will be necessary to prepare an operations plan. The operations plan should set time limits for each phase of the marketing operation and should detail responsibilities. Reporting procedures should be outlined. Management and staff will find this a valuable tool as the operation proceeds.

Marketing Examples:

— *Simple applications software package* —

Packages which perform standard tasks could be sold to hardware or software retailers. The method of distribution used will depend on the size and strength of the Canadian exporter. We recommend Canadian companies should select an established distributor who could probably cover the entire Southwestern marketing area from a central location in one of the major cities. Distributors should be evaluated using the methods already described in this report before a choice is made. Canadian companies can either meet distributors at a trade show or conference or proceed directly to contact individual distributing companies. Companies exporting simple applications software packages can probably handle most routine marketing work directly from Canada on this basis. It will probably be necessary to contribute to the U.S. distributor's advertising and promotional costs in order to achieve market presence.

— *Specialized applications package for professional or industry groups* —

Canadian exporters should be prepared to invest extra time and effort in selecting a specialized distributor who is already in the field working primarily with professional or commercial customers. A distributor or agent of this type will have little need for an elaborate office or warehouse facility and will operate with low overheads. In order to achieve an effective sales level it may be necessary to appoint a distributor in Los Angeles, San Francisco, and possibly Denver. In the evaluation stage, it may be worthwhile considering holding a seminar or series of seminars at strategic points in the market area. Contact could be made with key professional groups, and seminars timed to coincide with association meetings or conferences. Turnkey systems companies who specialize in the target groups could also be considered. Canadian companies should be prepared to advertise in professional or technical publications.

— *Sophisticated hardware systems* —

The target markets for sophisticated high-end hardware systems will often be major corporate or industry end users. Canadian companies producing products in this category will find that export markets

are in most respects similar to domestic Canadian markets. The Southwestern U.S. is a fertile market with a great number of major corporations headquartered in the main population centers. The key figure for successful corporate sales is the marketing oriented technical sales representative who can be relocated in the market area from Canada. If this is not desirable, a highly qualified salesman can usually be found in the market area providing an adequate compensation package is provided. In this case, periodic training in Canada will be necessary. It may be an advantage to locate adequate demonstration equipment in the market area. The right salesman will be able to handle both corporate customers and selected turnkey systems companies. In order to penetrate this market, adequate funds must be made available for advertising and participation in trade shows which cater to MIS and DP management personnel.

— *Low to medium-end microcomputers* —

The emerging trend for business sales of microcomputers is through store-front operations. In order to successfully sell to this market, it will be necessary to establish a stocking distributor.

Speedy delivery and the need to minimize freight costs are key elements. Canadian exporters may find it convenient to appoint a distributor in both Los Angeles and San Francisco. Once the market is firmly established, it will be possible to expand to other market centers in the Southwestern U.S. by appointing distributors there. We recommend the initial step should be to take part in a major computer trade show such as the NCC Show or the Consumer Electronics Show. Prospective distributors should be evaluated carefully before a selection is made. It will be necessary to support the distributor with advertising and possibly other marketing costs. Direct sales to retailers will prove too difficult for Canadian companies to handle in most cases.

— *Special applications hardware and software packages* —

The market for packages of this type is usually restricted to a specialized professional or industrial base. CAD/CAM hardware and systems for architecture, civil engineering or industrial design are a good example. It is necessary for a Canadian manufacturer to place a fairly extensive range of operational demonstration equipment in the market area. An office or store-front location is ideal for this purpose. There are two alternatives: It will be necessary to find either a distributor who specializes exclusively in sophisticated computer graphics or to establish a subsidiary organization in the market area.

Specialist distributors can usually be located through appropriate trade journals. Extensive in-house training for key personnel may be necessary. Manufacturers with specialized equipment of this sort should be prepared to advertise in key trade journals and participate in relevant trade shows, for example, the NCGA (for computer graphics).

This report has emphasized microcomputers. For this reason, we have included the following chart which will assist Canadian computer and peripheral manufacturers to identify U.S. customer groups according to the price and degree of sophistication of the products they produce.

Finally, Canadian companies should consider establishing a U.S. bank account and mail address as a possible and useful first step in creating a U.S. presence.

U.S. CUSTOMER CATEGORIES FOR MICRO COMPUTER SALES

MARKET	APPLICATIONS	SYSTEM CHARACTERISTICS	PRICE RANGE	NATIONAL LEADERS
"Personal"	Games, Education, Word Processing, Visual Calculator, Home Applications, Limited	Single User. Floppy Based. 16K-64K RAM.	\$200- \$5,000	Atari Apple Commodore Xerox IBM NEC
Home				
Professional	Business, Intelligent Work Station.	Winchester add on. Some 16 Bit. CPM. Apple. Basic.		Tandy Zenith NEC
Fortune 2000				
<i>Business "Starter" System</i>	Accounting Distribution Manufacturing	One-Four user, Floppy & Winchester 10MB, 64K-128K RAM. 8-16 Bit. CPM / MPM.	\$3,000 to \$20,000	Altos Cromenco NorthStar IBM
Professional	Verticals Word Processing, Professional Planning.	Limited Comms. DBMS/APG BASIC, COBOL		Data General DEC Televideo Zenith NEC
\$5 to \$5M Companies				
Fortune 2000				
<i>Business "Growth" System</i>	As Above + Office Automation Dist. Data Processing	to 16 users. Winchester. to 512K RAM 16 Bit CPM / MPM / UNIX, PICK. Good Comms. DBMS / Dev Tools / APG. Multiple Languages	\$15,000 to \$50,000	Basic 4 IBM HP Wang ADDS DEC DG
\$3M to \$20M Companies				
Fortune 2000				Burroughs NCP
<i>Business "Full" System</i>	As Above + LAN BAN	to 64 Users. Winchester & SMD. to 1 MB + RAM. 16 Bit. Multiple O/S. Comprehensive Comms. Multiple Languages. DBMs, etc.	\$45,000 to \$100,000	Basic 4 IBM NCR HP DEC DG Prime Wang Microdata Burroughs
\$20M and up Companies				
Fortune 2000				

16.0 SUMMARY AND CONCLUSION

This study has been produced mainly for the medium and smaller sized companies in the computer industry. The study has shown that there is clearly serious interest in Canadian computer products in the Southwestern U.S. The study has indicated that there are several key weaknesses which seem to be common to many Canadian exporting companies. These weaknesses include lack of aggressiveness, poorly prepared market planning, inadequate literature and promotional material, insufficient follow-up and communication, and unwillingness of Canadian companies to work together to promote a market awareness of the Canadian computer industry.

Despite these common criticisms, isolated Canadian computer products are beginning to gain market acceptance in the Southwestern market area. Examples are micro-computers in the medium to upper price range, CAD/CAM systems, CRTs and video terminals, and high quality impact printers. There are also possibilities for software and a number of Canadian software producers are already supplying portions of the Southwestern U.S. market with special industry group software packages such as, farming and civil engineering, networking systems, emulation packages, and CAD/CAM software.

California is traditionally the U.S. leader in the computer industry. This has created a high degree of computer awareness throughout the Southwestern U.S. market region. The computer industry continually demonstrates its ability to accept and produce new technology. With technology changing approximately every two years, there is a constant demand for new and alternative products. From a Canadian point of view, the fact that the industry is fragmented has assisted in created product gaps which Canadians can fill. Intensive Japanese competition demonstrated throughout this report is making U.S. companies more responsive, if anything, to buying closer to home.

Market areas and end-users, manufacturers, distributors, turnkey systems companies, and retailers are clearly defined in the report. Most computer systems manufacturers purchase outside product and confine their manufacturing operation largely to assembly. They emphasize the need for Canadians to be competitive. Distributors offer possibly the best solution for most Canadian companies whose products are covered by this report. Price is a key factor with distributors but alternative products and in some instances more elaborate or "high-end" products are also needed. Turnkey systems companies do offer possibilities for computer sales but we advise Canadian companies to approach this market through distributors who know the entire field and its specific requirements. A number of retailers we contacted are also receptive to Canadian products and manufacturers should not ignore this rapidly growing segment of the market. We recommend that Canadian companies approach retail customers through distributors.

We have provided outline market strategies designed to assist Canadian manufacturers prepare market plans for their products. The most important element in each case is the need to provide adequate representation. We suggest that Canadian companies investigate the possibilities thoroughly before launching an active market program. Time spent in the beginning phase will lead to better results as marketing progresses.

Canadian companies must be aware of major trends in the U.S. and world computer industry and participate if there is to be a widespread acceptance of generic Canadian computer products. There are clear indications that the computer industry in Canada should concentrate on producing specialized products designed to fill gaps which have been created by the Japanese and U.S. computer industries. In order to fully realize this potential in the medium and long term, continuing research and development will be necessary.

This report has been produced to provide Canadian manufacturers with background and market information which will assist them in increasing Canadian exports to the Southwestern U.S. and other parts of the U.S. market.

APPENDIX "A"
**Canadian Computer and Software
Manufacturers Responding
to the Study**

ACT Computer Services Ltd.	Dealer management information and control mobile equipment system.	Homestead Computer Services, Ltd.	Farm Management System Software.
All Computers Inc.	Memory management system for IBM PC, plus other software.	Human Computing Resources Corp.	Distributors: Delta Farming Systems, Colorado
Bailey & Rose Ltd.	Computer assisted learning software and productivity tools.	Idacom Electronics, Ltd.	Software. Unity Operating System.
Baradine Products Ltd.	STD BUS compatible computer boards.	Insystems Inc.	Distributors: International Data Services, CA
Basic Software Group Inc.	Packaged software products for microcomputer-based commercial applications. Distributors: North Star Computers Inc. Information Unltd. Software	Matrox Electronic Systems Ltd.	Plessey Peripheral Systems, CA
Cogebec Inc.	Computer hardware and software for local government. Distributors: Ernst & Whinney	Megatel Computer Corporation Inc.	Intelligent Data Analyzer, Protocol Analyzer.
Compeng Computer Systems Ltd.	Turnkey civil engineering computer and software. Distributors: Axis Inc., San Diego	Memotec Data Inc.	Software to develop computer application systems, generates Cobol programs.
Comshare Ltd.	Rent-a-car automation system microcomputer.	Nabu Manufacturing Corporation	Various boards and modules, microcomputer products, graphics terminals, terminals.
Symbol Cybernetics Corporation	CAD/CAM Computer graphics systems and electronic test equipment. Direct sales office in CA plus distributors	Nelma Data Corporation	Single board computers.
Data Kinetics	Database and conversion software Mark IV programming aids; plus education courses.	Netron Inc.	Communications hardware and software. Distributors: Manufacturer's reps.
David Computers	Microcomputer and application software for UNIX systems and Telidon graphics terminals.	Network Data Systems Ltd.	Micro Computers, Cable Telecommunication products. Direct sales by Subsidiary Consolidated Computer Inc.
Delphax Systems	Non-impact printers & print mechanisms for OEMs.	Norpak Corporation	Business computer and intelligent terminal. Distributors: Computerland (May/June 1983)
Digital Management Group Ltd.	Networking Package for DEC PDP-11 Systems running RSTS/E. Distributors: North County Computer Services, Inc., Escondido, CA.	Northern Technologies	Computer Aided COBOL Programs — customization.
DY-4 Systems Inc.	Micro Computers and software. Distributors: I.E. Jaco	Officesmiths Inc.	Interfaces for IBM, Olivetti, Olympia electronic typewriters. Computer for WP & electronic mail. Distributors: Olivetti Corporation of America — through Olivetti dealers.
		Omnitech Graphics Systems Inc.	Videotext decoder, teletext decoder, information provider system, encoder system.
			Customized CRTs, plastic connector covers, RFI shielded connector covers. Distributors: Momentum Computers, CA
			Software for Electronic File Cabinet.
			Turnkey CAD/CAM systems. Distributors: Omnicadd Systems, LA

Paterson-Phipps Int'l. Inc.	Programming productivity tools, data entry devices, graphic digitizer.	Technetronic Inc.	Color graphics system for analysis & planning of the performance and capacity requirement of IBM computers and data communication networks.
Prior Data Sciences Ltd.	Module test system.	Thornhill Systems Consultants Ltd.	Microcomputer and software for electric and gas utilities.
Quasar Systems Ltd.	Software: Productivity tools. Distributors: wholly owned subsidiaries.	Xicom Technologies Corporation	Emulation for microsystems.
Real Time Datapro Ltd.	Policy & Claims Management Systems for General Insurance Companies. Insurance Broker Management Systems.	A number of Canadian companies exhibited at the 1983 NCC show; among these were: — Comterm Inc., Electrohome, Micro Personnel, Targa, Semitech, Comptec, ABC, Epic Data, Northern Telecom.	
Solidus International Corporation	Apple software for inventories. Software (Commodore) Sysres, Solidx.		
Spectrix Microsystems Inc.	Micro Computer System and operating software.		
STS Systems Ltd.	Hardware and software systems for selected industries.		
Sydney Development Corporation	Software for selected industries. Games for IBM, Apple & Coleco. Distributors: Sydney Data-products (San Diego) Sydney Data-products (San Francisco).		
Systemhouse Ltd.	Resource Analysis and Mapping system for municipal, natural resource management, mapping and planning applications.		
Taltek Electronics Ltd.	Credit authorization terminals, portable communication terminals data CRT & voice combined terminals.		
Taurus Computer Products Inc.	Microcomputer data acquisition & control front-end: Software. Distributors: Marketing Service Co., CA Adaptive Controls Inc., TX		

SCHEDULE 6. - METALS AND METAL PRODUCTS
Part 4. - Machinery and Mechanical Equipment

6 - 4 - G
676.15 - 676.52

C S P	Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
					1	LDDC	2
A	676.15	00	Calculating machines; accounting machines, cash registers, postage-franking machines, ticket-issuing machines, and similar machines, all the foregoing incorporating a calculating mechanism: Accounting, computing, and other data-processing machines.....	No.....	4.7% ad val.	3.9% ad val.	35% ad val.
	676.16	00	If certified for use in civil aircraft (see headnote 3, part 6C, schedule 6).....	No.....	Free		35% ad val.
A*	676.20		Calculating machines specially constructed for multiplying and dividing.....	.....	4.4% ad val.	3.7% ad val.	35% ad val.
			Electronic machines employing solid-state circuitry in the calculating mechanism:				
		11	Hand-held or pocket type.....	No.			
			Other:				
		15	Display only.....	No.			
		17	Other.....	No.			
		19	Other.....	No.			
A	676.22	00	Cash registers.....	No.....	2.5% ad val.	Free	35% ad val.
A	676.23		Adding machines.....	.....	5.1% ad val.	4.2% ad val.	35% ad val.
		10	Electric.....	No.			
		50	Nonelectric.....	No.			
A	676.25	00	Other.....	No.....	4.7% ad val.	3.9% ad val.	35% ad val.
A	676.30		Office machines not specially provided for.....	.....	4.4% ad val.	3.7% ad val.	35% ad val.
			Office copying machines:				
			Electrostatic copying machines:				
		10	Operating by reproducing the original image directly onto the copy material as in coated paper copiers (direct process).....	No.			
		12	Operating by reproducing the original image by transferring from an intermediate onto the copy material as in plain paper copiers (indirect process)...	No.			
			Other:				
		16	Photocopying machines.....	No.			
		19	Other.....	No.			
		30	Data-processing machines.....	No.			
		50	Other.....	No.			
	676.31	00	If certified for use in civil aircraft (see headnote 3, part 6C, schedule 6).....	No.....	Free		35% ad val.
			Parts of the foregoing:				
A	676.50	00	Typewriter parts.....	X.....	6.8% ad val.	4% ad val.	45% ad val.
A*	676.52		Other.....	.....	4.7% ad val.	3.9% ad val.	35% ad val.
		10	Parts of calculating machines; accounting machines, cash registers, postage-franking machines, ticket-issuing machines, and similar machines, all the foregoing incorporating a calculating mechanism.....	X			
		30	Parts of automatic data-processing machines and units thereof.....	X			
		50	Parts for photocopying equipment.....	X			
		70	Other.....	X			

Note: For explanation of the symbol "A" or "A*" in the column entitled "CSP", see general headnote 3(c).

SCHEDULE 7. - SPECIFIED PRODUCTS; MISCELLANEOUS AND NONENUMERATED PRODUCTS Page 685
 Part 2. - Optical Goods; Scientific and Professional Instruments; Watches, Clocks, and Timing
 Devices; Photographic Goods; Motion Pictures; Recordings and Recording Media

7 - 2 - G
 724.35 - 724.50

C S F	Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
					1	LDDC	2
A	724.35	00	Sound recordings, and magnetic recordings, not provided for in the foregoing provisions of this subpart: Recorded on wire.....	Lin.ft..	0.3c per lin. ft.	0.2c per lin. ft.	1c per lin. ft.
A	724.40	00	Recorded on magnetic tape or on any medium other than wire.....	Sq.ft....	0.9c per sq. ft. of recording surface		8c per sq. ft. of recording surface
A	724.45		Magnetic recording media not having any material recorded thereon.....	.....	5.1% ad val.	4.2% ad val.	80% ad val.
			For audio recording:				
		10	Cassettes.....	No.			
		20	Cartridges.....	No.			
		30	Other.....	X			
			For video or video and audio recording:				
		40	Cassettes.....	No.			
		50	Cartridges.....	No.			
		60	Other.....	X			
			Other:				
		65	Tape suitable for use with computers.....	X			
		70	Other.....	X			
	724.50	00	Scrap and waste photographic film fit only for the recovery of its constituent materials.....	X.....	Free		Free

Note: For explanation of the symbol "A" or "A*" in the column entitled "CSF", see general headnote 3(c).

APPENDIX TO THE TARIFF SCHEDULES

Part 4. - Temporary Duty Reductions, Pursuant to the Educational, Scientific, and Cultural Materials Imporation Act of 1982

9 - 4 --
960.40 - 960.80

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		Effective Period
				1	2	
960.40	1/	Loose illustrations, production proofs or reproduction films used for the production of books (provided for in items 274.50, 274.60, 274.65, 274.70, and 274.73, part 5, schedule 2).....	1/	Free	Free	On or before 8/11/85
960.50	1/	Developed photographic film; photographic slides; transparencies; holograms for laser projection; and microfilm, microfiche, and similar articles (provided for in items 274.50 through 274.70, inclusive, part 5, schedule 2).....	1/	Free	Free	On or before 8/11/85
960.55	1/	Motion picture films in any form on which pictures, or sound and pictures, have been recorded, whether or not developed (provided for in items 724.05 and 724.10, part 2G, schedule 7).....	1/	Free	Free	On or before 8/11/85
960.60	1/	Magnetic video tape on which pictures or pictures and sound have been recorded (provided for in item 724.12, part 2G, schedule 7).....	1/	Free	Free	On or before 8/11/85
960.65	1/	Sound recordings, combination sound and visual recordings, and magnetic recordings (however provided for in schedules 1 to 7).....	1/	Free	Free	On or before 8/11/85
960.70	1/	Patterns, models (except toy models) and wall charts of an educational, scientific or cultural character; mock-ups or visualizations of abstract concepts such as molecular structures or mathematical formulae; materials for programmed instruction; and kits containing printed materials and audio materials and visual materials or any combination of two or more of the foregoing (however provided for in schedules 1 to 7).....	1/	Free	Free	On or before 8/11/85
960.80	1/	Tools specially designed to be used for the maintenance, checking, gauging, or repair of instruments or apparatus admitted under item 851.60, part 4 of schedule 8; all of the foregoing entered for the use of any nonprofit institution, whether public or private, established for educational or scientific purposes (however provided for in schedules 1 to 7).....	1/	Free	Free	On or before 8/11/85

1/ See Appendix, statistical headnote 1.

(2nd Supp. 4/8/83)

APPENDIX "C"
COMPANIES DISTRIBUTING
CANADIAN PRODUCTS

INTERNATIONAL DATA SOURCES

1020 Stewart Drive
Sunnyvale, CA 54086 (408) 738-3368

Sally Hood, Purchasing Manager

Distributes VMS and UNIX systems compatible package. Have had this package for about ten months, selling from \$9,995 to \$24,995. System has not been selling as well as comparable U.S. systems. Canadian support not adequate and Canadian principal does not advertise. Despite this, willing to look at other Canadian software packages. Initial contact was made at a trade show.

NORTH COUNTRY COMPUTER SERVICES, INC.

223 Meyers Avenue,
Escondido, CA 92025 (619) 745-6006

Jarod Cadi

Distributes Canadian networking software programs which have been very popular. North Country Computer Services believes this to be the best networking system on the market. Support level has been excellent. Afraid of being swamped by other Canadian suppliers. Original contact made at a trade show.

SYDNEY DATAPRODUCTS

315 Laurel Street
San Diego, CA 92101 (619) 231-1775

Jim Seagram, President

Sydney Dataproducts is a subsidiary of a Canadian software company selling fifty propriety lines of software which are selling well, and Epson hardware.

AXIS INC.

7825 Engineer Road
San Diego, CA 92111 (619) 560-7737

Barbara Paul, Product Manager

Distributes civil engineering package from Canadian supplier. Support levels have been excellent. Would like to talk to other software producers.

DELTA FARMING SYSTEMS

644 Main Street
Grand Junction, CO 81510 (303) 243-7439

Neil Havermale, Manager

Sells Canadian farm management package. Cost

to end-user ranges from \$600 to \$35,000. Average price is \$400 per module. Sales are going well and other distributors are now handling the product line. Support level excellent but deliveries can be slow due to border problems. Company recommends Canadians establish U.S. division to solve border problems.

BI INC.

2400 Central Avenue
Boulder, CO 80301 (303) 443-2825

Gary Carroll, President

Designs, manufactures and distributes electrical identification system for dairy industry. The company has Canadian investors. Buys board-level products, for example, Canadian custom integrated circuit. Maybe making a joint venture with Purina, Canada. Would like to meet any Canadian companies connected with agribusiness.

OMNICADD SYSTEMS

924 Westwood Boulevard
Westwood, CA 90024 (213) 824-4624

Charles Miller, Sales Manager

The company was distributing a turnkey CAD/CAM system from a Canadian company. The product was wonderful. Canadian principal unable to provide service support but business was growing rapidly when company went out of business. Interested in other specialist and preferably CAD/CAM systems.

MARKETING SERVICES COMPANY

201 South Anita Street
Orange, CA 92668 (714) 978-0721

Developing the market for Canadian microcomputer system which sells from \$35,000 to \$55,000. Sees an excellent market for this innovative new product. Initial contact was made by mail. Interested in other Canadian products.

MOMENTUM COMPUTERS

965 West Mod Avenue
Sunnyvale, CA 94086 (408) 245-4033

Rick Tippit, V.P. Operations

APPENDIX "D"
**ADDITIONAL COMPUTER TRADE
SHOWS HELD IN THE WESTERN U.S.**

**COMPUTER SHOWCASE REGIONAL
EXPOSITION**

The Interface Group, Inc.
300 1st Avenue
Needham, Massachusetts 02194 (617) 449-6600

Richard Katieff, Show Manager

Regional series of shows for public geared for end-user and professional end-user. Forty shows next year, 300 booths, 20,000 attendees.

**INTERNATIONAL INFORMATION WORD
PROCESSING SYNOPTICON**

Prestige Exposition, Inc.
Box 24
Hohokus, New Jersey 07423 (212) 687-8877

June, San Francisco, 350 booths,
10,000 attendees.

**INTERNATIONAL PERIPHERAL EQUIPMENT
HARDWARE EXPOSITION**

Cahners Exposition Group
1350 East Touhy Avenue
Des Plaines, Illinois 60018 (312) 299-9211

Janet Schaefer, Show Director

September, Anaheim, CA, 100 booths,
6,000 attendees.

**NATIONAL COMPUTER AIDED DESIGN
CONFERENCE AND EXPOSITION (CAD/CAM)**

Morgan Grampion Expositions Group
Two Park Avenue
New York, New York 10016 (212) 340-9700

Robert A. Poggi

January, Anaheim, Convention Center,
15,000 attendees.

**NATIONAL PACKAGED SOFTWARE
CONFERENCE AND EXPOSITION
(Software West)**

Professional Exposition Management Co., Inc.
222 West Adams Street
Suite 400
Chicago, Illinois 60606 (312) 263-3131

Kim Moloney, Exhibits Manager

January, San Francisco, Moscone Convention
Center, 5,000 attendees.

**NEPCON WEST SEMICONDUCTOR/ HYBRID
MICROELECTRONICS EXHIBITS AND
CONFERENCE**

Cahners Exposition Group
Cahners Plaza
1350 East Touhy Avenue
Box 5060
Des Plaines, Illinois 60018 (213) 299-9311

Dennis Stanczak, Projects Manager

March, Anaheim Convention Center, 773 booths,
40,500 attendees.

NEW/COM SHOW

Electronic Industry Show Corp.
222 S. Riverside Plaza
Room 1606
Chicago, Illinois 60606 (312) 648-1140

David L. Fisher, Executive Vice President

May, Las Vegas Convention Center, 350 booths,
10,000 attendees.

PACIFIC COMPUTER EXPOSITION

202 C Street
San Diego, CA 92101 (619) 275-2211

Taylor Coleman, Manager

Spring, San Diego Convention Performing Arts
Center, 235 booths, 14,000 attendees.

WEST COAST COMPUTER FAIR

Computer Fair
333 Swett Road
Woodside, CA 94062 (415) 851-7077

Jim Warren, Show Manager

March, odd years, San Francisco Civic Auditorium,
62,400 sq. ft.

APPENDIX "E"
TRADE PUBLICATIONS

MIS WEEK
(Management Information Systems Week)

Fairchild Publications
7 East 12th Street
New York, New York 10003 (212) 741-6471

Randy Zemsky, Marketing Manager

DATAMATION

Technical Publishing (Dunn & Bradstreet)
875 Third Avenue
New York, New York 10022 (212) 605-9400

Larry Marion, Senior Editor

BYTE

Byte Publications Inc.
70 Main Street
Peterborough, New Hampshire 03458 (603) 924-9281

Karen Niles, District Manager,
Los Angeles (213) 480-5243

INFORMATION SYSTEMS NEWS

CMP Publications
111 East Shore Road
Manhasset, New York 11030 (516) 365-4600

Ruth Tilore, Customer Service Manager

MINI/MICRO SYSTEMS
BUSINESS COMPUTER SYSTEMS

A Cahners Publication
221 Columbus Avenue
Boston, Massachusetts 02116 (617) 536-7780

Linda L. Lorett, Assistant to the Publisher

COMPUTER MERCHANDISING
SOFTWARE MERCHANDISING

15720 Ventura Boulevard
Encino, CA 91436 (213) 995-0436

Paul Turchetta, Vice President, Marketing

COMPUTER WORLD

Computer World Communication Inc.
375 Cochituate Road
Box 880
Framingham, Massachusetts 01701 (800) 343-6474

Joe Fitzhugh, Northern District Sales Manager

COMPUTER DECISIONS

Hayden Publishing
50 Essex Street
Rochelle Park, New Jersey 07662 (201) 843-0550

Denise Sinnott, District Manager,
Los Angeles (213) 641-6544

COMPUTER AND ELECTRONICS MARKETING

1050 Commonwealth
Boston, Massachusetts 02215 (617) 232-5470

Jonathan Finn, Regional Sales Manager, Los Angeles

DATA COMMUNICATIONS

3 Parkway
Philadelphia, Pennsylvania 19102 (215) 496-3818

Tom Duffy
Karen Michaelson, District Manager,
Los Angeles (213) 487-1160

APPENDIX "F" TRANSPORT COMPANIES

Amstar Transport
8 Cedar Street
Thornhill, Ontario
L3T 3V9 (416) 224-1174

Toronto, Los Angeles, San Francisco – Independent
Truckers. Full load necessary for economical rates.

Atlas Van Lines
520 Hill Street
Windsor, Ontario
N9C 3C4 (519) 258-8432

Toronto, Los Angeles, San Francisco – Common
Carrier.

M & M Truck Brokers Inc.
1377 Richelieu Boulevard
Otterburn Park, Quebec
J3G 4S6 (514) 467-9726

Truck Broker – West Coast business can be
seasonal.

Transport Brokers Inc.
919 McGarry Avenue
Los Angeles, CA 90021 (213) 627-0141

INFORMATION ON TRUCKING LINES & SERVICES

Companies wishing to obtain the widest range of
information on van lines and route networks should
subscribe to "*The Motor Freight Directory*"
published annually by G.R. Leonard & Co., Inc.,
1072 North Allen Avenue, Pasadena, CA 91104.
Telephone: (213) 681-1590. Annual subscription cost
\$35.00. This is possibly the best source for U.S.
and Canadian road transport.

APPENDIX "G"
Mailing List —
Computer Systems Manufacturers

Able Computer
1732 Reynolds Avenue
Irvine, CA 92714

Advanced Electronics Design Inc.
440 Potrero Avenue
Sunnyvale, CA 94086

Alantus Data Communication Corp.
6011 Executive Boulevard
Rockville, MD 20852

Amdahl Corp.
1250 E. Arques Avenue
Sunnyvale, CA 94086

Amfox
1196 E. Willow Street
Signal Hill, CA 90806

American Telecom, Inc.
3190 Mira Loma Avenue
Anaheim, CA 92806

AMF Geo Space Corp.
5803 Glenmont Drive
Houston, TX 77081

Amlyn Corp.
1758-H Junction Avenue
San Jose, CA 92714

Ampex Corp.
200 N. Nash Street
El Segundo, CA 90245

Applied Data Communications
14272 Chambers Road
Tustin, CA 92680

Artelonics Corp.
2952 Bunker Hill Lane
Santa Clara, CA 95050

Atari
1312 Crossman, PO Box 61657
Sunnyvale, CA 94086

ATV Jacquard, Inc.
2921 S. Daimler Road
Santa Ana, CA 92711

Acurex Corp.
485 Clyde Avenue
Mountain View, CA 94042

Advanced Micro Devices
901 Thompson Place
Sunnyvale, CA 94086

Altos Computer Systems
2360 Walnut Avenue
Marina Del Rey, Ca 90291

Amecom
360 N. Crescent Drive
Beverly Hills, CA 90210

American Satellite Company
1801 Research Boulevard
Rockville, MD 20850

American Teledata Corp.
7000 Broadway, Bldg 2, No. 200
Denver, CO 80221

AMI, Inc.
3800 Homestead Road
Santa Clara, CA 95051

Amperif
21345 Lassen Street
Chatsworth, CA 91311

Apple Computer, Inc.
20525 Mariani
Cupertino, CA

ARC Automation Group, Inc.
PO Box 1009
Bryan, TX

Astronautics Corp. of Amer.
907 South 1st Street
Milwaukee, WI 53204

Atlantic Research Corp.
5390 Cherokee Avenue
Alexandria, VA 22314

Auto-Trol Technology Corp.
12500 N. Washinton Street, PO Box 33815
Denver, CO 80233

Autologic, Inc.
1050 Rancho Conejo Boulevard
Newbury Park, CA 91320

Axlon Inc.
170 North Wolfe Road
Sunnyvale, CA 94086

BDS Corp.
1120 Crane Street
Menlo Park, CA 94025

Bell & Howell Company
360 Sierra Madre Villa
Pasadena, CA 91109

Bell & Howell Co.
16691 Hale Street
Irvine, CA 92714

Bo-Sherral Company

6101 Jarvis Avenue
Newark, CA 94560

BTI Computer Systems

870 W. Maude Avenue
Sunnyvale, CA 94086

Business Operating Systems

2835 E. Platte Avenue
Colorado Springs, CO 91320

California Computer Products, Inc.

2411 W. La Palma Avenue
Anaheim, CA 92801

Calma Co.

5155 Old Ironsides Drive
Santa Clara, CA 95050

Century Data Systems

1270 N. Kraemer Boulevard
Anaheim, CA 92806

Codex Corp.

20 Cabot Boulevard
Mansfield, MA 02048

Compal Computer Systems

6300 Variel Avenue
Woodland Hills, CA 91367

Automation Sales Co., Inc.

344 40th Street
Oakland, CA 94609

Basic Four Information Systems

14101 Myford Road
Tustin, CA 92680

Beehive International

4910 Amelia Earhart Drive
Salt Lake City, UT 84125

Beta Computer Services.

1230 Collins
Orange, CA 92668

Braegen Corp.

20740 Valley Green Drive
Cupertino, CA 95014

Business Computer Corp.

PO Box 7498
Menlo Park, CA 94025

Cado Systems Corp.

2771 Toledo Street
Torrance, CA 90503

California Microwave, Inc.

990 Almanor Avenue
Sunnyvale, CA

Cardkey Systems

20660 Bahama Street
Chatsworth, CA 91311

Cermtek Microelectronics, Inc.

1308 Borregas Avenue
Sunnyvale, CA 94086

Communications Cable Co.

1252 Diamond Way
Concord, CA 94520

Compucorp

2211 Michigan Avenue
Santa Monica, CA 90409

Computer Communications

2610 Columbia Street
Torrance, CA 90503

Computer Memories, Inc.

9216 Eton Avenue
Chatsworth, CA 91311

Computer Research Corp.

5161 Ward Road
Wheat Ridge, CO 80033

Corporate Data Sciences

3910 Freedom Circle, Bldg 6
Santa Clara, CA 95050

Computer Sciences Corp.

650 N. Sepulveda Boulevard
El Segundo, CA 90245

Computhink, Inc.

965 W. Maude Avenue
Sunnyvale, CA 94086

Corvus Systems Inc.

2029 O'Toole Avenue
San Jose, CA 91531

Cybertek Computer Products, Inc.

6133 Bristol Pkwy
Culver City, CA 90503

Data General Corp.

4400 Computer Drive
Westboro, MA 01581

Data Technology Corp.

2775 Northwestern Parkway
Santa Clara, CA 95051

Data Terminals & Communications

590 Division Street
Campbell, CA 95008

Datastream Communications

1115 Space Park Drive
Santa Clara, CA 95050

Devcom Inc.
13333 Bel Red Road
Bellevue, WA 98005

Computer Equipment Services, Inc.
12624 Daphne Avenue
Hawthorne, CA 90250

Computer Prod. Mktg & Computer Equip Serv.
12624 Daphne Ave.
Hawthorne, CA 90250

Conrac Corp.
600 N. Rimsdale Avenue
Covina, CA 91722

Creative Micro Systems
3822 Cerritos Avenue
Los Alamitos, Ca 90720

Computerized Restaurant Systems, Inc.
300 E. La Palma Avenue
Anaheim, CA 92807

Convergent Technologies, Inc.
2500 Augustine Drive
Santa Clara, CA 95051

Cromemco Inc.
280 Bernardo Avenue
Mountain View, CA 94043

Cynthia Peripheral Corp.
10150 Sorrento Valley Road
San Diego, CA 92121

Data Storage Technology
14750 Sinclair Circle
Tustin, CA

Data Technology Industries
700 Whitney Street
San Leandro, CA 94577

Data Wholesale Corp.
700 Whitney Street
San Leandro, CA 94577

Datatype, Inc.
340 E. Middlefield Road
Mountain View, CA 94043

Digital Pathways, Inc.
1060 E. Meadow Circle
Palo Alto, CA 94303

Digital Scientific Corp.
2921 S. Daimler
Santa Ana, CA 92711

Dataproducts Corp.
6300 Canoga Avenue
Woodland Hills, CA 91365

Diablo Systems Inc.
24500 Industrial Boulevard
Hayward, CA 94545

Digital Equipment Corp.
146 Main Street
Maynard, MA 01754

Direct Inc.
1279 Lawrence Station Road
Sunnyvale, Ca 94086

DMC Systems Inc.
2300 Owen Street
Santa Clara, CA 95051

Dysan Corp.
5201 Patrick Henry Drive
Santa Clara, CA 95050

ECS Microsystems, Inc.
215 Devcon Drive
San Jose, CA 92711

Epson America, Inc.
3415 Kashiwa Street
Torrance, CA 90505

Evolution Computer Systems Corp.
250 E. Emerson Avenue
Orange, CA 92665

Findex, Inc.
20775 S. Western
Torrance, CA 90501

Forward Technology Inc.
2595 Martin Ave.
Santa Clara, CA 95050

General Automation Inc.
1055 S. East Street, PO Box 4883
Anaheim, CA 92805

Datametrics Corp.
7630 Gloria Avenue
Van Nuys, CA 91406

Decision Data Computer Corp.
100 Witmer Road
Horsham, PA 19044

Digital Development Corp.
8650 Balboa Avenue
San Diego, CA 92123

Digital Microsystems Inc.
1840 Embarcadero
Oakland, CA 94606

Distributed Logic Corp.
12800-G Garden Grove Blvd.
Garden Grove, CA 92643

Durango Systems Inc.
3003 N. First Street
San Jose, CA 95134

Eagle Computer Inc.
983 University Ave.
Los Gatos, CA 95030

Emulex Corp.
2001 E. Deere Avenue
Santa Ana, CA 92705

Evans & Sutherland
580 Arapeen Drive
Salt Lake City, UT

Falco Data Products, Inc.
1286 Lawrence Station Rd.
Sunnyvale, CA 94086

Ford Aerospace & Communications Corp.
3939 Fabian Way
Palo Alto, CA 94303

Four-Phase Systems Inc.
10700 N. DeAnza Blvd.
Cupertino, CA 95014

General Electric Co, Data Com Prod Bus Dept
General Electric Drive
Waynesboro, VA 22980

General Terminal Corp.
14831 Franklin Avenue
Tustin, CA 92680

Genrad Inc.
5730 Buckingham Pkwy
Culver City, CA 90230

Harris Corp./Farinon Div
1691 Bayport Ave.
San Carlos, CA 94070

Hitachi America, Ltd
3000 Hanover Street
Palo Alto, CA 94304

ICOT Corp.
830 Maude Avenue
Mountain View, CA 94043

Information International
5933 Slauson Avenue
Culver City, CA 90230

International Anasazi Inc.
2219 E. University Drive
Phoenix, AZ 85034

Interstate Electronics Corp.
1001 E. Ball Ave., Box 3117
Anaheim, CA 92680

ITT Systems, Inc.
1717 W. 16th Street
Tempe, AZ 85281

Kalbro
1160 Sandhill Avenue
Carson, CA 90746

Kimtron Corp.
22251 Martin Ave.
Santa Clara, Ca 95050

Konan Corp.
1448 North 27 Avenue
Phoenix, AZ 85009

Lexor Corp.
7100 Hayvnhurst Avenue
Van Nuys, CA 91406

Genisco Computer Corp.
3545 Cadillac Avenue
Costa Mesa, CA 92626

Gould Inc.
1870 Lundy Ave
San Jose, CA 95131

Hewlett-Packard Co.
3000 Hanover Street
Palo Alto, CA 94304

Honeywell Information Systems
65 Walnut Street
Wellesly Hills, MA 02181

Industrial Micro Systems, Inc.
1717 S. State College Bl, Ste 135
Anaheim, CA 92806

Informer Inc.
8332 Osage Ave.
Los Angeles, CA 90045

Interscience Systems, Inc.
8435 Canoga Avenue
Canoga Park, CA 91405

C. Itoh Electronics, Inc.
5301 Beethoven Street
Los Angeles, CA 90066

Jade Computer Products, Inc.
4901 W. Rosecrans
Hawthorne, CA

Kennedy Co.
1600 Shamrock Ave.
Monrovia, CA 91016

KLC Corp.
2500 E. Colorado Boulevard
Pasadena, CA 91107

Lexitron Corp.

1840 DeHaviland Drive
Thousand Oaks, CA 91359

Logical Business Machines

1294 Hammerwood Ave.
Sunnyvale, CA 94086

Magnuson Computer Systems

2902 Orchard Parkway
San Jose, CA 95134

Maxlight Fiber Optic

3035 North 33rd Drive
Phoenix, AZ 85017

MDS Qantel

4142 Point Eden Way
Hayward, CA 94545

MGATEK Corp.

2985 Sorrento Valley Boulevard
San Diego, CA 92121

Mercator Business Systems

1294 Lawrence Station Road
Sunnyvale, CA 94086

Micro Five Corp.

17791 Sky Park Circle
Irvine, CA 92714

Microbyte Electronics Corp.

1198 E. Willow Street
Signal Hill, CA 90806

Micromation, Inc.

1620 Montgomery Street
San Francisco, CA 95134

Mitsubishi Electronics America, Inc.

7200 W. Artesia Bl.
Compton, CA 90220

Mosteck Corp.

1215 W. Crosby Road
Carrollton, TX 75006

National Semiconductor Corp.

2900 Semiconductor Drive
Santa Clara, CA 95051

Novation Inc.

18664 Oxnard Street
Tarzana, CA 91356

Osborne Computer Corp.

26538 Dante Court
Hayward, CA 94545

Master Specialities Co.

1540 Monrovia Ave.
Costa Mesa, CA 92627

MDB Systems, Inc.

1995 N. Batavia Street
Orange, CA 92665

MDS Trivex

3180 Redhill Avenue
Costa Mesa, CA 92626

Memorex Corporation

San Tomas at Central Expressway
Santa Clara, CA 95052

Micom Systems, Inc.

20151 Nordhoff Street
Chatsworth, CA 91311

Micro Peripherals, Inc.

9754 Deering Avenue
Chatsworth, CA 91311

Microcomputer Technology Inc.

3304 W. MacArthur Boulevard
Santa Ana, CA 92704

Microtech Business Systems

3180 Pullman Street
Costa Mesa, CA 92626

Molecular Computer

1841 Zanker Road
San Jose, CA

National Advanced Systems

800 E. Middlefield Road
Mountain View, CA 94043

Nicolet Zeta Corp.

2300 Stanwell Drive
Concord, CA 94524

Onyx Systems, Inc.

25 E. Trimble Road
San Jose, CA 95131

Persci, Inc.

12210 Nebraska Avenue
Los Angeles, CA 90025

Pertec Computer Corp.

21111 Erwin Street
Woodland Hills, CA 91367

Plessey Peripheral Systems

17466 Daimler
Irvine, CA 92714

Priam Corp.

20 W. Montague Expressway
San Jose, CA 95134

Protocol Computers Inc.

6430 Variel Ave. #107
Woodland Hills, CA 91367

Quantex Corp.
252 N. Wolfe Road
Sunnyvale, CA 94086

Rexon Business Machines
5800 Uplander Way
Culver City, CA 90230

Selinar Corp.
437-A Aldo Avenue
Santa Clara, CA 95050

Spectra Logic Corporation
1227 Innsbruck Drive
Sunnyvale, CA 91367

Storage Technology Corp.
2270 South 88th Street
Louisville, CO 80027

Sytek, Inc.
1153 Bordeaux Drive
Sunnyvale, CA 94086

Teac Corp. of America
7733 Telegraph Road
Montebello, CA 90640

Teletek Enterprises, Inc.
9767F Business Park Drive
Sacramento, CA 95827

Tymnet, Inc.
2710 Orchard Parkway
San Jose, CA 95134

Pertec Computer Corp.
12910 Culver Boulevard
Los Angeles, CA 90066

Prentice Corp.
266 Caspian Drive
Sunnyvale, CA 94086

Printronic, Inc.
17500 Cartwright Road, PO Box 19559
Irvine, CA 92713

Quadri Corp.
1725 W. 17th Street
Tempe, AZ 85282

Ramteck Corp.
2211 Lawson Lane
Santa Clara, CA 95050

Reynolds & Reynolds Co.
PO Box 1005
Dayton, OH 45401

Sierra National Corporation
5037 Ruffner Street
San Diego, CA 92111

Sperry Univac
P.O. Box 500
Blue Bell, PA 19424

System Industries
1855 Barber Lane
Milpitas, CA

Tandem Computers, Inc.
19333 Valico Pkwy
Cupertino, CA 95014

TEC, Inc.
2727 N. Fairview Ave.
Tucson, AZ 85703

Three Phoenix Co
21639 N. 14th Avenue
Phoenix, AZ 85027

Tymshare, Inc.
20705 Valley Green Drive
Cupertino, CA 95014

Ungermann-Bass, Inc.
2560 Mission College Boulevard
Santa Clara, CA 95050

Vector Graphic, Inc.
500 N. Ventu Park Road
Thousand Oaks, CA 91320

Xerox Corp.
880 Apollo Street
El Segundo, CA 90245

Zentec Corp.
2400 Walsh Street
Santa Clara, CA 95050

Vector General, Inc.
21300 Oxnard Street
Woodland Hills, CA 91367

Xerox Computer Services
5310 Beethoven Street
Los Angeles, CA 90066

Xendex Corp.
6644 Sierra Lane
Dublin, CA 94566

APPENDIX "G"

Mailing List — Turnkey/System Houses

- Access Computer Systems**
PO Box One
Tiburon, CA 94920
- Advanced Computer Techniques Corp.**
437 Madison Avenue
New York, NY 10022
- Advantage Computer Systems**
2721 U St.
Sacramento, CA 95818
- Agency Computers of the Inland Empire**
22470 Barton Road
Colton, CA 92324
- AM Bruning**
1800 Bruning Drive
Itasca, IL 60143
- Amer Bus. Computers Trading Corp.**
3600 Standish Avenue
Santa Rosa, CA 95401
- Amer. Management Systems, Inc.**
1777 North Kent St.
Arlington, VA 22209
- Apex Data Group**
1161 N. El Dorado Place, Ste 100
Tucson, AZ 94920
- Applied Data Research Inc.**
Rt 206 CN8
Princeton, NJ 08540
- Applied Management Systems**
221 N. Lois
La Habra, CA 90631
- Artec Electronics Inc.**
605 Old County Road
San Carlos, CA 94070
- Associated Computer Consultants**
228 E. Cota St.
Santa Barbara, CA 93101
- ATE Associates**
5707 N. Corsa Avenue
Westlake Village, CA 91361
- Access Corp.**
4815 Para Drive
Cincinnati, OH 45237
- Advanced Micro Techniques**
1291 East Hillsdale Blvd, #209
Foster City, CA 94404
- AFB/Micro Controls**
1444 Pioneer Way, #11
El Cajon, CA 92020
- Alpha Associates Company**
523 Main St., PO Box 456
El Segundo, CA 90245
- Amaray Corp.**
2251 Grant Road
Los Altos, CA 94022
- American Computer & Engineers, Inc.**
2001 South Barrington, #204
Los Angeles, CA 90025
- Anacomp, Inc.**
11550 N. Meridian St., Ste 600
Carmel, IN 46032
- Applied Business Systems**
3305 Harbor Blvd B-6
Costa Mesa, CA 92626
- Applied Financial Systems**
951 Mariners Island Blvd
San Mateo, CA
- Applied Research Inc.**
6151 W. Century Blvd, Ste 216
Los Angeles, CA 90045
- Ask Compute Systems, Inc.**
730 Distel Drive
Los Altos, CA 94022
- Astec, Inc.**
38860 Matson Place
Fremont, CA 94536
- Attorney Data Inc.**
2895 Velaoco
Costa Mesa, CA 92626
- Automated Analysis**
14617 Victory Blvd
Van Nuys, CA 91411
- Automated Court Systems**
11585 Sorrento Valley Road
San Diego, CA 92121
- Automated Systems, Inc.**
3300 S. Madelyn Lane
Sioux Falls, SD 57106
- Axis, Inc.**
4617 Ruffner St. #102
San Diego, CA 92111
- Bay Area Computer Data**
1256 Mission St.
San Francisco, CA 94103

Berkeley Systems Works

2409 Telegraph
Berkeley, CA 94705

B-J Associates/B-J Systems, Inc.

132 Aero Camino
Goleta, CA 93117

Bridge Computer Systems

3055 Alvarado
San Leandro, CA 91411

CCH Computax Systems, Inc.

7471 University Ave.
La Mesa, CA 92041

Comarc Design Systems

315 Bay St.
San Francisco, CA 94133

Computer Business Consultants

41 Tall Timbers, SLSR
Boulder, CA 80302

Computer Methods

7822 Oakledge Road
Salt Lake City, UT 84121

Computer Services Associates

5707 Redwood Road
Oakland, CA 94619

Automated Concepts, Inc.

386 Park Avenue S.
New York, NY 10016

Automated Professional Systems, Inc.

11612 Knott St. #13
Garden Grove, CA 92641

Automation Consultants

610 Santa Cruz Ave. #204
Menlo Park, CA 94025

Basic Four Information Systems

14101 Myford Rd
Tustin, CA 92680

Beckman Instruments, Display Systems Div

350 N. Hayden Road
Scottsdale, AZ 85257

Berkus Compusystems, Inc., Hotel Systems Div

3435 Wilshire Blvd #750
Los Angeles, CA 90010

BMC

860 E. Walnut St.
Carson, CA 90746

CApsule Systems Inc.

701 S. Electric
Alhambra, CA 91803

Chase Media Inc.

5284 South 320 W. #C-266
Salt Lake City, UT

Commercial Computer Systems

3605 Long Beach Blvd, #101
Long Beach, CA 90807

Computer Mart, Inc.

3275 E. Platte Avenue, #E
Colorado Springs, CO 80909

Computer Science Corp., Commercial Div

650 N. Sepulveda Blvd
El Segundo, CA 90245

Computer Synergy, Inc.

2201 Broadway
Oakland, CA 94612

Computer System Dynamics

7100 Broadway, #5K
Denver, CO 80221

Conceptics Corp.

5015 Birch
Newport Beach, CA 92660

Construction Information Systems, Inc.

Box 484
Mill Valley, CA 94941

Cory Sound Company

1255 Howard St.
San Francisco, CA 94103

Creative Micro Systems

3822 Cerritos Avenue
Los Alamitos, CA 90720

Cuadra Associates, Inc.

2001 Wilshire Blvd #305
Santa Monica, CA 90403

Custom Computer Service

2210 San Joaquin
Fresno, CA 93721

Cydex Corp.

5953 Laurel Canyon Blvd, #C
North Hollywood, CA 80221

Data-Design Laboratories

7925 Center Avenue
Cucamonga, CA 91730

Data Processing Design

181 W. Orangethorpe, Ste F
Placentia, CA 92670

Data Rentals/Sales, Inc.

8611 Hayden Place
Culver City, CA 90230

Datacount Corp.
19320 Van Ness Avenue
Torrance, CA 90501

Datamed Systems Corp.
7301 Topanga Canyon Blvd
Canoga Park, CA 91303

Concap Computing Systems
Sixty 98th Avenue
Oakland, CA 94603

Construction Data Services, Inc.
9060 Telstar #204
El Monte, CA 91731

Contel Information System, Inc.
130 Steamboat Road
Great Neck, L.I., NY 11024

CPL, Inc.
3080 Olcott St.
Santa Clara, CA 95051

Cross Communications Company
934 Pearl Ste B
Boulder, CO 80302

Custom Applications Systems Inc.
1888 Century Park E. #1605
Los Angeles, CA 90067

Cybermdeic
1341 Canon
Louisville, CO 80303

Dakins Corp.
7475 Dakin St.
Denver, CO 80221

Data Equipment, Inc.
238 E. Caibbean Drive
Sunnyvale, CA

Data Products Maintenance Corp.
9460 Telstar Avenue
El Monte, CA 91731

Database Systems Corp.
1846 East Camelback Road
Phoenix, AZ 85016

Datlease Systems & Financial Corp.
2770 E. Regal Parl Drive
Anaheim, CA 92806

Datatronic Systems Corp., Computer Science Div.
14421 Chase St.
Panorama City, CA 91402

De Faro Software Systems
662 5th St.
Hermosa Beach, CA 9025

Digimedics Corp.
501 Cedar St.
Santa Cruz, CA 95060

Dyatron Corp., Med Sys Div
3720 Sinton Road, #105
Colorado Springs, CO 80907

Eaton Semiconductor
21135 Erwin St.
Woodland Hills, CA 92701

Electron, Inc.
16465 Via Esprillo
San Diego, CA 92128

Fail-Safe Technology
8929 Sepulveda Blvd#105
Los Angeles, CA 90045

F.I. Electronics
968H Piner Road
Santa Rosa, CA 95401

Foodservice Computer Systems, Inc.
25954 Eden Landing Road, #201
Hayward, CA 9025

Forth, Inc.
2309 Pacific Coast Hwy
Hermosa Beach, CA 90254

Iconix Corp.
10441 Bandley Drive
Cupertino, CA 95014

Information Management Intl
1101 S. Winchester Blvd
San Jose, CA 95128

Infoware Systems, Inc.
7330-H S. Alton Way
Englewood, CO 80112

Interactive Systems Corp.
1212 Seventh St.
Santa Monica, CA 90401

Delphi Systems, Inc.
4605 Lankershim Blvd
North Hollywood, CA 91602

Dunford Computer Services
4171 W. Kirkcaldy Circle
S. Jordan, UT 84065

Dynamic Graphics, Inc.
2855 Telegraph Road, Ste 405
Berkeley, CA 94705

E.H. International, Digital Products Div.
7303 Edgewater Drive
Oakland, CA 94621

Electrorent Corp.
4209 Vanowen Place
Burbank, CA 91505

Farm Plan Computer Systems, Inc.
1055 Sunnyvale Saratoga Road
Sunnyvale, CA 94087

Financial Network Architects, Inc.
11030 Roselle St., Ste D
San Diego, CA 92121

Formula Consultants, Inc.
1681 W. Broadway, #214
Anaheim, CA 92802

General Atomic Co.
PO Box 81608
San Diego, CA

Infomatics, Inc.
200 E. Mitchell Drive
Phoenix, AZ 85012

Information Systems Design, Inc.
2500 Mission College Blvd
Santa Clara, CA 95054

Inter-Care
2044 Armacost Avenue
Los Angeles, CA 90025

Keuffel & Esser Company
20 Whippany Road
Morristown, NJ 07960

Kimbrough Computer Sales
4725 Independence
Denver, CO 80033

Loggical Systems
10150 Sorrento Valley Road
San Diego, CA 92121

Lolean Data Management, Inc.
529 S. Second Ave.
Covina, CA 91723

Management Dimensions Corp.
185 East Garfield
Pomona, CA 91761

Marc Analysis Research Corp.
260 Sheridan Avenue
Palo Alto, CA 94306

MDG, Inc.
2935 Baseline Road, Ste F
Boulder, CO 80303

Mini Data Systems
2041 Rosecrans, Ste 359
El Segundo, CA 90245

Mosman Electronics
345 N. Amphlett
San Mateo, CA 80033

Odin Data Systems, Inc.
425 Bush St., Ste 205
San Francisco, CA 94108

Orion Systems, Inc.
3350 Scott Blvd, #34
Santa Clara, CA 95051

Performance Software Corp.
1322 Webster St.
Oakland, CA 94612

Polymorphic Systems
5730 Thornwood Drive
Santa Barbara, CA 93117

Professional Bus. Computer Sys
10215 N. Scottsdale Road
Scottsdale, AZ 85253

Lantor Information Systems
8055 Manchester Avenue
Playa del Rey, CA 90291

Logicon Inc.
3701 Skypark Drive
Torrance, CA 90505

Management Consulting Services
2715 East 3300 S.
Salt Lake City, UT 84109

Marathone Mgmt Systems Inc.
1690 38th St. #212
Boulder, CO 80301

Marfam Corp.
5340 Thornwood Drive
San Jose, CA 95123

Microcomputer Consultants
1623-A Fifth St.
Davis, CA 95616

Minicom Systems
606 N. Larchmont Blvd
Los Angeles, CA 90004

NCA Corp.
388 Oakmead Parkway
Sunnyvale, CA 94086

Open End System
PO Box 2926
Newport Beach, CA

P.B. Industries, Inc.
3685 Enochs St.
Santa Clara, CA 95051

Point 4 Data Corp.
2569 McCabe Way
Irvine, CA 92714

Processing Management Systems
2269 W. Desert Cove
Phoenix, AZ 85029

Promedics Data Corp.
1032 Elwell Court, Ste 240
Palo Alto, CA 94303

Quality Systems, Inc.
17822 East 17th St.
Tustin, CA 92680

Rapid Data Inc.
215 North 5th St.
Redlands, CA 92373

SDI: Industry Systems Inc.
1543 W. Olympic Blvd, Ste 306
Los Angeles, CA 92123

Transportation Mgt Services
2155 SS. 3270 W.
Salt Lake City, UT 84119

Wismer & Becker
PO Box 1168
Sacramento, CA 95806

Rapattoni Corp.
924 Westwood Blvd #825
Los Angeles, CA 90024

Relational Software Inc.
3000 Sand Hill Road
Menlo Park, CA 94025

System Development Corp.
2500 Colorado Avenue
Santa Monica, CA 90406

Wayman & Associates, Inc
217 Pacific Coast Hwy
Redondo Beach, CA 90277

APPENDIX "G"
Mailing List — Hardware Distributors

Acro Corporation
2515 McCabe Way
Irvine, CA 92713

Advanced Technology
26120 Eden Landing Road
Hayward, CA 94545

Agency Computers of San Diego
1911 San Diego Ave.
San Diego, CA 92110

AGT Computer Products, Inc.
20675 S. Western Ave, Ste 100
Torrance, CA 90501

Amcor Computer Corporation
1900 Plantside Drive
Louisville, KY 40299

American Computer & Engineers, Inc.
2001 S. Barrington #204
Los Angeles, CA 90025

American Peripheral Exchange
900 Larkspur Landing Cr
Larkspur, CA 94939

Andromeda Systems Inc.
9000 Eton Ave
Canoga Park, CA 92713

Anrix Computer, Inc.
20525 Mariani
Cupertino, CA 95014

Applied Systems Co.
6910-B Miramar Rd., #205
San Diego, CA 92121

Argos, Inc.
790 W. Shaw Ave #360
Fresno, CA 93704

Arrow Electronics, Inc.
900 Broad Hollow Road
Farmingdale, NY 11735

Aspen Ribbons, Inc.
1700 N. 55th Street
Boulder, CO 80301

Advanced Bus. Computers, Inc.
1499 Bayshore Hwy, #200
Burlingame, CA 94010

AEM Computer Services, Inc.
2930 E. Northern Ave
Phoenix, AZ 85028

Agency Computers of the Inland Empire
22470 Barton Road
Colton, CA 92324

Alpha Computer Supply, Inc.
9625 Mason Ave
Chatsworth, CA 01311

Amer. Bus. Computers Trading Corp
3600 Standish Ave
Santa Rosa, CA 95401

American National Supply Corp.
1243 W. 134th Street
Gardena, CA 90247

American Teledata Corporation
7000 Broadway, Bldg 2, No 200
Denver, CO 80221

Anker Data Sales & Services, Inc.
1425 B. Centre Circle Drive
Downers Grove, IL 60515

Applied Software Corporation
3269 S. Main, Ste 220
Salt Lake City, UT

Aregon Group, Ltd
1911 Wright Circle
Anaheim, CA 92806

Arizona Data Products, Inc.
3710 S. Park Ave #709
Tucson, AZ 85713

ASAP Computer Products, Inc.
1198 E. Willow Street
Signal Hill, CA 90806

Associated Business Products
193 West 2100 St.
Salt Lake City, UT 84115

Associated Data Supply
3921 Wilshire Blvd
Los Angeles, CA 90010

Automated Systems, Inc.
3300 S. Madelyn Lane
Sioux Falls, SD 57106

Basic Systems, Inc.
230 W. Florence Ave.
Inglewood, CA 90301

Byte Industries, Inc.
23100 Cabot Blvd.
Hayward, CA 94545

Cabledata
3200 Arden Way
Sacramento, CA 95825

California Digital, Inc.
4738 156 Street
Lawndale, CA 90260

David Jamison Carlyle Corporation
2049 Century Park E., 30th Floor
Los Angeles, CA 90067

Compusolv Corp.
28 East 2100 St. S. #108
Salt Lake City, UT 84115

Computer Data
4601 E. Beverly Lane
Phoenix, AZ 85032

Computer World
1320 Webster Street
Oakland, CA 94612

Computer Media Products
5482 Complex Street, #110
San Diego, CA 92123

Automated Data Exchange
2620 Dana Street, Ste 4
Berkeley, CA 94704

Barnhill Associates, Inc.
7076 S. Alton Way, Bldg A
Englewood, CO

Business Resource Service
3002 E. McDowell Road
Phoenix, AZ 85008

Byte Shop/Brentwood
11611 San Vincente Blvd.
Los Angeles, CA 90049

Cabot Business Systems, Inc.
25283 Cabot Road, #108
Laguna Hills, CA 92653

California Minicomputer Systems
5534 Westlawn Ave.
Los Angeles, CA 90066

Century Analysis, Inc.
114 Center Ave.
Pacheco, CA 94553

Consolidated Data Terminals
9795 Business Park Drive, Ste F
Sacramento, CA 95827

Computer Input Corp.
1840 S. Elena
Redondo Beach, CA 90277

CMTI
6060 West 91st Ave
Westminister, CO 80030

Computer Metrics
1251 Broadway
El Cajon, CA 92021

CVM Systems
585 Manzanita Ave, #7
Chico, CA 95926

Data Pro, Ltd
1234 W. Cedar Ave.
Denver, CO 80223

Datacorp
5075 SW Griffin Drive
Beaverton, OR 97075

Electro
5128 Calle Del Sol
Santa Clara, CA 95050

Far West Data Systems, Inc.
17841 Fitch Street
Irvine, CA 92714

Gemini Associates, Inc.
461 S. Glassell
Orange, CA 92666

Group III Electronics, Inc.
2613 Manhattan Beach Blvd.
Redondo Beach, CA 90278

Information Resources
7995 E. Prentice Ave., 40 East DTC
Englewood, CO 95926

International Electronics Mktg
1518 Broadway
Tucson, AZ 85719

The Koffler Group
1301 Lachman Lane
Pacific Palisades, CA 90272

Manufacturers Resources & Planning Inc.
1430-M S. Village Way
Santa Ana, CA 92675

Micro Business Applications
11568 Sorrento Valley Road
San Diego, CA Micro Business World

Minicom Systems
1425 West 12th Place
Tempe, AZ 85281

D & O Leasing, Inc.
23361 Penalta
Laguna Hills, CA 92653

Data Systems Marketing
2680 Bayshore Frontage Road
Mountain View, CA 94043

Dayton-Forester Associates, Inc.
8740 Shirley Ave.
Northridge, CA 91324

Electrolabs MKW
4966 El Camino Real
Los Altos, CA 94022

George Foldvary & Associates, Inc.
400 S. Beverly Drive, #310
Beverly Hills, CA 90212

Gentry, Inc.
430 49th Street
Oakland, CA 94609

Hamilton/Avnet
10950 W. Washington Blvd.
Culver City, CA 90230

International Data Equip & Accessories
3350 Scott Blvd
Santa Clara, CA 95052

Kierulff Electronics, Inc.
2585 Commerce Way
Los Angeles, CA

MAC-I
210 S. Main St., Ste 111
Milpitas, CA 95035

Metrocomp, Inc.
3250 Ocean Park Blvd
Santa Monica, CA 90405

Microsource
18720 Oxnard Street, #108
Tarzana, CA 91356

Minicomputer Exchange, Inc.
606 N. Larchmont Blvd
Los Angeles, CA 90004

MQI Computer Products
18381 Bandelier Cir.
Fountain Valley, CA 92708

Pacific Computer Marketing
916 N. Western Ave. #216
San Pedro, CA 90732

Pacific Exchanges
100 Foothill Blvd
San Luis Obispo, CA 93401

Paragon Sales, Inc.
780 Charcot Ave.
San Jose, CA 95131

Peninsula Office Supply
1205 Veterans Blvd.
Redwood City, CA 94063

Peripheral Marketing
1400 Stierlin Road
Mountain View, CA 94043

PGI Wholesale
1425 W. 12th Place
Tempe, AZ 85281

Qualtech Associates
4151 Middlefield Road
Palo Alto, CA 92708

Randal Leasing Inc.
20655 Western Ave., #101
Torrance, CA 90501

San Diego Computer Dynamics, Inc.
9740 Appaloosa Rd
San Diego, CA 92131

Shasta General Systems
1329 Moffett Park Drive
Sunnyvale, CA 94086

Source Data Products, Inc.
555 Soquel Ave.
Santa Cruz, CA 95060

TBM
168 E. Second, S
Salt Lake City, UT 84111

OSAM, Inc.
3131 N. 35th Ave.
Phoenix, AZ 81017

Pacific Computer Output Microform Corp.
677 Ala Moana, #503
Honolulu, HI 96813

Par Associates, Inc.
105-15 E. 40th Ave., Ste 103
Denver, CO 80237

PBC Associates
1926 Quebec Way
San Jose, CA

Peripheral Equipment Inc.
930 S. State St. #50
Orem, UT 84057

Peripherals, Inc.
6525 N. 15 Ave. #233
Phoenix, AZ 85015

PLS Associates, Inc.
7755 E. Quincy Ave., T-9
Denver, CO 80237

Quest Electronics
2322 Walsh Ave.
Santa Clara, CA 95051

Research Information Corp

5375 Western Ave.
Boulder, CO

Second Source Computer Inc.

14762 Bently Circle
Tustin, CA 92680

Sigma International Trading Corp.

2269 W. Desert Cove Ave.
Phoenix, AZ 85029

Stellar Systems

231 Charcot Ave.
San Jose, CA 95131

Telefile Computer Products, Inc.

17131 Daimler Street
Irvine, CA 92714

Thought Works, Inc.

3532 W. Thomas Road
Phoenix, AZ 85019

Western Business Computers

2025 Gateway Place 220
San Jose, CA 95110

XXCAL, Inc.

11704 Wilshire Blvd, Ste 226
Los Angeles, CA 90025

Vista Computer Co., Inc.

1317 E. Edinger Street
Santa Ana, CA 92705

R.V. Weatherford Co.

6921 San Fernando Road
Glendale, CA 91201

Zimon Associates, Inc.

3540 Wilshire Blvd, Ste 709
Los Angeles, CA 90010

APPENDIX "H"
**Computer and Computer Systems
Manufacturers**

Astronautics Corp. of America

P.O. Box 523
Milwaukee, WI 53201 (414) 447-8200
Pat Zingen

C. Itoh Electronics, Inc.

5301 Beethoven Street
Los Angeles, CA 90066 (213) 306-6700
Robert Cowan, V.P.

Bo-Sherrel Co.

36133 Niles Blvd.
Fremont, CA 94536 (415) 792-0354
Sylvia Anderson

Advanced Micro Devices

901 Thompson Place
Sunnyvale, CA 94086 (408) 732-2400
George Scalise, Senior V.P.

NESCO

107 San Zeno Way
Sunnyvale, CA 94086 (408) 737-2080
Ralph Flannery, Communications

Mountain Computer, Inc.

300 El Pueblo Road
Scotts Valley, CA 95066 (408) 438-6650
Debbie Aldridge, Marketing Manager

TEK-COM, Inc.

2142 Paragon Drive
San Jose, CA 95131 (408) 263-7400
Joe Grainer, V.P. Marketing

ETI Micro, Inc.

6918 Sierra Court
Dublin, CA 94566 (415) 829-6600
Ron Lenberger, General Manager

Dicom, Inc.

715 N. Pastoria Ave.
Sunnyvale, CA 94086 (408) 732-1060
Dave Robertson

Sperry Univac (Branch in Salt Lake City)

P.O. Box 500
Blue Bell, PA 19424 (215) 542-4011
Guy Printer

Amlyn Corp.

24500 Autumn Vale Drive
San Jose, CA 95131 (408) 946-8616
Hy Ram

Comrex International Inc.

2701 Skypark Drive
Suite 1200
Torrance, CA 90505 (213) 373-0280
Y.M. Kimm, V.P.

APPENDIX "I"
Turnkey Systems Companies

Automation Consultants

610 Santa Cruz Ave.
Suite 204
Menlo Park, CA 94025 (415) 326-4031
R. Allen Carl, President

Century Electronics

P.O. Box
Tiburon, CA 94920 (415) 388-3486
Thomas Lewis

Cross Information Company

934 Pearl
Boulder, CO 80302-5181 (303) 499-8888
Thomas B. Cross

Hans B. Wynolds

20480 Pacific Drive
Culpertino, CA 95014 (408) 257-4045
Hans B. Wynolds

McCue Systems, Inc.

330 Primrose Road
Burlingame, CA 94010 (415) 348-0650
Ms Francine Ostenton, VP Marketing

Pace Industries

2110 West Peohra Avenue
Phoenix, AZ 85029 (602) 944-4608
Tom Whittaker, Sales Manager

System Development Corp.

2500 Colorado Ave
Santa Monica, CA 90406 (213) 453-5130
J.C. Zinzer, V.P. Corporate Planning

APPENDIX "J"
Hardware Distributors

Computer Datacom, Inc.

17767 Mitchell
Irvine, CA 92714 (714) 540-6327
Neil Gleason, President

Eakins Associates

999 Independence Ave
Mountain View, CA 94043 (415) 969-4533
Gilbert Eakins, President

Interlink Systems

580 Weddell Drive, Suite 1
Sunnyvale, CA 94086 (408) 744-1930
Kenneth Larsen, President

1st Solutions

(A Datamation Services Inc. Company)
2001 E. Campbell Avenue
Phoenix, AZ 85016 (602) 957-0999
Don Shifris, President

Jade Computer Products Inc

4901 W. Rosecrans
Hawthorne, CA 90250 (213) 973-7707
Scott L. Anderson, President

Southwest Data Systems Inc

2509 Empire Avenue
Burbank, CA 91504 (213) 841-1610
Jim Stirling, Sales Manager

Supply Depot Inc

290 Easy Street, Unit 4
Simi Valley, CA 93065 (213) 583-0505
D. Jordan, VP Sales

Video Specialists Inc

18003-L Sky Park South
Irvine, CA 92714 (714) 261-5112
Mark Jones, Manager Computer Products

Western Scientific Marketing

5402 Ruffin Road, Bldg. 107
San Diego, CA 92123 (619) 565-6699
Tom Johnson, President

APPENDIX "K"

Software Distributors & Manufacturers

Microtech, Inc.

505 West Olive Ave
Sunnyvale, CA 94086

(408) 733-2919

Jenny R. Kirk, President

Mitec Computer Business Systems

21250 Califa Street
Woodland Hills, CA 91367

(213) 999-2311

Ron Ensley, VP Marketing

Pacific Software Manufacturing Co

2608 8th Street
Berkley, CA 94710

(415) 540-6165

John Morgan, President

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