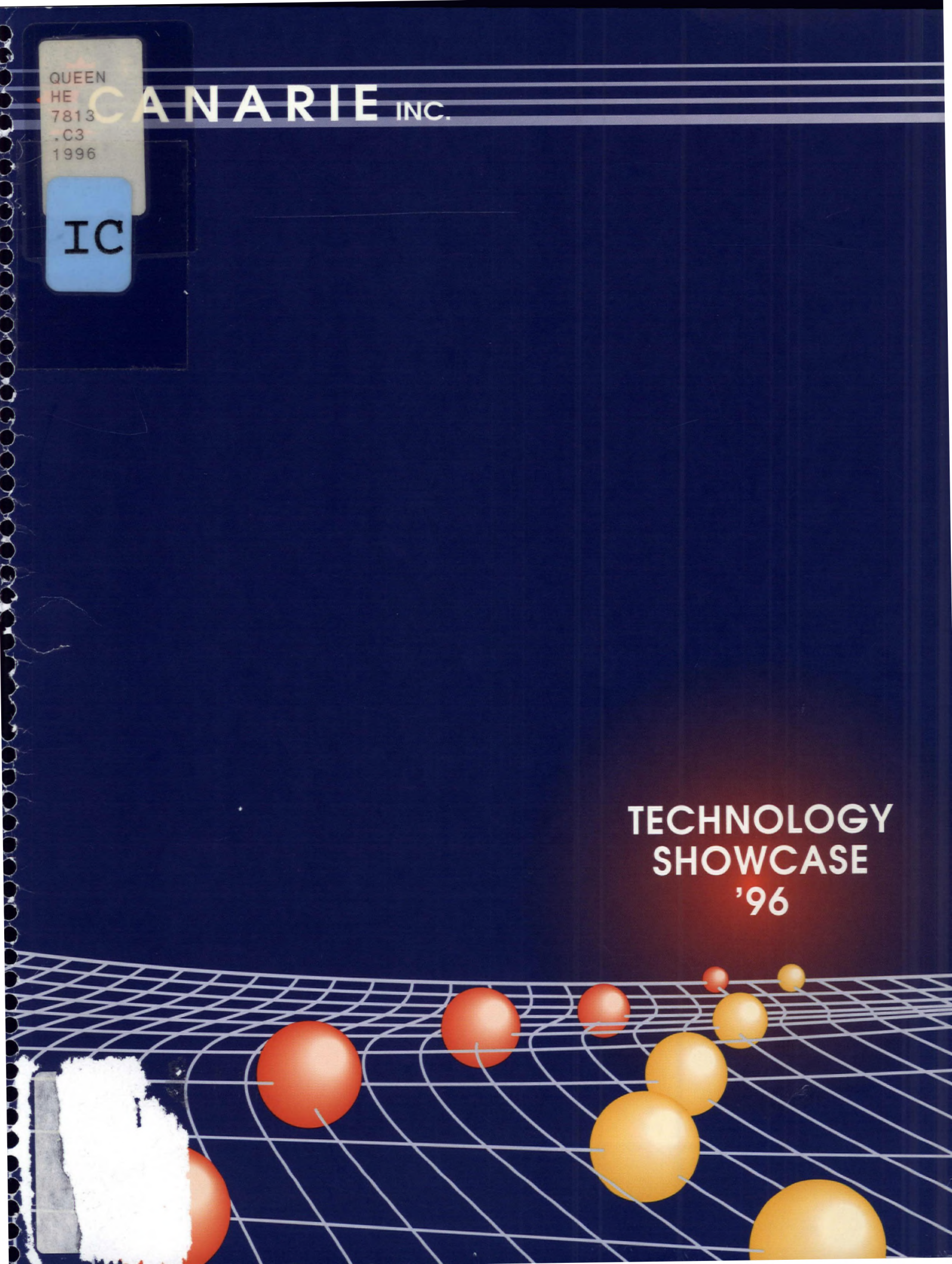
CANARIE INC.

TECHNOLOGY SHOWCASE '96



CANARIE INFORMATION HIGHWAY TECHNOLOGY SHOWCASE

Canadian Broadband Products and Applications

June 1996

Sponsored By:

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Canarie Inc.

INTRODUCTION

CANARIE Inc., in collaboration with Industry Canada and the Department of Foreign Affairs and International Trade, is pleased to present the second edition of the *CANARIE Information Highway Technology Showcase*, a publication featuring profiles of innovative Canadian vendors of broadband products and applications interested in forming international partnerships.

Sixty-three Canadian companies, representing a cross section of the many Canadian firms developing such products, are listed in the *Showcase*. These firms however represent only a small fraction of the hundreds and perhaps thousands of Canadian firms now working in this field.

Many of the firms profiled have been involved in CANARIE-sponsored research activities. Most are CANARIE members, although this was not a criteria for selection in the *Showcase* publication. All of the companies described are involved in activities relating to the Information Highway. Some are suppliers of equipment, while others develop software, provide services or are building network applications. Each firm is interested in forming partnerships with other companies in order to expand their business and market activities and broaden their technology development.

We invite you to take a close look at the Canadian capabilities described in the *CANARIE Information Highway Technology Showcase*. Then if you would like further information about any of the companies profiled please contact the companies ***directly*** at the addresses shown.

For further information on international partnership opportunities please contact:

Industry Canada
Tel. 613.954.3289

Department of Foreign Affairs and International Trade
Tel. 613-995-0796

CANARIE Inc.
Tel. 613-660-3634

PARTNERS WANTED:

The Canadian companies profiled in the *CANARIE Information Highway Technology Showcase* publication are interested in a wide variety of technology, marketing and development partnerships with international firms.

Information Technology Partners Wanted:

- communications equipment manufacturers - ethernet, ATM, ISDN, wireless, video-conferencing
- courseware developers
- information security specialists
- Internet services providers - access providers, Web server farms, Web site preparation services
- multimedia developers - games, CD-ROMs
- on-line publishers
- PC product resellers and distributors
- satellite communications companies
- software developers - HTML, Web browser, Internet search engines, e-mail
- software resellers - connectivity, Macintosh, programming tools, client/server development tools, document

management
- system integrators - LAN/WAN networking, electronic messaging
- telecommunications services providers
- telephone companies, PTTs
- value-added resellers - networking products, EDI products, UNIX utilities, client/server developers
- value-added network providers - EDI, electronic commerce

Partners Wanted in Other Sectors:

- advertising agencies
- banks and financial services companies
- educational, training and distance-learning organizations
- entertainment companies
- government agencies and departments
- healthcare and medical organizations - medical libraries, pharmaceutical companies, medical publishers, testing and diagnostic software developers
- legal information and services providers
- public safety and law enforcement organizations and product vendors
- television - cable TV, broadcast networks, television stations and sales reps

CANARIE INC.

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BACKGROUND AND HISTORY:

In 1991, the Canadian federal government began working with Canadian companies and institutions to form an organization that could facilitate the development of future critical aspects of Canada's information infrastructure, and thereby contribute to the growth of a knowledge-based economy and society in Canada. The organization that grew from these discussions was the Canadian Network for the Advancement of Research, Industry and Education (CANARIE). Since that time, CANARIE has grown to over 140 members, governed by a 21 member Board, representing private and public sector organizations.

CANARIE PHASE I:

By early 1993, CANARIE had defined a three-phase, seven year program of activities. The expected cost of the proposed initiatives was over $ 1 billion, with $ 206 million anticipated from the federal government. The anticipated total revenues for Canadian industry, to be generated over the period 1993-2002, were estimated to be $ 9 billion, including the creation of over 24,000 person-years of high-value-added jobs.

In June 1993, the first phase of CANARIE's plan was supported by an award of $ 26 million from Industry Canada. During this phase, CANARIE's focuses were to initiate the creation of an advanced networking infrastructure in the country, to stimulate the development by Canadian companies of innovative networking products, applications and services, and to upgrade the operational network, *CA*net*.

Phase I results included:

- *National Test Network (NTN)* - a Test Network linking regional ATM test networks across the country at T3 (45 Mbps) speeds was installed. The *NTN* provides an environment for developing and testing new technology, applications and services that are needed for future broadband networks.
- *Technology Development/Technology Diffusion (TD2) Projects* - 42 projects, totalling more than $ 50 million and supported by $ 15 million in CANARIE funding, have been undertaken.
- *Operational Network* - CANARIE has funded increased capacity and extensions to *CA*net*, Canada's national Internet network.
- *Operational Network Products and Services* - CANARIE provided support to sixteen projects that will add new databases and services on *CA*net*.

CANARIE PHASE II:

Phase II of the CANARIE program was recently launched and will be implemented over a four year period, from April 1995 until March 1999. Total investment for Phase II activities is estimated to be over $ 400 million, of which the federal government has contributed $ 80 million. Building on the strengths and successes of Phase I, Phase II plans include:

- *National Test Network* - expansion of NTN in co-operation with the carriers, technology developers, and regional test networks. A three-stage roll-out will create a distinct NTN at OC-3 (155 Mbps).
- *Technology and Application Development (TAD)* - a broadened version of the TD2 program will be initiated with increased weight on innovative application and service development.
- *Operational Network* - CANARIE's support will be used to move *CA*net* to much higher line capacities, and to bring the network closer to achieving a self sufficient financial base.
- *Outreach Program* - to promote the development of Canada's information infrastructure, the competitiveness of Canada's information technology and telecom sectors.

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AASTRA CORPORATION

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KEY PERSONNEL:

Francis Shen - President
Tony Shen - Vice President - Operations
Hugh Scholaert - VP, Marketing

NATURE OF BUSINESS:

Aastra Corporation is a group of companies and divisions providing engineering services and manufacturing products for the aerospace, defence, telecommunications and biotechnology sectors. The Aastra group is made up of: Aastra Advanced Ceramics Inc, Aastra Aerospace Inc., Aastra Biotechnology and Aastra Telecommunications.

COMPANY PROFILE:

Year Established: 1970
Private Company
Number of Employees: 30
Annual Revenues: $6 million (1995)

Offices: Aastra's head office is located near Toronto, Ontario. Additional manufacturing facilities are in Lindsay, Ontario.

Key Customers:
- BC Telecom
- Bell Canada
- Canadian Space Agency
- Department of National Defence
- GTE
- Magnavox
- Raytheon
- Sprint

COMPANY BACKGROUND AND HISTORY

Incorporated in 1970 as Aastra Aerospace Inc., the company initially focused on providing professional engineering services for the aerospace and defence sectors. These activities continue to form the base of operations for the group, but in addition the Aastra Aerospace division now serves as the centre of corporate research and development and has a mandate to spin off aerospace and defence technologies to other

markets. To date, this mandate has resulted in the establishment of several divisions and subsidiary operations. Aastra Advanced Ceramics Inc., which began operations in 1964 as a materials research laboratory, is a leading piezoelectric ceramics manufacturer. Aastra Biotechnology was formed in 1991, as a result of work performed for the Canadian Space Agency, and focuses on the development and manufacture of laboratory equipment. A fourth division, Aastra Telecommunications was set up in 1992 and is a developer and manufacturer of telephony devices.

BUSINESS AND PRODUCT DESCRIPTION:

The business activities of the various divisions and subsidiaries of Aastra Corporation include:

Aastra Advanced Ceramics Inc. - is one of the largest producers of piezoelectric ceramics in North America and operates a ceramic manufacturing facility with a capacity to process in excess of 200 metric tons of material per annum and over 30,000 ceramic components each month. It produces piezoelectric components of Lead-Zirconate-Titanate, and Alumina structural materials, primarily for ultrasonic transducers for underwater acoustics. Aastra piezoelectric ceramics conform to MIL-STD-1376 and are manufactured in accordance with the guidelines of AQAP-4. Aastra's commitment to quality has resulted in several awards, including the Magnavox Quality Excellence Award and the Canada Award for Excellence.

Aastra Aerospace - provides systems engineering expertise that extends from studies and simulations to systems integration. Aastra Aerospace has the ability to design and build operating systems for the most demanding applications and has received several space agency contracts. Aastra's strong engineering skills combined with well-equipped laboratories provide a versatile environment for the development of advanced sensors and actuators for aviation, space and robotics applications.

The Aviation Services group within Aastra Aerospace has worked on over 100 different aircraft types, and provided more than 1000 aircraft installations and modifications. With a strong commitment to quality and reliability, Aastra Aerospace is one of the few companies accredited as a Design Approval Organization (DAO) to approve airframe modifications on behalf of Transport Canada.

Aastra Biotechnology -is focused on the development and manufacture of laboratory equipment. Aastra's Biotechnology group actively collaborates with research scientists across Canada and internationally.

Aastra Telecommunications - is expected to be a major factor in the growth of the Aastra group of companies. Already a supplier to Bell Canada as well as to distributors in the United States, Aastra Telecommunications is committed to developing a comprehensive line of telephony products. Some of the Telecommunications Division's initial products include:

- *Voice™ 8000* - Aastra's *Voice™ 8000* product works with a telephone company's caller identification services to provide both name and number identification for incoming calls.
- *Ring Selector™* - works with a phone company's ring selection identification service to allow users to have two or three phone lines connected to a single telephone line. Different ringing sequences are associated with each telephone number. With a *Ring Selector™* connected to a phone or fax machine, only the selected ringing sequence will be allowed to pass through. *Ring Selector™ II* offers the same functionality with an additional output port and compatibility with other phone company services (i.e. call display, return answering).
- *BusyLine Switch™* - prevents

an extension phone from interrupting conversations or transmissions taking place on the same line. If the extension needs to participate in a conference call, depressing the *BusyLine Switch* button will re-connect it. Once the conference call is over the Busy Line Switch will automatically reset itself.

INFORMATION HIGHWAY

Aastra Corporation is a group of companies and divisions providing engineering services and manufacturing products for the aerospace, defence, telecommunications and biotechnology sectors. Aastra has been applying its engineering design expertise and experience to a number of projects relating to the information superhighway, particularly in the areas of telerobotics, teleoperation and telescience.

Telerobotic Control Architecture Testbed (TCAT)

Under contract to the Canadian Space Agency, Aastra has been involved in a project with Telesat, the Communications Research Centre (CRC), CAE Electronics, KSI and ISE, that utilizes Aastra's *TCAT* technology. *TCAT* encompasses an open architecture for control partitioning (based on NASA/NBS NASREM standards) and communications systems trade-off analyses (based on ATM protocols). To date, Aastra has demonstrated the real-time remote control of a small tele-operated vehicle, implementing as well a voice-activated tilt and pan video camera for visual feedback. The control and video information was transmitted over an ATM-based network, using an Anik E1 satellite link. The control centre is now implementing various predictive displays (3D imaging tools) and head-mounted displays for improved visualization using virtual reality.

System for the Management of Automation and Remote Teleoperation (SMART)

A joint effort between Aastra, Noranda,Telesat, the CRC and STAS, the project objective is to develop a broadband SMART prototype and to demonstrate its application in the mining sector. Combining the STAS/ Noranda Integrated Mine Automation System (IMAS), the Telesat satellite communications network, and Aastra's *TCAT*, the SMART prototype will be used to demonstrate two operational scenarios:

- Information Management System - the remote mine's Information Management System will be accessed for both video information and raw data.
- Remote Technical Assessment and Trials - the progress of a remote teleoperated/automated piece of equipment will be accessed by personnel at STAS and Noranda.

CSA Telefunction Control Centre

Based on Aastra's telescience experiments for the biotechnology community, Aastra is integrating an Internet-based Telefunction Control Centre demonstration. This system combines a temperature- controlled protein crystallization environment with a telerobotic platform, allowing experiment users or any global observers to capture video information of protein crystals grown under specific temperature profiles. Remote experiment control will be available with the consent of a "Super-user" (in this case the Canadian Space Agency). It is expected that this system will be expanded to include actual space-based scientific experiments planned for 1996.

STRATEGIC RELATIONSHIPS:

- *Bell Canada* - OEM supplier
- *Sprint* (US) - OEM supplier

INTERNATIONAL PARTNERING INTERESTS:

Aastra is interested in finding partners or projects internationally that might benefit from Aastra's expertise and experience in developing advanced telerobotic, tele-operation and tele-science applications.

Aastra's Telecommunications Division is also interested in finding companies with which it might develop OEM or marketing relationships for its line of telephony products. Prospects might include telephone equipment manufacturers or telephone service providers.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Most of Aastra's current business activities involve sales made to North American customers. However the company is interested in expanding its market geographically and would like to identify additional partners with which it might work internationally.

Aastra's Telecommunications Division is interested in finding companies with which it might develop OEM or marketing relationships for its line of telephony products. Prospects might include telephone equipment manufacturers or telephone service providers.

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NATURE OF BUSINESS:

Absolu Inc. is a private Canadian company established in Sainte-Foy, on the outskirts of Quebec City, since 1991. Absolu Inc. develops, produces, and markets the "telWEB" family of products for public telecommunication networks, which provide the public with multimedia telecommunication and information services where one would usually find public phones.

COMPANY PROFILE:

Private
Year Established: 1991
Number of Employees: 21
Annual Revenues: $395 000 (Cdn)
Strategic Alliances: Bell Mobility Cellular, Québec Téléphone, Defense Research Establishment Valcartier, Bank of Montreal, Desjardins, Banque Nationale
Key Customers: Microcell, Montreal airports, Québec Telephone, MacKay Meters, Cegelec/Alcatel

COMPANY HISTORY:

Absolu developed the first prototype of the multimedia terminal in 1992 and 1993 in collaboration with Bell Mobility Cellular. In 1994, Absolu is financed by TechnoCap inc., a dynamic venture capital company in Canada. With this new financial partner, Absolu is now able to develop a new generation of public phones, the "telWEB Payphones". In 1995, thanks to a contribution from CANARIE, a new partnership is established between Absolu, Québec Téléphone and the Defense Research Establishment Valcartier in order to develop the "telWEB Internet Server System

INFORMATION HIGHWAY

Absolu Inc. is a private Canadian company established since 1991. Absolu Inc. develops, produces, and markets the "telWEB PayPhone" and the "telWEB Internet Server" for public telecommunication networks. The "telWEB PayPhone" is the size of a conventional pay phone, but offers multimedia information services and access to the Internet as well as telephone and fax services. The "telWEB Internet Server" provides management tools for vast networks of "telWEB PayPhones". The "telWEB" family of products

consists of different modules, each with a specific function. Management, network control, financial transactions and data processing are only some examples of the many functions available. Since January 1996, the first "telWEB Internet Server" system is being implemented for Québec Téléphone and starting in May 1996, the first "telWEB PayPhone" networks will be installed on the territory of Québec Téléphone, an associated member of Stentor and a subsidiary of GTE.

- ***INTERNATIONAL PARTNERSHIP INTERESTS:***

Geographic Markets: United States, South America, Southeast Asia (except Japan), Europe
Potential Partners: software; telephone companies; distributors
Type of Alliances Sought: technology transfer; co-development of product or technology; joint marketing and sales; and or distribution.

Absolu is seeking international partners to perfect its software design, production and marketing capabilities. Absolu is looking for opportunities to develop specific technologies for each particular market. It is also essential for Absolu to find component suppliers for the "telWEB payphone" production. Finally, Absolu would like to establish new partnerships to ensure the marketing of its products within new markets where direct sale is limited. Europe and South-East Asia are key areas of interest for this type of partnership.

ALEX INFORMATICS INC.

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KEY PERSONNEL:

Marc Labrosse - President and CEO
Noel Cheeseman - Vice-President and COO
Michel Plante - Vice-President, Director of Finance
David Beauchamp - Vice-President, Marketing
Abel Ferreira - Vice-President, R&D and Production
Louis Morin - Vice-President, Sales

NATURE OF BUSINESS:

ALEX is Canada's only parallel computer company. It develops hardware, software development tools and applications for high-performance computing tasks such as interactive video-on-demand, image processing, and real-time simulation.

COMPANY PROFILE:

Year Established: 1988
Private Company
Number of Employees: 75
Annual Revenues: $ 20 million (1994)

Offices: Alex Informatics' head office is located in Lachine, Quebec, Alex Informatique S.A.R.L. is located in Annecy, France and Alex Parallel Computers is located in Ithaca, N.Y.

Key Customers:

- Boeing
- CAE Link
- Carleton University
- Hydro Québec International
- National Research Council
- Université du Québec à Trois-Rivières
- Université du Québec à Montréal
- University of Regina

COMPANY BACKGROUND AND HISTORY:

ALEX was founded in Montreal in June 1988 and has since carved out a niche in the promising field of massively parallel processing (MPP) systems. ALEX has traditionally focused on three areas:

- *parallel computers* - flexible and scaleable high performance hardware for research and application development
- *software development tools* - a complete software development environment for the creation of application software to run on parallel platforms
- *application systems* - dedicated application software that uses parallel hardware for optimal performance. Leading this application focus is a new product line of *media servers* targeted at the corporate training, distance learning, interactive video-on-demand, video-enabled presentation, video library access and video surveillance markets.

BUSINESS AND PRODUCT DESCRIPTION:

Alex Media Server:

The *Alex Media Server* is a scaleable, multi-user digital video media server designed for applications such as corporate training, multimedia presentations, video- enabled applications, video library access, video surveillance archiving and interactive video-on- demand, supporting 25 to 1000 simultaneous users. The open architecture of the *Alex Media Server* is based on industry standards thereby providing connectivity and management within the corporate IT environment. *Alex Media Server* features:

- Pentium-based hardware - EISA and PCI bus processors provide high performance to deliver video streams simultaneously.
- NetWare 4.1 or Windows NT Advanced Server Operating System - for industry standard LAN connectivity to users and other servers.
- support for Ethernet, Fast Ethernet, ISDN, FDDI, ATM and other communication standards. The *Alex Media Server* is compatible with 10BaseT LANs providing service to corporate users.
- support for standard LAN protocols including IPX, IP, and NetBIOS.
- compatibility with all digital video/audio formats: MPEG 2, MPEG 1, AVI, QuickTime, JPEG and other bitmap or vector formats. MPEG 1 is recommended for full-motion video/audio.
- the industry's highest performance, with up to 10 MPEG 1 video streams per LAN segment (10BaseT).

The *Alex Media Server* offers each user full VCR control, including Play, Pause, Stop, Rewind and Forward capabilities. It can be configured for video and data storage using industry standard SCSI disk drives. By using accepted network operating systems the *Alex Media Server* is compatible with all existing management facilities such as SNMP and with evolving networking standards.

AVX Series 2 Parallel Computer

The *AVX Series 2* parallel computer from ALEX is designed as a flexible, high-performance computing system offering unsurpassed performance value for users on UNIX workstations and PCs. The open architecture design makes the machine an easy fit into today's compute intensive environments. With its fully scaleable power, the *AVX* architecture ensures a smooth performance growth path. The *AVX Series* parallel systems make parallel processing easy to use and implement, whether the application involves simulation, modelling, process control, visualisation or any other computationally intensive application.

ALEX INFORMATICS AND THE INFORMATION HIGHWAY:

Drawing on its expertise and experience in building massively parallel processing (MPP) systems, ALEX has introduced a new product line of media servers, based on an MPP architecture.

Alex Media Server:

The *Alex Media Server* is a scaleable, multi-user digital video media server designed for applications such as corporate training, multimedia presentations, video- enabled applications, video library access, video surveillance archiving and interactive video-on- demand, supporting 25 to 1,000 simultaneous users. The open architecture of the *Alex Media Server* is based on industry standards thereby providing connectivity and management within the corporate IT environment. *Alex Media Server* features:

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INTERNATIONAL PARTNERING INTERESTS:

ALEX Informatics has a number of value-added partners who develop applications exploiting the power of parallel processing. These applications include real-time simulation systems for hydro-electric distribution grids, simulators for advanced signal processing systems and image processing. ALEX is open to establishing business relationships with firms interested in developing new applications, providing systems integration services or offering turnkey systems, which would benefit from ALEX's parallel computing technology.

For the new *Alex Media Server* product line, ALEX is very interested in working with partners who develop content for corporate training, distance learning, interactive kiosk, multimedia presentation and video-on-demand, applications and services.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

ALEX has a sales office in the U.S. which addresses the requirements of customers for embedded systems. In France, Alex Informatique S.A.R.L. participates in the European Economic Community's Harmony initiative which also includes CETIA, Chorus Systemes, and SGS-Thompson, as well as other European high technology companies. ALEX will continue to develop the American and European markets and has also made inroads into Southeast Asia.

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Jean Bourbonnais - VP, Research & Development
Iain Drummond - VP, Sales & Business Development
Pierre Cadieux - VP, Technology
Pierre Rinfret- VP Marketing
Alain Cléroux - VP, Finance

NATURE OF BUSINESS:

Alis Technologies Inc. creates advanced computer hardware and software for customers who use languages other than English and work in multi-user environments. Alis' technology enables existing or new software applications to be used in any language or in multiple languages simultaneously with minimal changes to the computer, the operating system or the software itself.

COMPANY PROFILE:

Year Established: 1981
Private Company
Number of Employees: 60

Offices: The company has offices in Montreal, Vienna (Austria), Cairo (Egypt) and Dubai (United Arab Emirates).

Key Customers:

- AT&T GIS
- Digital Equipment Corporation
- IBM
- ICL

COMPANY BACKGROUND AND HISTORY:

Incorporated in 1981 in Montreal, Alis is a recognized leader in adapting computer technology to respond to world language needs. Alis Technologies' computer products are designed for customers who use languages other than English and who work in multi-user computer environments. Having achieved a dominant market position with an initial focus on the complex languages of the Middle East, Alis has recently extended its

support to all European languages and is expanding to address Asia Pacific languages as well.

BUSINESS AND PRODUCT DESCRIPTION:

WorldNet Products:

The Alis Multilingual Browser for the World Wide Web allows users all over the world to access the Internet in their own language. Its features include:

- Bilingual Interface - users can select between English or French, and the menus and messages will appear in that language. With the click of a button, they can also switch between interfaces.
- Language Hierarchy - users provide the Browser with a ranked list of the languages they prefer to use. The data available in the preferred language is displayed first, followed by the information available in the second and third languages.
- Multiple Language Display - the Browser can display many different languages, including French, Greek, Russian and Czech. The necessary fonts are included with the software.
- Multiple Versions of Files - the Browser allows site administrators to keep more than one version of a document in the same directory. All versions are accessible through the same address, and all hyperlinks stay the same. When a request arrives, the server knows which version the user wants.

Alis has recently begun to apply its language translation technology and expertise to the problem of sending and receiving messages and attachments over heterogeneous networks in languages other than English. Alis' first messaging product, Communiqué for cc:Mail, is an add-on product for Lotus cc:Mail. Communiqué allows users to properly send and display messages and attachments in French without affecting the performance of cc:Mail. Communiqué can be installed on a server, client machines or a combination of both. Operating in custom mode, Communiqué allows the character set and coding to be specified for messages exchanged with different correspondents. In automatic mode, these functions are transparent. Profiles for correspondents can be automatically saved in address books, either public or private.
Localization Products:

Alis Technologies' Uniform software allows users to run host applications in any language, without requiring modification to uni-lingual application source code. Uniform runs on top of a terminal emulator as a user interface to a host application. With its unique recognition technology, Uniform permits localizers to translate the screens, menus and messages of host applications at the user interface level, thus eliminating the need to modify the basic host application from within. Uniform intercepts host application messages before they appear and replaces them with previously defined localized versions. Uniform consists of:

- Inform - an editor that enables the screens and menus from the host to be captured, translated into any language and saved as a database. Inform is used when the application is first localized, and subsequently only when individual screens are later added or modified.
- Reform - a screen converter. Whenever the application is run after the screens have been translated, the screens are localized in real-time by the memory-resident program Reform. Reform recognizes the screens and messages sent from the host and replaces them before they appear on the screen with those from the database of localized screens held in cache memory.

Uniform supports the localization of applications into any language including Middle Eastern, Asian, Cyrillic and European languages.

Peripheral Products:

Alis' range of peripheral products includes bilingual terminal emulators for Windows and DOS environments,

as well as video terminals, and line, character and laser printers. These products allow users to work with bilingual text on any uni-lingual application.

INFORMATION HIGHWAY

Alis Technologies Inc. creates advanced computer hardware and software for customers who use languages other than English and work in multi-user environments. Alis' technology enables existing or new software applications to be used in any language or in multiple languages simultaneously with minimal changes to the computer, the operating system or the software itself.

WorldNet

Alis Technologies has begun work on a project called WorldNet. The WorldNet project has two phases, the first being Internet en français while the second is referred to as WorldWeb.

During the first phase, Alis has created Communiqué for cc:Mail, an add-on product for Lotus cc:Mail. Communiqué for cc:Mail allows users to send and receive messages and attachments in French over heterogeneous networks, while maintaining the integrity of the French language character set. Communiqué is the first of what will be a series of products, designed to overcome problems with language handling, that will form Alis' WorldMail line.

The goal for Alis' WorldWeb project is to make one of the principal components of the Internet - the World Wide Web - usable with all of the major languages, scripts and coding standards used in the international community today.

DEVELOPMENT ACTIVITIES:

The WorldWeb project focuses on developing full support for multi-byte characters (e.g. Asian languages) as well as bi-directional display (e.g. Middle-Eastern languages) for three categories of products, including:

- Browsers - making browsers capable of:
  - displaying and printing multi-lingual HTML documents.
  - selecting documents according to the language in which they were created (if a document is available in more than one language).
  - letting the user specify a preferred-language hierarchy (e.g. retrieve documents in German if available, otherwise in French or English).
- Editors - to create and maintain HTML documents.
- Mail Agents - to exchange messages on the Internet.

STRATEGIC RELATIONSHIPS:

- CANARIE Inc. - TD2 project sponsor.
- Centre de recherche informatique de Montréal (CRIM) - development partner for WorldWeb. CRIM is a non-profit organization involved in research and development relating to advanced computer technology.

- Hewlett Packard - development partner for printer products
- Lotus Development Corporation - development partner for messaging products

- Persoft - development partner for terminal emulation products
- Spyglass - development partner for Web products.

INTERNATIONAL PARTNERING INTERESTS:

Alis Technologies currently has strong relationships with a number of the leading computer manufacturers. For its WorldWeb and WorldMail initiatives, Alis is interested in locating international partners including:

- electronic mail software vendors
- Web browser developers
- HTML authoring product developers

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Alis' products are now being used in over 40 countries around the world. Alis provides customer support from its corporate head office in Montreal and from branch offices in Europe and the Middle East. Sales are made using a network of resellers, distributors, OEM's and system integrators.

Alis is particularly interested in expanding its activities and marketing partnerships in Canada, and in Western and Eastern Europe.

APPLIED SILICON INC. CANADA

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E-mail: efathi@appsil.com

KEY PERSONNEL:

Eli Fathi - President
Peter Okulich - Director of Manufacturing
Menno Stoffels - Chief of Engineering
Daveena Jones - Director of Finance
Mark Lindsay - Director of Marketing, Technical Services
Crawford Barkhouse - Sales Manager, OEM Products

NATURE OF BUSINESS:

Applied Silicon Inc. Canada develops and sells sophisticated electronic products, primarily for the law enforcement, security and public safety markets. Applied Silicon has recently introduced its own family of advanced audio, video, image processing and multimedia products for surveillance and remote site monitoring applications.

COMPANY PROFILE:

Year Established: 1986
Private Company (partly owned by Comverse Technology Inc. , US)
Number of Employees: 66
Annual Revenues: $ 5.6 million (1994)

Offices: The company's offices are located in Ottawa, Ontario. The Government of Canada has approved site security clearance for these premises.

KEY CUSTOMERS:

- City of London, Ontario
- City of Winnipeg, Manitoba
- Dy-4 Systems Ltd.
- Government of Canada:
  - Communications Research Centre
  - Department of National Defense
  - Foreign Affairs and International Trade
  - Solicitor General
- Lockheed Martin Canada

- Newbridge Networks
- Xi Tech, Inc.

COMPANY BACKGROUND AND HISTORY:

Founded in 1986, Applied Silicon first focused on providing consulting engineering services to government and industrial clients seeking system solutions involving the real-time applications of microprocessor technology. The company expanded its activities adding low volume manufacturing, sales and servicing in Canada of third-party equipment and systems for law enforcement and security agencies, and development of a line of high speed digital signal processing (DSP) video and imaging boards and sub-systems designed for a variety of applications.

In 1992, Applied Silicon entered into an equity-based strategic alliance with Comverse Technology Inc. , a New York-based company involved in the design and manufacture of integrated voice, fax and data systems for security, intelligence, law enforcement and public safety agencies.

BUSINESS AND PRODUCT DESCRIPTION:

Applied Silicon is currently comprised of three inter-related business units consisting of:

- Technology Services -provides scientific and engineering services to industrial and public sector organizations. With expertise in DSP, high speed real-time processing, microcontroller, fibre optic LANs; RF (radio frequency) and antenna array technologies, as well as with the design of custom and semi-custom integrated circuits, Technology Services offers services in support of applied research and new product development projects.

- OEM Products - provides a wide range of solutions to law enforcement, security and public safety organizations for information acquisition and processing, particularly relating to audio and video types of information. These solutions include both products licensed for manufacture by Applied Silicon and products handled as a representative.

- Video, Imaging and Multimedia Products - includes all of the products manufactured or licensed by Applied Silicon. Products currently consist of a number of sophisticated video, imaging and multimedia board and sub-system products for low volume niche market applications.

Using the expertise gained from developing and selling its video products and from the activities of the Technology Services unit, Applied Silicon has begun to develop a number of new products which are expected to generate much of the company's growth for the next several years. Grouped under the name VIDEOVISE, these products include:

- Video Termination Unit (VTU) - a remote station capable of acquiring video signals from video cameras (and related audio and alarm devices), converting these analog signals to digital and compressing the digital video to permit transmission over standard telecommunications lines to a VMS system. Applied Silicon's VTU solution uses commercially available chipsets for encoding and decoding with "MPEG-like" results at a dramatically lower cost than competitive systems which use expensive encoding devices. Applied Silicon's products eliminate the problem of "motion artifacts", i.e. jitter with vertical and horizontal motion caused by vibration or camera movement.
- Video Management System (VMS) - the companion to VTU, VMS is designed to continuously control the various parameters associated with an end-to- end video system including the ability (on some versions) to log video data from a remote camera source. The end-to-end video system is designed to accept multiple camera inputs (at the VTU end) each individually compressed prior to transmission

(or multiplexed in a group of four). The VMS unit offers many advantages over VCR tape systems. The logging VMS system is a PC-based system which controls and routes the video data at the receive end. The VMS unit can be equipped with video editing software and is capable of providing onward transmission of selected video data. The unit contains one or more digital video storage units, initially large capacity hard disk drives or disk arrays, which provide near instant access to video data for viewing, for editing or for onward transmission. Archiving of video data may also include the use of optical disks.

INFORMATION HIGHWAY:

Applied Silicon Inc. Canada develops sophisticated electronic products primarily for the law enforcement, security and public safety markets. Drawing on its experience in selling and designing systems for other vendors, Applied Silicon has developed a number of its own products designed for video-based remote site monitoring and surveillance. Grouped under the name VIDEOVISE, these products include:

- Video Termination Unit (VTU) - a remote station capable of acquiring video signals from video cameras (and related audio and alarm devices), converting these analog signals to digital and compressing the digital video to permit transmission over standard telecommunications lines to a Video Management System (VMS). Applied Silicon's VTU solution uses commercially available chipsets for encoding and decoding with "MPEG-like" results at a dramatically lower cost than competitive systems which use expensive encoding devices. Applied Silicon's products eliminate the problem of "motion artifacts", i.e. jitter with vertical and horizontal motion caused by vibration or camera movement. Both point-to-point and network versions of this unit are available.
- Video Management System (VMS) - the companion to VTU, VMS is designed to continuously control the various parameters associated with an end-to- end video system including the ability (on some versions) to log video data from a remote camera source. The end-to-end video system is designed to accept multiple camera inputs (at the VTU end) each individually compressed prior to transmission (or multiplexed in a group of four). The VMS unit offers many advantages over VCR tape systems. The logging VMS system is a PC-based system which controls and routes the video data at the receive end. The VMS unit can be equipped with video editing software and is also capable of providing onward transmission of selected video data. The unit contains one or more digital video storage units, initially large capacity hard disk drives or disk arrays, which provide near instant access to video data for viewing, for editing or for onward transmission. Archiving of video data may also include the use of optical disks.

DEVELOPMENT ACTIVITIES:

While retaining the basic design of the VTU and VMS units, the VIDEOVISE product family will be expanded to include various product offerings to be integrated into systems customized to suit different customer requirements. Enhancements to provide improved functionality are being added as well as additional interfaces that allow for VTU/VMS connectivity via ISDN, modem, higher speed networks, RF (spread spectrum, cellular), satellite and T1 speed networks.

STRATEGIC RELATIONSHIPS:

- Comverse Government Systems (US) - represents and has an OEM agreement with this subsidiary of Comverse Technology Inc. (US)

- Efrat Future Technology Ltd. (Israel) - voice mail and audio/fax logging and processing systems.
- Micro Vitec plc (UK) - represents Applied Silicon's image compression products, in Britain.
- Newbridge Networks - communications multiplexing and transmission equipment.

- Xi Tech Inc. (US) - OEM supplier of image processing systems to this manufacturer of medical x-ray equipment.

INTERNATIONAL PARTNERING INTERESTS:

Applied Silicon is interested in finding international partners to distribute, integrate and support its VIDEOVISE products. Partners with a customer base in the security, law enforcement or public safety markets as well as experience with remote video systems are preferred. Applied Silicon is interested in locating:

- distributors who would stock, demonstrate and provide some level of system integration and customization;
- value-added resellers and systems integrators; and
- representatives who would distribute product and system information and generate leads to be followed up by Applied Silicon directly.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Applied Silicon currently sells most of its products and services within the North American market. Sales are made on a direct basis and via distributors and representatives. The company is interested in expanding the marketing of its VIDEOVISE product family and seeks marketing partners for:

- European Economic Community
- Latin America
- South America
- South-East Asia
- United States

The VIDEOVISE products are initially aimed at the security, law enforcement and public safety markets. Hence marketing partners with a customer base in these fields as well as experience with remote video systems would be preferred. Of interest are:

- distributors who would stock, demonstrate and provide some level of system integration and customization
- value-added resellers and systems integrators
- representatives who would distribute product and system information and generate leads to be followed up by Applied Silicon directly.

ASEC SYSTEMS INC.

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E-mail: ssalkeld@idirect.com
WWW: http://asec.com

KEY PERSONNEL:

Gary Stroud - CEO
Steve Salkeld - President
Rick Kazi - Sales

NATURE OF BUSINESS:

ASEC Systems is a developer of low-cost Electronic Commerce solutions employing standards-based messaging technologies, e.g. EDI, EFT. These solutions bundle easy-to-use Windows-based forms, Electronic Data Interchange (EDI) translator, communications engine and Value Added Network (VAN) sign-on. ASEC Systems has expertise in the technologies of EDI, Public Key Security and Data Communications.

COMPANY PROFILE:

Year Established: 1993
Private Company
Number of Employees: 14
Annual Sales $ <2 million (1995)

Offices: ASEC is based in Toronto, Ontario. Additional offices are located in Montreal and Atlanta.

Key Customers:

- 1st Report
- Carson Customs Brokers
- Health Care Consultants
- Metro Richelieu
- Systemhouse
- Provigo
- The Port of Baltimore
- The Port of Portland

COMPANY BACKGROUND AND HISTORY:

ASEC Systems was founded in 1993 to meet the needs of the small to medium-sized business that has been held back from enjoying the benefits of Electronic Commerce because of the prohibitive costs involved. ASEC Systems' service offering allows a company to become EDI-capable in a matter of hours at a fraction of the

costs of other solutions, including a Value Added Network connection. ASEC solutions have met with success in several markets including: tax payment, transportation, retail, food, financial, insurance and health care.

BUSINESS AND PRODUCT DESCRIPTION:

ASEC's suite of Electronic Commerce products, which include: BUSINESS PARTNERPAC™, TAXPAC™, CUSTOMSPAC™ and HEALTHPAC™ enable business documents to be exchanged using a low-cost, easy-to-use, Windows-based program. Complex activities such as mapping, translation, encryption and network communications are hidden from the user. The user of the software first completes an on-screen form that mimics current paper documents and then presses the SEND icon. Unattended sending and receiving of transactions are handled by the scheduler. All data, both inbound and outbound, resides in a standard Microsoft ACCESS™ database, which facilitates data import and export, as well as custom reports.

The powerful EDI engine conforms to ASC X.12 and EDIFACT standards. ASEC can meet complex EDI requirements, including ASC X.12, UCS or UN/EDIFACT standards. Trading Partner profiles are pre-loaded, the registration process is automated and simplified, and VAN (Value-Added Network) Sign-on ID is provided. A Tutorial and On-line Help System are available on demand. A sophisticated EDI/EFT engine works quickly and transparently.

The ASEC Electronic Commerce System consists of four major components:

- The Document Navigator - provides a user friendly front end for document management. It allows a user to view a summary list of both inbound and outbound documents as well as their current status. It is also used for creating new documents or updating those already in progress.
- Queue Application - the component responsible for managing the EDI translation and the transfer of documents to or from the EDI data network. It can operate either on user demand or run in the background, polling for work. In the latter case, scheduling can be periodic (i.e. every 15 minutes) or at a specific time of day. A status window is provided to indicate the current Queue operation and is updated as documents are translated, bundled and sent to the network. The communications engine can support a variety of modem devices and communication scripts for connecting to different EDI networks. Simple dialogs are available for the user to configure the various options.

  Additionally, there is an interface that allows the Queue to connect to an existing corporate e-mail system. A central document database includes the current status of each document. When an acknowledgement is received (997, 999 824, etc.), the document is updated to reflect the appropriate status. This document database is visible through the right hand window in the Document Navigator.

- Translator - the heart of the ASEC EDI product. It is very flexible and supports multiple documents, based on potentially different EDI standards (ANSI X.12, EDIFACT, UCS, etc.) at different version levels. Unlike similar products, the translation process is fully database driven. No overlays or additional code modules are required to support the various features. This database approach allows ASEC to quickly develop and deploy new document maps. The Translator operates in the background with no direct user interface. The Queue application is responsible for Translator scheduling and directs its operation.

- Control Center - a general configuration utility that allows the user to set up the operational parameters of the ASEC Electronic Commerce System. It allows the user to configure billing and forms usage information that will be used to generate a trading partner profile (838) registration message. It also allows the manipulation of both User and Trading Partner EDI details. Although much of the Trading Partner information has been pre-configured by ASEC, advanced details such as interchange ID's and qualifiers as well as document and map assignments can be updated.

INFORMATION HIGHWAY:

The objective of the ASEC Electronic Commerce System is to provide "off-the-shelf" Electronic Data Interchange (EDI) compliant solutions without the implementation difficulties (both in terms of cost and required technical expertise) typically associated with EDI technology. The user is delivered a system that includes many of the required Trading Partner details including implementation guides, document map definitions and communications facilities. An intuitive front-end removes most of the EDI visibility and allows the user to concentrate on the business application.

The product operates in Microsoft Windows 3.1/3.11 and follows accepted Windows development and operational guidelines. Most of the product's components use a common underlying database architecture based on Microsoft Access™ and ODBC (SQL). This

database is used for data entry validation, document storage and configuration/control tables.

Whenever possible, ASEC uses technology to deliver customer support, billing and product updates. For example, a Trading Partner Profile document (838) is generated and transmitted to ASEC as one of the first steps when the software is installed. It is used for customer registration and indicates the software version, serial number, package details as well as billing information.

The ASEC Electronic Commerce System consists of four major components: Document Navigator, Queue Application, Translator and Control Center. Each application is individually launched as a Windows Program Manager icon. The product is also delivered with application-specific help files. These help files are co-developed with major trading partners and reflect various application-specific details. In fact, where government specific documents are concerned, the exact text from the printed document is used.

Products:

- TAXPAC™ allows a business to file and pay their taxes using EDI. The technical aspects of EDI and the network connections are hidden from the user. The Tax authorities receive an electronic tax return (813) and the Bank receives an electronic payment transaction (820). All parties receive the appropriate acknowledgements.
- BUSINESS PARTNERPAC™ enables businesses to receive and send Purchase Orders (PO), Advance Ship Notices, Invoices and Payments.
- CUSTOMSPAC™ enables customs brokers to process a Certificate of Origin, Bill of Lading, PO and Commercial Invoice.
- HEALTHPAC™ provides Health Care organizations with a complete electronic commerce solution to perform enrolment, eligibility, roster maintenance and claim submissions.

DEVELOPMENT ACTIVITIES:

ASEC will soon be adding an Internet connection to enable companies to exchange encrypted and digitally- signed EDI messages. The RSA-based security will enable users of the ASEC product to exchange business documents securely over the Internet, confident that the document cannot be read or modified.

STRATEGIC RELATIONSHIPS:

ASEC Systems has partnered with AT&T, BELL/Worldlinx, IBM, National Bank and UNITEL to provide Value Added Network services to Canadian business.

Other key relationships include:

- CANARIE Inc. - TD2 project sponsor.
- Fischer International - this highly respected software organization, with products such as Mainframe E-Mail (EMC2/TAO) and WatchDog for PC/LAN security, is an investor in ASEC.
- Revenue Canada - ASEC Systems has worked closely with Revenue Canada to enable Canadian businesses to file taxes electronically. Based on the experience of this pilot, ASEC Systems and Fisher International proposed changes to the X12.58 Security Structures Standard (Version 2.0) to enhance support of encryption, authentication and digital signatures.
- The National Bank of Canada - partnered with ASEC Systems to provide Windows PC users with a low-cost, secure method for making payments.

INTERNATIONAL PARTNERING INTERESTS:

ASEC Systems currently sells primarily on a direct basis to key accounts in Canada and the US. The company is interested in locating partners internationally which might serve as resellers and OEM's for its electronic commerce products.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

ASEC Systems currently sells primarily on a direct basis to key accounts in Canada and the US. The company is interested in locating partners internationally which might serve as resellers and OEM's for the Company's Electronic Commerce System products.

BROADBAND NETWORKS INC.

37 Stevenson Road
Winnipeg, Manitoba
Canada
R2R 0P2

KEY PERSONNEL:

Dr. James Schellenberg
Program Manager
Telephone: (204) 982-8480
Fax: (204) 982-8487
E-mai: ISJSchellenberg@bni.ca

NATURE OF BUSINESS:

Broadband Networks Inc. (BNI) provides integrated digital wireless networks for the provision of video, voice and data services. BNI designs, manufactures and markets MPEG compression systems and microwave transmission equipment for these integrated networks.

COMPANY PROFILE:

Private
Year Established: 1994
Number of Employees: 50

COMPANY HISTORY:

BNI was founded by executives from the Hughes Aircraft Company in March 1994. Since then the company has delivered MPEG compression systems and microwave transmission networks to customers in Korea, Japan, Canada and the USA.

INFORMATION HIGHWAY

ProductText~BNI's digital wireless networks allow for the high speed two-way transmission of multimedia services. Digital television, high speed Internet, and distance teleconferencing can all be provided over a BNI digital wireless network.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Mexico, South America, Japan, Southeast Asia and Europe
Potential Partners: software and telephone companies
Type of Alliance Sought: joint marketing/sales alliance in a targeted geographic area.

BUNYIP INFORMATION SYSTEMS INC.

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H2X 2A1

KEY PERSONNEL:

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L. Daigle V.P. Research
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E-mail: peterd @bunyip.com/ diane@bunyip.com/ leslie@bunyip.com~

NATURE OF BUSINESS:

Provider of Internet expertise, including development, systems integration, funded research, consulting, training and operations support. Some Internet products e.g. "Archie".

COMPANY PROFILE:

Private
Year Established: 1992
Number of Employees: 31
Annual Revenues: private
Strategic Alliances: International Thomson Publishing
Key Customers: International Thomson Publishing, National Science Foundation, AT&T, America Online, various Internet Service Providers

COMPANY HISTORY:

Founded in 1992 to service growing need for Internet development expertise. The company's first product was a commercially supported version of "Archie", first Internet resource location service. Active in the research community and standards setting for the Internet, the company staff travels widely to teach and consult on Internet issues. It is believed to be the largest Internet specific firm of its kind in Canada.

INFORMATION HIGHWAY

"Archie" is a resource discovery service, licensed by 60 operators worldwide. "Digger" is an Internet-based distributed information service for white pages and yellow pages etc. The company also provides: custom development and research groups, operational services for Internet services; and consulting, tutorial and training services.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Mexico, South America, Japan, Southeast Asia, Europe and Australia. The company currently has active customer accounts in all regions. 95% of the company's revenue is from outside Canada. Their largest markets are the United States and Europe.
Potential Partners: content developers; network products and services; software; distributors
Types of Alliance Sought: Co-development of product or technology: Bunyip brings a large body of development expertise and is seeking content and distribution. They are also seeking a distributor to work with to help track technology changes.

CALLISTO MEDIA SYSTEMS

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NATURE OF BUSINESS:

Callisto Media Systems was founded to develop innovative, practical, cost-effective solutions for storing and delivering digital video information to applications using scaleable server technology. In the future, telcos and cable TV operators will provide interactive entertainment, Video on Demand (VoD) and related services to consumers. Presently, corporate, institutions, education and other users are demanding access to digital video over LANs and WANs. Callisto is providing these solutions. Callisto's core competencies are the design and development of high bandwidth networks and integration of media server solutions for any application.

COMPANY PROFILE:

Private
Established: 1995
Number of employees: 5
Annual Revenues: private
Strategic Alliances: Joint development projects with Cableshare, CAE, Newbridge Networks, Televitesse, Miranda Research and Proxima Systems.
Key Customers: Government, corporate and educational institutions

COMPANY HISTORY:

Callisto was formed by a group that developed a high-end media server in an aerospace company. With the technology and know-how they founded Callisto to develop and leverage this unique architecture for the media server market and develop an integration and application development consulting business.

INFORMATION HIGHWAY PRODUCTS:
Callisto is developing a flexible, scaleable and modular media server that can address the needs of campus, corporate and education markets requiring less than 250 streams for internal and/or external access. The architecture can be scaled up to service the telcos and cable Video on Demand (VoD) and Interactive TV (ITV) markets requiring large content libraries to serve thousands of customers. The server is based on a unique architecture using commercial off-the- shelf hardware components and is platform, storage device, network and compression technology independent.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Europe
Potential Partners: Network products/services; computer/hardware; cable companies; telephone companies
Type of Alliance Sought: co-development of product or technology; joint marketing/sales alliance; and/or venture capital and investments.

Callisto is specifically looking for market and system integrator partners who are looking to provide complete network solutions to the target markets, where the media server is a key component. With Callisto's scaleable media server, the system integrator can provide a cornplete solution with the scaleability required to meet future growth requirements.

CEL CORPORATION

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KEY PERSONNEL:

Evan Chrapko - President and CFO
Russel Matichuk - VP of Operations
Bruce Matichuk - VP of Research and Development
Glen Sabatier - Project Management
Myles Currie - General Management (Intl. HQ)
Geoff Falconar - Marketing Manager
Chris Matichuk - Sr. Programmer
Darren Buma - Controller

NATURE OF BUSINESS:

CEL Corporation (CEL) designs and sells software that facilitates connectivity to mainframe or 'legacy' computer systems. Products include: *BLACKSMITH*™ for connecting desktop computers to mainframes via a user-friendly graphical interface; *LegacyLink*™ which allows for connectivity via the Internet; and *Pocket Mainframe*™, a connectivity solution for hand-held, wireless personal digital assistants.

COMPANY PROFILE:

*Year Established*1990
Private Company
Number Of Employees: 19
Annual Revenues: $ 1.2 Million (proj. 1995)

Offices: CEL's headquarters are located in Edmonton, Alberta, Canada. The U.S. Sales & Training office is in San Jose, California while additional sales offices are situated in Boston, New York, and San Francisco.

Key Customers:
- Air Touch Cellular
- Apple Computer, Inc.
- Chevron
- Gannett
- Hallmark Cards
- International Business Machines (IBM)
- Liberty Mutual Insurance Group

- Macy's
- NASA (Recom Technologies, Inc.)
- SaskTel
- United Airlines
- University of Kansas
- University of California, San Diego
- University of Michigan

COMPANY BACKGROUND AND HISTORY:

CEL's flagship product, *BLACKSMITH*™, was developed in 1990. Finding success in solving a particular problem for large corporations and unmatched by other available products, CEL decided to further develop and market the product. Over the years as CEL provided *BLACKSMITH*™- based solutions to many large companies, the company became known as the 'connectivity experts to legacy', referring to CEL's ability to provide solutions for dealing with well established 'legacy' mainframe software systems.

More recently, CEL tapped its expertise in Internet communications to develop *LegacyLink*, a software product designed to facilitate access to legacy systems through the World Wide Web.

BUSINESS AND PRODUCT DESCRIPTION:

The technical base of CEL is its "connectivity" expertise. The company's *BLACKSMITH* software consists mainly of complex software commands that 'speak' the common connection languages of mainframes by translating the information to be utilized for the graphical interfaces of desktop computers. *BLACKSMITH* also provides functionality for navigating through the complex procedures required to operate mainframe computer applications.

Beyond simple terminal emulation software, *BLACKSMITH* solves the problem of connecting the graphical interface of the PC world to the complex text-based applications still residing on mainframe and mini computers. *BLACKSMITH* navigates through the non user-friendly screens from the mainframe application before the user sees them, recognizes them with its pattern and timing recognition algorithms, and then replaces them with an appropriate user interface screen that displays the data in a graphical (GUI) manner. The user interface - PC software - is created in advance by a developer and is more easily written and maintained than mainframe software.

Using *BLACKSMITH* to replace the terminal screens greatly automates the interaction with mainframe software. Repetitive and tedious data entry and data retrieval tasks can be reduced to a button click. This greatly reduces human errors and creates a reliability factor that can be worth millions to a corporation.

BLACKSMITH supports most of the popular mainframe communications methods and graphical interface building tools (i.e. 4th Dimension, Omnis 7, HyperCard, C, and C++). A version of *BLACKSMITH* has also been developed which is an OLE (Object Linking & Embedding) enabling application, thereby making *BLACKSMITH* compatible with many additional applications which support OLE, including PowerBuilder, Visual Basic, and Excel.

CEL's product has distinct quality advantages over its direct competitors. *BLACKSMITH* runs faster, uses less memory, is swiftly upgraded to support a variety of connection methods, operating systems and desktop software packages, and provides a solution that better suits changes in the IS department's needs. *BLACKSMITH* also resides entirely on the desktop computer requiring no changes to the host. *BLACKSMITH* can access many host applications from several host computers simultaneously and can integrate the data into one simple graphical window. *BLACKSMITH* is also significantly less expensive than the more complex

alternatives of competitors.

Using the technology and expertise with connectivity solutions they have developed over the past several years, CEL has quickly progressed into new areas of connectivity technology. *LegacyLink* and *Pocket Mainframe* are two CEL products which demonstrate the company's ability to apply their experience to new areas. These products take the foundation of *BLACKSMITH* technology and build solutions for mainframe access via the Internet and from wireless hand-held devices.

LegacyLink is proving to be a huge success for CEL as corporations are now discovering the need for remote access to their legacy systems. Field sales reps, service technicians, off site engineers and many other professionals are finding increasing need to access corporate database and other applications from remote sites, even from laptops via wireless modems.

INFORMATION HIGHWAY:

CEL Corporation (CEL) designs and sells software that facilitates connectivity to mainframe or 'legacy' computer systems. CEL's *BLACKSMITH*™ software is designed to eliminate the complexities of connecting graphical microcomputer applications to text-oriented multiple host systems. With *BLACKSMITH*, developers need not understand low-level communications issues and can choose from a wide selection of third and fourth generation development tools to build advanced client/server applications.

CEL has added to the *BLACKSMITH* family by developing software that delivers Newton and World Wide Web access to mainframe and minicomputers. Using graphical Macintosh, Windows, Newton or Web applications, with no modification to mainframe or minicomputer host applications, organizations can have staff interact with their host systems .

Using NewtonScript or writing in HTML, *BLACKSMITH* developers simply build functions that send a Remote Procedure Call (RPC) to a waiting *BLACKSMITH* server. The RPC is written using one of the Macintosh or Windows 4GLs or 3GLs that *BLACKSMITH* supports: PowerBuilder™ , Visual Basic™, Omnis 7, 4th Dimension, HyperCard™, SuperCard™, C and C++ (plus others to be announced in 1995). Existing user interfaces previously developed in one of these languages, or newly developed user interfaces designed with the use of *BLACKSMITH* in mind, can be used to execute the RPCs.
LegacyLink™

LegacyLink simplifies remote access to existing corporate mainframe or minicomputer on-line applications. *LegacyLink* provides an interface between Web browsers, servers, and legacy on-line applications running on mainframes or minicomputers. With *LegacyLink*, the user of a Web browser appears to be communicating directly with the legacy on-line application.

DEVELOPMENT ACTIVITIES:

CEL is constantly adding to *BLACKSMITH*'s functionality. Currently under development are:

- LU 6.2 support for Macintosh and Windows clients
- Power Objects support
- VT100 support in Windows
- a driver level terminal emulator that can be activated and used in any of the windowing environments that CEL's products are supporting
- 6530 data stream support
- VT430 + support on Macintosh and Windows
- support for other connection methods

- OpenDoc support

STRATEGIC RELATIONSHIPS:

CEL maintains strategic alliances with many prominent software and hardware vendors and is a recognized business partner with ACI US, Andrew Corp., Apple Computer, Attachmate, Blyth Software, DEC, IBM, Information Builders, Microsoft, Novell and Wall Data. Several Apple departments support and promote *BLACKSMITH*™ as a means to increase sales of Apple computers in corporate mainframe environments. CEL is also a key developer partner for Apple Computer's Newton platform.

INTERNATIONAL PARTNERING INTERESTS:

CEL is interested in identifying additional marketing partners on an international basis, especially in Europe and China. Of particular interest are organizations that are offering consulting services for or are reselling:

- *Applescript-enabled solutions*
- *client/server tools* - PowerBuilder, Omnis 7, 4th Dimension
- *connectivity products* - Rumba (Wall Data), Extra (Attachmate), IRMA (DCA/Attachmate), TCP/IP connectivity to mainframes
- *HLLAPI-based solutions*
- *programming tools* - Visual Basic, C ,C++, Pascal, HyperCard or SuperCard

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

CEL Corporation sells its products on a direct basis and via resellers, value-added consultants, systems integrators and OEM partners. Some of these partners include ACI Inc., Bear River, Blyth Software, CDS Technologies, Ian Richards, Information Management Inc., and Relevant Technology. CEL is aggressively expanding these relationships and is interested in identifying additional partners on an international basis, especially in Europe and China. Of particular interest are organizations that currently offer consulting services for, or are reselling one or more of, the following products:

- *Applescript-enabled solutions*
- *client/server tools* - PowerBuilder, Omnis 7, 4th Dimension
- *connectivity products* - Rumba (Wall Data), Extra (Attachmate), IRMA (DCA/Attachmate), TCP/IP connectivity to mainframes
- *HLLAPI-based solutions*
- *programming tools* - Visual Basic, C ,C++, Pascal, HyperCard or SuperCard

CEM SPECIALTIES INC.

22423 Jefferies Road
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Canada
N0L 1R0

KEY PERSONNEL:

Henry Vergeer - Director, Operations
LocPhone(519) 641-6431
LocFax(519) 641-6536
E-mail: vergeer@cemsi.on.ca

NATURE OF BUSINESS:

Design, manufacture and support of systems for continuous emission monitoring of air pollution sources.

COMPANY PROFILE:

Private
Year Established: 1992
Number of Employees: 4
Annual Revenues: $1 million (Cdn)
Strategic Alliances: Riisearch Environmental, CANARIE Inc.
Key Customers: industry - air pollution sources

COMPANY HISTORY:

CEM Specialties Inc. specializes in technology for monitoring air pollution emissions. Co-developed software for data acquisition systems for monitoring systems. Successfully certified monitoring systems to meet stringent regulatory requirements.

INFORMATION HIGHWAY:

Currently developing, with Riisearch Environmental of Hamilton, Ontario, an innovative, nationwide data handling system using state-of-the-art technology to ensure timely and uniform air pollution monitoring.

INTERNATIONAL PARTNERING INTERESTS:

Geographic markets: Canada, United States, Mexico
Potential partners: software
Type of Alliance Sought: Co-development of product or technology; venture capital or investment; a permanent alliance arrangement with minority or majority change in ownership (joint venture/partner/merger).

Specifically, CEM Specialties Inc. is seeking to support or expand the commercialization of the product under development. The initial commercialization plan targets the North American market but the company expects that other markets will follow.

CIFRA MEDICAL INC.

350 Franquet, suite 50
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Canada
G1P 4P3

KEY PERSONNEL:

Jean-François Meunier, President
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Fax: (418) 657-3805
E-mail cifra@riq.qc.ca

NATURE OF BUSINESS:

Cifra Médical Inc. specializes in imaging technologies to remote medical support.

COMPANY PROFILE:

Private
Year Established: 1995
Number of Employees: 15
Annual Revenues: private
Strategic Alliances: Bell Canada, Québec Téléphone, Ministère de la Santé du Québec, Ministère de l'Industrie du Commerce, de la Science et de la Technologie du Québec, Régie régionale de la santé et des services sociaux du Québec, CANARIE Inc., 15 hospitals~
CompOverviewText~Key Customers: hospitals

COMPANY HISTORY:

Cifra Médical Inc. was founded in 1995 and is located in Ste-Foy, Québec. It specializes in imaging technologies related to remote medical support and is a spin-off company of Gecko Electronique.

INFORMATION HIGHWAY:

Cifra Médical Inc. has further developed two prototypes of a system, developed by Gecko Electronique, which provided real-time ultrasound image transmission as well as video conferencing facilities over an ISDN-PRI link (1.544 Mbps). Cifra Médical is connecting the system to 15 hospitals and is developing the required hardware and software components. Research is also being conducted to demonstrate the financial benefits of telemedicine and its potential to work within the clinical process.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Europe and South America
Potential Partners: computer and hardware; cable companies; telephone companies; distributors.
Type of Alliance Sought: Technology transfer; co-development of products or technologies; joint sales/marketing alliance; distribution; licensing agreement.

The company is interested in forming alliances with companies developing complementary technologies in telemedicine, specifically in tele-radiology and tele-cardiology.

CONSORTIUM UBI

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Fax: 514-878-1551

KEY PERSONNEL:

Sylvie Lalande - President & CEO
Robert Thivierge - Executive Director
José Joyal - VP Technology
Jacques Larose - VP Marketing
Yves Bourque - Director of Finance & Administration
Jean-Jacques Goulet - Legal Counsel

NATURE OF BUSINESS:

The mission of Consortium UBI is to provide a wide range of multimedia and transactional services to 80 per cent of cable TV-ready homes in Quebec. UBI will finance the home equipment and transactional server and carry out those intermediary functions necessary to allow service providers to communicate with consumers. UBI is also responsible for all marketing activities aimed at consumers.

COMPANY PROFILE:

Year Established: 1994
Private Company
Number of Employees: 10 permanent and 10 contract employees

Offices: Consortium UBI maintains its head office in Montreal, Quebec.

Key Customers:
Federal and provincial government agencies as well as over 170 small, medium and large commercial enterprises and financial organizations such as:

- Allstate
- Avon
- Chrysler
- Coca-Cola
- First Brands
- Ford
- General Mills
- Goodyear
- Mazda
- Pizza Hut

COMPANY BACKGROUND AND HISTORY:

Consortium UBI was created in January 1994 by seven major companies who had a common interest in establishing an electronic highway to directly reach their clients at home. Equity of the Consortium is shared among the seven founding partners as follows:

- Canada Post Corporation - 19%
- Hydro-Québec - 20%
- Le Groupe Vidéotron Ltée. - 20%
- Loto-Quebéc - 11%
- National Bank of Canada - 10%
- The Hearst Corporation - 10%
- Videoway Multimedia Inc. - 10%

The UBI system takes advantage of the knowledge gained from the user-friendly, Videoway multimedia system. The Videoway set-top box, already used by 325,000 subscribers in Canada and the United Kingdom, provides information and entertainment services. The UBI system adds to these services, providing transactional and home automation services using a two-way cable TV network and a new generation of Videoway terminals. Phase I of the UBI deployment will take place in 1996 and will involve 33,000 households in the Saguenay region of Québec.

BUSINESS AND PRODUCT DESCRIPTION:

The UBI system offers a wide diversity of value-added services and takes advantage of the complementarity and synergy that exists between the UBI partners, particularly the cable companies. UBI's business approach comprises universality of distribution, user-friendliness, technological innovation and the ability to evolve with changes in the capacity of the technologies used.

UBI will not keep any client files and will not bill the consumer. Service suppliers, along with cable operators, will be billed by UBI and will make up the main source of income for financing the UBI system infrastructure.

UBI services will be forwarded to homes via a two-way cable distribution network and the transactional, payment and postal infrastructures of the UBI consortium partners. The home equipment consists of a terminal, an alphanumeric remote control, a PIN (Personal Identification Number) keypad , a small printer (for printing rebate coupons, receipts, etc.) and a smart card.

Customers will have free access to the products and services of a wide variety of suppliers - the system is open to all - including those of the consortium partners. Services offered by the Consortium partners include:

- *Canada Post Corporation* - will provide a vehicle that will allow individuals to receive electronic mail, be it commercial or personal. Every household will have a "Household Mailbox" for messages such as electronic flyers. Each mail-receiving household member will have their own secure "Personal Mailbox", accessed by using and identification card and personal identification number (PIN).
- *Hearst Corporation* - will provide an electronic business directory similar to 'yellow pages' that will also include an interactive transactional component capable of completing business transactions (e.g. theatre ticket purchases, packaged goods orders).
- *Hydro Québec* - will allow its customers to monitor their accounts and energy consumption and will provide a route to home automation services.

  Le Groupe Vidéotron Ltée. - is putting in place the cable network and fibre optic links that will eventually be turned into more than 200 digital channels.
- *Loto-Québec* - will offer a variety of educational and entertaining video games and will provide access

to comprehensive lottery information.

- *National Bank of Canada* - UBI's official payment agent, National Bank will collect and administer the funds electronically exchanged via UBI using its existing infrastructure and Canada's Interac, Cannet and Banknet networks.
- *Videoway Multimedia Inc.* - is the commercial agent of the Consortium and recruits providers of services (see *Key Customers*). Videoway will also provide a classified advertisements service on the UBI system.

UBI has also been instrumental in the creation of STEFI (Société de téléformation interactive), a partnership made up of learning institutions and broadcasters which is developing and will exploit new methods of access to education along the UBI electronic highway. STEFI will provide educational content at all levels including elementary, high school, CEGEP (community college), and university levels, as well as providing professional training and literacy courses.

INFORMATION HIGHWAY

The mission of Consortium UBI is to provide a wide range of multimedia and transactional services to 80 per cent of cable TV-ready homes in Quebec. UBI will finance both the home equipment and the transactional server and carry out those intermediary functions necessary to allow service providers to communicate with consumers. These functions include: system operation, switching and handling transactions, security control, invoicing providers and data storage. UBI is also responsible for all marketing activities aimed at consumers.

UBI will use a two-way cable television network to offer information, transaction and payment services to the home. In its first phase, Consortium UBI will provide 33,000 homes in the Saguenay region with free access to the electronic highway. The UBI system will then be deployed to the greater metropolitan regions of Montreal and Quebec City and will eventually reach over 1,475,000 households, with free access.

Through their standard TV set, consumers will have access to electronic mail, long-distance training, business directories, home shopping, home banking, home automation, energy management, interactive games and a host of other services provided by various companies, institutions and government agencies (some 175 to date).

DEVELOPMENT ACTIVITIES:

Consortium UBI is faced with several technological challenges in the preparation of the UBI electronic highway. The following are among the Consortium's responsibilities:

- to implement a unique system and minimize costs in terms of technological infrastructures;
- to develop procedures for the security of information. This includes not only the technical specifications for the peripherals (i.e. the smart card, PIN keypad etc.) but also policy aspects such as the users' ethics code. The Code of Conduct was drafted by the *Centre de recherche en droit public* of the Law Faculty of Université de Montréal. The Code provides for all UBI users (partners, consumers and providers of services alike) with regards to issues such as the protection of privacy;
- to set up an open system that supports many communications protocols and multiple servers;
- to develop and integrate various technological parts, adapting existing products or developing others such as switching software in the transactional server, the home terminal, the PIN keypad and the small printer; and
- to co-ordinate the development and work being done by its partners, since products are being developed in parallel by several partners, technological providers and providers of services.

UBI is currently proposing to develop LGTA software (logiciels génériques téléchargés d'applications) in order

to facilitate the development at lower cost of many commercial and government services on UBI.~

STRATEGIC RELATIONSHIPS:

- *AXIOHM SA* (France) - manufacturer of the home printer.
- *Dassault Technologies* (France) - producer of the transactional module needed for payment with debit, credit or smart cards.
- *IBM Canada Ltd.* - developer of the UBI transactional server.
- *Zenith Electronics Corp.* (US) - manufacturer of the UBI home set-top box developed by Videoway Communications, a division of Le Groupe Vidéotron Ltée.

INTERNATIONAL PARTNERING INTERESTS:

UBI and its partners share a willingness to export their know-how and technology to other markets and are very interested in speaking with both North American and European organizations interested in gaining access to this expertise. Such groups might include:

- broadband network operators
- media and financial groups

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Consortium UBI is presently focused on implementing its initial phase of services to the Saguenay region in Quebec. In its capacity UBI is very interested in talking with organizations that would like to participate in the development of the UBI system or who would like to deploy services via the UBI system.

Since UBI's approach can be reproduced in other countries with existing broadband network infrastructures, the Consortium's partners are willing to export know-how and technology to such markets. Similar projects with massive deployment in North America or in Western Europe could benefit from UBI's pioneering efforts to set up the first home electronic highway.

DEVELCON ELECTRONICS LTD.

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E-Mail: George.Best@Develcon.com
WWW: http://develcon.com

KEY PERSONNEL:

William D. Vancoughnett - Chairman & CEO
Heinz J. Jacob - Vice President Sales
Douglas A. Freestone - Vice President Technology
Michael Salustri - Vice President US Operations
George Best - Vice President Marketing

NATURE OF BUSINESS:

Develcon designs and manufactures standards-based data communications equipment and specializes in products used to create, interconnect and manage LANs. The company's products include a line of stackable SNMP managed hubs, local and remote Ethernet and Token Ring bridges, Ethernet multi-protocol bridge/routers and ISDN bridge/routers.

COMPANY PROFILE:

Year Established: 1974
Public Company
Number of Employees: 135
Annual Revenues: $ 14 million (1994)

Offices: Develcon's head office is located in Saskatoon, Saskatchewan. Other Canadian offices are in Calgary, Montreal, Ottawa, Toronto, and Vancouver, while international offices can be found in the US (Chicago and Atlanta), the UK (late 1995), Luxembourg and Singapore.

Key Customers:
- Alcatel AG
- Black Box
- Chase Research
- Racal Datacom
- Southhills Distribution
- Telecom New Zealand
- Unisys Corporation

COMPANY BACKGROUND AND HISTORY:

Founded in 1974, Develcon's first products were terminal-powered Limited Distance Data Sets, products for

which it holds line driver patents. In 1978, Develcon pioneered intelligent data switching with *DevelSwitch*, a central exchange for computers similar in function to a telephone PBX. In 1983, *DevelNet* was introduced, offering high speed data switching service that can link up to 64,000 computers, terminals and printers into one coherent network. Further enhancements have since been made to position *DevelNet* for the corporate re-sizing market.

In 1990, the company recognized the market potential for data communications products to interconnect PC Local Area Networks (LANs) and so introduced a line of Ethernet bridges. These products were followed by Token-Ring bridges, Ethernet Hubs, ISDN products and in the fall of 1993, an Ethernet Bridge/Router. Today Develcon offers a comprehensive line of standards-based data communications equipment approved for use around the world.

BUSINESS AND PRODUCT DESCRIPTION:

Develcon designs and manufactures standards-based data communications equipment and specializes in products used to create, interconnect and manage LANs. The company's products include:

Ethernet Internetworking Products:

- *Orbitor 6000 Central Office Bridge/Router* - for inter-connecting up to 14 remote local area networks, the *Orbitor 6000* routes IP and IPX protocols with sophisticated bridging available for all other protocols. Features hot-swappable WAN modules and meets security requirements by providing several filtering capabilities. Equipped with 600% data compression and ISDN.
- *Orbitor 3000 Branch Office Bridge/Router* - for inter-connecting remote Ethernet LANs. Features Bandwidth-On-Demand; control of individual link activation based on Time, IP and IPX destination; second link activation on traffic throughput, and automatic dial-up link recovery. Includes ISDN, Frame Relay and CSU/DSU interfaces.
- *Orbitor 1000 Small Office Bridge/Router* - for remote connections to a central LAN using ISDN. Routes IP and IPX protocols and bridges all other protocols. On an ISA Bus 1/2-size card, *Orbitor 1000* features automatic sensing and up to 600% data compression.
- *Model 120 Local Ethernet Bridge* - dual-port Media Access Control (MAC) level bridge, the *Model 120* provides protocol transparent connectivity for IEEE 802.3 Ethernet local area networks supporting OSI, XNS, TCP/IP, DECnet, NetWare plus others.
- *Model 100 High Speed Remote Bridge* - a MAC bridge providing a simple way to interconnect remote IEEE 802.3 networks over analog or digital WAN services, including T1, fractional T1 or E1 facilities. Features load sharing, bandwidth-on- demand and advanced traffic management.

Ethernet 10BaseT Wiring Hub Products:

The Develcon *DH* series Ethernet wiring hubs are a complete family of products intended to solve virtually any 10BaseT Ethernet wiring problem. The family consists of the *DH1500* series entry level unmanaged hubs, the *DH1700* series stackable hubs, and the *DH2400* series SNMP managed Ethernet wiring hubs.

Token Ring Products:

Designed to interconnect Token-Ring LANs, the *Model 220* and *200* products can operate in networks supporting NETBIOS, IBM's SNA (LU 6.2) and APPC, Novell's IPX/SPX, TCP/IP and many others. Both products can be configured to operate at either 4 Mbps or 16 Mbps. The *Model 220 Local Token-Ring Bridge* improves network response time and increases network security and reliability. The *Model 200 Remote Token-Ring Bridge* supports loadsharing over dual WAN interfaces and features bandwidth-on-demand and advanced traffic management.

Network Management Systems:

The *NMC Vision SNMP Management System* is a modular, scaleable network management system, portable across a diverse range of hardware and operating systems. Providing an intuitive, easy-to-use graphical user interface, standard applications include:

- a network map function
- a real-time statistics application
- a fault management application
- an historic performance handler
- a fault status window
- a set of configuration and administration facilities

The *NMC Vision* system is currently available to operate in a PC/Windows, WindowsNT and SunOS environment. Also available are a range of Product Specific Modules that provide custom graphical management for network components including all of Develcon's LAN/WAN products, plus a wide range of other major vendors networking equipment.*Contact:* George Best, Vice President Marketing

DEVELCON AND THE INFORMATION HIGHWAY:

Develcon designs and manufactures standards-based data communications equipment and specializes in products used to create, interconnect and manage local area networks (LANs). The company is focused on the remote access market and has introduced full support for ISDN services within its line of Ethernet internetworking products.

These products include:

- *Orbitor 6000 Central Office Bridge/Router* - for inter-connecting up to 14 remote local area networks, the *Orbitor 6000* routes IP and IPX protocols with sophisticated bridging available for all other protocols. Features hot-swappable WAN modules and meets security requirements by providing several filtering capabilities. Equipped with 600% data compression and ISDN.
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- *Model 100 High Speed Remote Bridge* - a MAC bridge providing a simple way to interconnect remote IEEE 802.3 networks over analog or digital WAN services, including T1, fractional T1 or E1 facilities. Features load sharing, Bandwidth-On- Demand and advanced traffic management.

Develcon also offers a comprehensive line of Token-Ring Products, 10BaseT Ethernet wiring hubs together with an advanced, scaleable network management system.

DEVELOPMENT ACTIVITIES:

Develcon continues to add features to its family of *Orbitor* products. These include enhancements to its ISDN

capabilities and the addition of Frame Relay to both the *Orbitor 6000* and *Orbitor 3000*. PPP will also be a standard feature on all of Develcon's bridge/router products in the near future.

STRATEGIC RELATIONSHIPS:

- *Black Box Inc.* (US) - private label agreement for the supply of Ethernet hubs and Ethernet bridge/router products. World market.
- *Chase Research PLC* (UK) - strategic marketing alliance allowing Chase to private label Develcon's bridge and router products.
- *Southhills Distribution* (US) - private label agreement for Ethernet bridges and routers. US and South American markets.

INTERNATIONAL PARTNERING INTERESTS:

Develcon is interested in adding additional distributors and resellers in the following countries/regions:

- Australia
- England
- Germany
- Mexico
- South America
- US

Develcon is also interested in forming an OEM agreement with an Ethernet switch manufacturer and would like to have discussions with companies that produce wireless ISDN or equivalent equipment for Pcs.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Develcon's products are sold in more than 60 countries worldwide through a network of sales offices and indirect channels. The company has also recently formed an alliance with Chase Research for the private labelling of Develcon's bridge and router products.

Develcon is interested in expanding its marketing activities internationally and is interested in identifying additional resellers and systems integrators throughout the world that are familiar with the ISDN and Ethernet markets and that might have an interest in reselling Develcon's products.

DIGITAL RENAISSANCE INC.

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KEY PERSONNEL:

Keith Kocho - President
Amy Kovarick - VP Operations
David Keeler - VP Engineering
Keith Durrant - Director Business Development
Perry Keller - Creative Director

NATURE OF BUSINESS:

Digital Renaissance is a new media engineering company which creates client-specific, platform-independent multimedia applications for leading organizations in both the public and private sector. The company has strong expertise in developing networked multimedia products and services for clients in the telecommunications, broadcasting and computing-related sectors. Digital Renaissance is developing a multimedia database software toolset for use in broadband applications.

COMPANY PROFILE:

Year Established: 1991
Private Company
Number of Employees: 16
Annual Revenues: $ 2.2 million (1995)

Offices: Digital Renaissance operates from offices in Toronto, Ontario. In 1995, Digital Renaissance, in collaboration with Digital Equipment Corporation, will be establishing a multimedia production facility in Hull, Quebec. The facility will be producing multimedia and interactive broadband applications. Digital Renaissance will be providing the production staff and related expertise for the centre.

Key Customers:

- Bank of Montreal
- Bell Canada
- Canadian National Aviation Museum
- Charles Bronfman Foundation "Heritage" Project
- Ford Motor Company
- IMAX Corporation
- Medialinx Interactive
- Northern Telecom
- NYNEX

- Ontario Lottery Corporation
- Rogers Communications Inc.
- Royal Bank of Canada
- Stentor

COMPANY BACKGROUND AND HISTORY:

Digital Renaissance was founded in 1991 and later incorporated in January 1992. Since that time, the company has grown quickly and become an expert in multimedia application and content development, multimedia software and hardware integration, and the network integration of digital video/multimedia server computers. More recently Digital Renaissance has moved to develop software for archiving and accessing content in multimedia databases.

Digital Renaissance won an INVISION award at the Multimedia Academy Awards held as part of the 1994 Comdex show, for its work on the "Silver Dart" multimedia encyclopaedia application created for the National Aviation Museum. The company was also named as one of North America's Top 100 Value-Added Resellers and Top 5 Multimedia integrators by VARBusiness magazine, 1994.

BUSINESS AND PRODUCT DESCRIPTION:

Digital Renaissance is a new media engineering company, developing custom interactive multimedia applications and serving as an integrator of multimedia systems. Drawing on its expertise in the area of networked multimedia, the company is now developing software tools for the archiving and retrieval of multimedia objects.

Multimedia Services:

Digital Renaissance has completed a wide variety of turn-key multimedia projects for major companies and government departments. These projects have included applications used in a wide variety of areas such as:

- touch-screen kiosks;
- computer-based training; and
- corporation communications and annual reports.

Digital Renaissance has also developed a number of interactive CD-ROM titles for educational and consumer markets.

The company's staff includes a blend of creative, computer, networking and business management expertise, supplemented where required with additional specialized freelance resources.

Digital Renaissance is a partner with Digital Equipment Corporation in the National Multimedia Institute, a world class multimedia production facility located in Hull, Quebec.

Systems Integration:

Digital Renaissance is a leader in the development and deployment of network-based multimedia solutions. The company has completed a number of leading-edge projects for major clients, including field applications and extensive technical studies on interactive broadband or information highway services. Digital Renaissance has considerable expertise in content development, database management, digital video servers and the network delivery infrastructure upon which the information highway will be built. The Company is an Alliance Partner with Bell Canada and has developed strong relationships with a number of telephone and cable

television companies, including NB Tel and Rogers Communications.
Software Development:

Digital Renaissance is developing a set of software tools for companies seeking to deploy interactive broadband applications. This 'middleware' software will include digital media preparation and annotation tools, software extensions for large video servers and broadband switches, and run-time modules for consumer devices such as television set-top boxes and personal computers. Digital Renaissance has already developed a preliminary version of a multimedia database tool and deployed it in a training application developed for a large multi-national industrial corporation. The company has also entered into an agreement with Digital Equipment Corporation to further develop its toolset to be utilized with Digital Equipment's video servers.

INFORMATION HIGHWAY

Digital Renaissance is a new media engineering company, developing custom interactive multimedia applications and serving as an integrator of multimedia systems. Drawing on its expertise in the area of networked multimedia, the company is now developing software tools for the archiving and retrieval of multimedia objects.

Software Development

Digital Renaissance is designing software tools for companies seeking to deploy interactive broadband applications. This 'middleware' software will include digital media preparation and annotation tools, software extensions for large video servers and broadband switches, and run-time modules for consumer devices such as television set-top boxes and personal computers. Digital Renaissance has already developed a preliminary version of a multimedia database tool and deployed it in a training application developed for a large multi-national industrial corporation. The company has also entered into an agreement with Digital Equipment Corporation to further develop its toolset to be utilized with Digital Equipment's video servers. Digital Renaissance's toolset will also be ported to Microsoft Windows NT.

DEVELOPMENT ACTIVITIES:

Digital Renaissance is providing strategic advisory services and application development assistance to a number of leading Canadian companies involved in Information Highway development activities. Examples of past and proposed projects include:

- for a large proposed interactive services field trial - serving as the lead consultant for both appliances (i.e. set top boxes, servers, etc.) and network design
- for a large telecom-related organization - research concerning base technologies, including kiosk networks and broadband; development of new software architectures; and development of application development guidelines and broadband applications.
- applications using satellite technology as the delivery vehicle.
- broadband application development.
- developing applications for a cable TV-based high speed modem network.

STRATEGIC RELATIONSHIPS:

Digital Renaissance is an authorized reseller for: Apple Computer, Digital Equipment Corporation, IBM, Lotus, Novell, Silicon Graphics, Sun Microsystems, and Starlight Networks. Strategic relationships include:

- *Bell Canada* - Bell Alliance Partner

- *Canadian Satellite Communications Inc. (CANCOM)* - investor and strategic partner
- *Digital Equipment Corporation* - software development agreement
- *Medialinx Interactive* - consultant to Medialinx
- *Microsoft* - Solutions Provider

INTERNATIONAL PARTNERING INTERESTS:

Digital Renaissance is very interested in establishing relationships that draw on the company's expertise in developing and deploying advanced interactive broadband applications. Partners of interest include:

- cable TV network providers
- entertainment companies
- large publishing firms
- multimedia development companies seeking expertise in networked applications
- telecommunications services providers

In addition, Digital Renaissance is interested in having discussions with software and computer-related companies regarding joint ventures or technology development efforts relating to the company's software tools for the archiving and retrieval of multimedia objects.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

To date, much of Digital Renaissance's activities have focused on clients in the eastern Canadian market. However, in response to market demand, plans are underway to extend the company's multimedia services and systems integration work into the rest of Canada and the US.

Digital Renaissance is also very interested in establishing relationships that draw on the company's expertise in developing and deploying advanced interactive broadband applications. Partners of interest include:

- cable TV network providers
- entertainment companies
- large publishing firms
- multimedia development companies seeking expertise in networked applications
- telecommunications services providers

DISUS

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KEY PERSONNEL:

Tom Jurenka
Director and General Manager
Telephone: (416) 417-7035
Fax: (416) 368-4933
E-mail: tom@disus.com

NATURE OF BUSINESS:

Primarily high-end systems integration and applications development.

COMPANY PROFILE:

Private
Year Established: 1991
Number of Employees: 10
Annual Revenues: $1 million (Cdn)
AllianceType: N/A
Key Customers: N/A

COMPANY HISTORY:

Disus was founded in 1981 as a consulting shop primarily, specializing in complex systems for industry. Re-incorporated in 1991, Disus primarily services the UNIX client-server market nationally and in the United Kingdom.

INFORMATION Highway

The question of making information networks a safe and trusted place for intellectual property (IP) is key to the success of the Information Highway. Unless owners of IP are convinced that their property will be adequately protected and paid for, they will be reluctant to place it on interactive networks.

The IVY project addresses these issues by offering a comprehensive IP management system developed with the active involvement of organizations known and respected for their trusteeship of IP in traditional distribution media.

INTERNATIONAL PARTNERING INTERESTS

Geographic Markets: Canada, United States, Europe
Potential Partners: content developers; network products and services; multimedia; and telephone companies.
Type of Alliance Sought: technology transfer; co-development of product or technology; and/ or joint marketing or sales alliance.
Particularly interested in alliances with networkable content distributors and producers/creators.

E B SYSTEMS LIMITED

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Canada
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KEY PERSONNEL:

Bill Evans, President
Ken Babb, Vice President
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Fax: (204) 489-7471
E-mail: bevans@ebsys.mb.ca

NATURE OF BUSINESS:

Broadband telecommunications systems consultants, designers and integrators specializing in cable and satellite television, wireless cable and wireless high speed multimedia facility implementation.

COMPANY PROFILE:

Private
Year Established: 1989
Number of Employees :5
Annual Revenues: private
Strategic Alliances: CANARIE Inc., Malaysia, ChinaKey Customers: Broadcasters, cable operators, telecommunications carriers

COMPANY HISTORY:

E B Systems Ltd. is a telecommunications system design, consulting and integration firm founded by two senior engineers/managers who have significant experience (over 49 years cumulative) in both broadband cable, satellite TV and business telecommunications, and telephone industry sectors. Projects have ranged from system design to management consulting and specification/design of new systems equipment, including installation support, testing and user training.

INFORMATION HIGHWAY

Services are the major product: CAD equipped to design wireless wide area or point-to-point system; CATV distribution systems; fiber optic and or coaxial cable. The firm has jointly developed, through a CANARIE Inc. project, a system of S-band antennas and an upconverter power amplifier and high power amplifier that serve a range of multimedia service distribution applications, both analog and digital.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, South America, Southeast Asia, Middle East, South Africa
Potential Partners: network products/services; cable companies; telephone companies; distributors and educators

Type of Alliance Sought: technology transfer; do-development of product or technology; joint marketing/sales; communications equipment distributor; and/or joint venture/partner/merger.

More specifically, the company is seeking technology transfer and/or co-manufacture and development of the transmission products, developed within the CANARIE project, for major overseas markets. It is also seeking distribution and sale of its products and engineering services in overseas markets, with assistance from Canada. It is equally interested in joint investment in telecommunications or broadcast/multimedia transmission projects that would use the expertise and equipment offered by E B Systems Limited.

ENTERPRISE PLANNING SYSTEM CORPORATION

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Kanata, Ontario
Canada K2L 4B6

Contact:
Flood, Dir.Marketing/M. Heath, Mgr., Development/L. Stewart Mgr. Customer Support
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Nature of Business:
Develop and market advanced planning software for manufacturers. Products provide ability to simulate and evaluate to critical opportunities and challenges in the manufacturing process. Areas include: material planning, master scheduling and capacity. Built with web-based technology, products allow interaction between suppliers and manufacturers over the Internet.

Corporate Profile:

Private
Established: 1984
Number of Employees: 35
Annual Revenues: $6 million (Cdn)
Strategic Alliances: Parallax, plc (UK); ST Computer (Singapore)
Key Customers: Nortel, IBM, Hewlett-Packard, Thomson, Unysis

Company History:

Enterprise Planning System was founded in 1984 to respond to those manufacturers which required additional planning capabilities. In 1985, Enterprise launched its first product, a specialized computer with associated software, able to perform the MRP calculations in less than a hundredth of the time taken by previous approaches. The strong response to this first product created a new market for on-demand planning and scheduling software and it established Enterprise as the leader in this market.

Information Highway Products:

The manufacturing software market has evolved from MRP to MRPII to on-demand MRP. On-demand MRP permits off-line processing of the material requirements plan to be performed on an as needed basis. With the advent of networked computers, Intranets and the Internet, Enterprise's products will assist in managing the supply chain.

Information exchange among a company's plants and suppliers presently exists. However, collaboration among these groups does not yet exist at the planning level. Enterprise information highway products will enable and extend this planning to and through the Internet. Suppliers, manufacturers and end customers, by utilizing the *webPLAN* product and its implementation of C*ollaborative Planning*, will jointly make decisions while working at different sites over the Internet through a planning collaboration.

In addition, Enterprise products are being enabled with web-based technologies such as HTML and Java to allow these advanced manufacturing applications to function as true Intranet applications within a manufacturing organization. w*ebPUBLISH, webEXECUTIVE* and *webADVISOR* all permit a new class of casual user to work with the power and flexibility of advanced planning and simulation regardless of their location within the organization - the internal network that is browser enabled permits users from around the world to access the power of Enterprise's applications.

International Partnering Interests:

Geographic Market: Canada, United States, Asia-Pacific and Europe.
Potential Partners: distributors; software developers; Internet application providers.
Type of Alliance Sought: Enterprise is seeking partners for three primary reasons: to expand their distribution options throughout the world; to provide software and technologies that complement their current strategic and product development direction; and to add complementary products to their suite that will further enable the development of Intranet applications for the manufacturing enterprise. Technology preferences are related to the emerging capabilities being developed from Internet and Intranet environments such as Java, Hot Java, HTML and VRML.

ENTIA TECHNOLOGY INC.

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WWW: http://www.isisnet.com/~entia

KEY PERSONNEL:

Tomasz Pietrzykowski - President
Mark Szpakowski - Product Director
Ken Friedman - Marketing Director

NATURE OF BUSINESS:

Entia Technology, Ltd., based in Halifax, Nova Scotia, develops *Nova Magic*™, a distributed, multi-user framework for multimedia application development that supports all phases of production, from design and prototyping through to high-performance delivery on multiple platforms. Entia Technology, through its sister company Entia Production, also engages in co-production of titles and applications with multimedia developers.

COMPANY PROFILE:

Year Established:1993
Private Company
Number of Employees: 12

Offices: Entia Technology's offices are located in Halifax, Nova Scotia.

Key Customers:

Nova Magic™ is expected to begin shipping in May 1996.

COMPANY BACKGROUND AND HISTORY:

Entia Technology was founded in 1993 by Dr. Tomasz Pietrzykowski, of the Technical University of Nova Scotia. Dr. Pietrzykowski, one of the pioneers of the visual, object-oriented programming field, and the creator (in 1982) of the Prograph language, introduced two key technologies to enable development of sophisticated multimedia titles:

- an advanced object model (*FORSE*™) with intrinsic support for resource sharing and runtime object creation and modification;
- the *Prospero*™ visual/textual language, with high-level thread management facilities, for programming complex object interactions.

Entia Technology is commercializing and marketing these technologies which are embodied in the *Nova Magic*™ family of products. Entia Production extends *Nova Magic*™ by creating add-on authoring templates, media assets and tools, and by using the software to co-produce titles and applications.

BUSINESS AND PRODUCT DESCRIPTION:

Nova Magic™ is a team- and distance-enabled authoring framework that produces high-performance multimedia applications, maximizing the value and re-usability of their component assets. Initially implemented on the Macintosh, players will soon be available for Macintosh, Windows and PowerMac platforms.

The *Nova Magic*™ product line includes the following components:

- *Core Framework*:
  - Storyboard Manager, for integrating a script withan application;
  - Object Manager, with an Object Editor, Animation Engine, and Import-Export manager;
  - Object Repository, with Asset, Change and Workflow management tools;
  - *Prospero*™ Code Editor, Interpreter, and Compiler;
  - a set of Players for the target delivery platforms.
- *Assets*:
  - a set of Templates for the most common types of multimedia applications;
  - a set of Object Libraries, packaging related multimedia objects and their interactive behaviours;
  - a set of Media Asset Tools for editing common media types.

The core framework supports collaborative work by teams of title developers, producers, and media authors. The work group can extend over local area and wide area (Internet) networks.

Nova Magic™ provides high level, object-oriented tools for: providing script continuity and control; producing, manipulating and tracking audio-visual components in the form of objects; and specifying playback and interactivity of a production. The framework's architecture is open, allowing inclusion of tools written in C or C++ or tools implemented as OpenDoc or OLE parts.

Playback and interactivity are defined visually as *Prospero*™ flow chart diagrams which can be executed at any time in the development and testing process. *Prospero*™ is an accessible, high-level visual/textual language. *Prospero*™ diagrams are created in drag and drop fashion in the *Prospero Code Editor*, or generated by "programming-by-example", directly manipulating title objects.

Nova Magic™ helps control production costs by:

- creating a custom authoring environment for efficiently producing products in a certain category
- supporting re-use of program components and tools from one product to another.

Custom authoring environments take the form of templates for product categories (such as computer-based training, kiosks, adventure worlds, and multimedia reference) and for studio-specific product lines. These templates may be acquired from Entia Technology, or developed in-house.

Nova Magic's object repository enables development and re-use of special purpose object libraries and tools.

An object library contains all the objects, along with their mutually interacting behaviours, in a specific category (for example, a weather library with sun, clouds, wind, and rain, with appropriate interactions). Such real-world virtuality is enabled by *Prospero*'s sophisticated support for multi-processing (so individual objects can live in their own spaces, with their own behaviours) and messaging (so object interactions can be simply and elegantly specified).

A *NovaMagic™ tool* is an editor for a specific template, object library or object, or for generating objects and code via programming-by-example. Tools can be written in *Prospero™*, or C++ and then wrapped into the *Nova Magic™* environment. External tools, if they are OpenDoc or OLE parts, can be used as-is within the *NovaMagic™* environment which acts as an OpenDoc container. The edited object then becomes a *NovaMagic™* object, capable of interacting with other title objects.

INFORMATION HIGHWAY

Entia Technology has developed a core multi-threading and object-oriented technology which is particularly well suited to constructing shared, multi-user, network-distributed environments, where immersion (3D) and interactivity are important values. This is now being applied to creating toolkits which make it easy for both World Wide Web home page developers and communities of users to create custom and dynamically modifiable shared virtual environments.

Entia's technology provides a foundation for implementing and managing communicating objects and processes, which are programmed elegantly and simply in the *Prospero™* high-level visual/textual language. Among the types of applications enabled are CD-ROM-based multimedia titles with Internet components; multi-user network games; collaborative environments, such as virtual offices; and distance education and training.

DEVELOPMENT ACTIVITIES:

Entia Technologies is developing a set of products for the creation of Internet-accessible shared multi-user environments, which allow both the shared spaces and their component objects and inhabitants to be created and modified by their users. Four products are planned:

- a *Beings Player* co-operates with a WWW browser to render interactive multimedia content-in 3-D, using VRML (Virtual Reality Modelling Language). The *Beings Player* does the work of displaying the shared space for each client.
- update and change information is sent from the player to the *Beings Server*, which maintains consistency of the shared space and mediates communications among the clients. The *Beings Server* co-operates with the Web host.
- a *Beings Toolkit* enables the client user to create and customize objects that are static parts of the shared environment, as well as dynamic objects ("beings") and agents of the user ("avatars"). Such custom beings are then added to the shared space (registered with the *Beings Server*) so they can be visible to other users. The *Beings Toolkit* lets the user create and modify 3-D objects, and to some extent program them (via high-level scripting, process-composition and programming-by-example tools).
- *Esse* is the server-side toolkit, aimed at Web Site authors and application developers. *Esse* includes the *Prospero* language and object editors, with specific support for creating virtual environments and individual objects, and for programming their interactions as well as those of their users.

INTERNATIONAL PARTNERING INTERESTS:

Entia is partnering with a number of companies to develop specific toolkits in the areas of

- *entertainment* - such as multi-user games and immersive/interactive simulations;
- *collaboration* - virtual offices, team spaces, enterprise modelling;
- *education* - corporate training, distance education.

Entia Technology is seeking partners (Web site developers, content providers, information systems designers and implementers) to develop applications and product templates in the areas listed above.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Entia Technology is seeking partners to help market and distribute its *Nova Magic*™ product in North America, Europe, and Japan. Of particular interest are relationships with partners to incorporate Entia's core technology into their multimedia development tools and into their delivery platforms. This includes commercial and in-house tool developers, information system providers, and hardware vendors of multimedia players (both PC and set-top box based).

FAMIC INC.

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KEY PERSONNEL:

Alain Latry - President
François Gariepy - General Manager, Technology
Nelson Nadeau - General Manager, Education

NATURE OF BUSINESS:

Famic Inc. designs and develops software and systems to serve the needs of the R&D simulation, industrial automation and vocational technical education markets. Famic also provides complete solution services to customers, utilizing its extensive experience in multimedia simulation applications.

COMPANY PROFILE:

Year Established: 1986
Private Company
Number of Employees: 140
Annual Revenues: $11million (1994)

Offices: Famic is headquartered in Montreal, Quebec. Famic also has established several foreign subsidiaries including: Famic Eurilor/Fasim (France), Famic Ltd. (US) and Famic Ltd. (United Kingdom).

COMPANY HISTORY:

Famic was initially established to provide services in the educational and technical training market. In 1988, following the release of Famic's first software product, *PneuSim*, the company began to divert more of its efforts to the development of simulation software. In 1990, Famic Inc. formed partnerships in ownership with Nouveler, (100% owned by Hydro-Quebec), and Alphatem, who is a world leader in nuclear engineering. This funding allowed Famic to expand into the electric utility
market and launch its simulation software into the international arena. In order to expand the domain and distribution of Famic's software and services, the company is now developing applications and products for the Information Highway. Famic has undertaken the strategic development of collaborative co-production tools and multimedia solutions that can generate content and exchange information on the Information Highway.

BUSINESS AND PRODUCT DESCRIPTION:

Famic's integrated family of software and hardware products are categorized into four groups: Multimedia

Software, Simulation Software, Automation Software and Educational Products.

Multimedia Software:

TRAXX is a software tool for developing real-time multimedia synthetic environments. The software supports the importing of several multimedia formats, including video, sound, images and voice. This technology utilizes state-of-the-art, object-oriented software to create an interactive training system based on individual expertise and hands-on knowledge.

The Multimedia Solutions' development group produces turn-key, multimedia systems that reduce the learning curve and risk associated with new technologies. The team analyzes a client's requirements and selects the technologies best suited to meet those needs. Famic is involved in several Canadian and European projects to develop authoring and Information Highway technologies.

Simulation Software:

PneuSim, *HydrauSim*, and *RefriSim* are circuit drawing packages with the power to simulate the operation of any design. These unique software products were created to simulate and print electro-pneumatic, electro-hydraulic, and refrigeration circuits. The products serve both educational and industrial clients due to their flexibility as both training and design tools.

Automation Software:

CADEPA is a Grafcet software tool developed for programming programmable logic controllers (PLC's). This standardized high-level graphical language allows the user to quickly develop a clear graphical representation of how an algorithm will control the process being automated.

Graphite is the Windows version of the *CADEPA* software. This product is currently in beta-testing and will be released in 1995. Graphite will perform the same operations as *CADEPA* utilizing the features and feel of the windowing environment.
SPOC is a software tool that simulates the behaviour of a process without connecting to the PLC. *SPOC* simulates the behaviour of process equipment thus reducing the cost and risk to implement any type of automation. *SPOC* is currently in beta-testing and will be released in 1995.

Educational Products:

Outside of Canada, Famic markets *Learning Guides* developed by the Centre d'elaboration des moyens d'enseignement du Quebec (CEMEQ). These are self study courses that cover 168 professions.

Famic develops *Training Equipment* such as simulators, models, test boards, panels and micro-factories for the educational market. These products provide effective solutions to the difficult problems inherent in teaching technical subjects.

INFORMATION SUPERHIGHWAY

Famic Technologies Inc. (FTI), a division of Famic Inc., has developed a core expertise in the development of advanced and true *Multimedia Solutions* for individualized training and distance learning. By integrating several technologies, FTI's development team can recreate a synthetic environment that greatly facilitates the learning process. Interactive courseware not only gives instructions, it finally allows the student to enjoy hands-on learning.

Next Generation Computer-Based Training

FTI was extensively involved in a CANARIE Inc. project to develop and operate a broadband network-based distance learning solution. Famic conducted the preliminary task analysis, competence criteria identification and instructional design as well as the multimedia production and technology-based deployment. These activities have led FTI's personnel to design new and innovative solutions that take maximum advantage of new technologies. FTI's goal is to eventually allow these solutions to be broadly distributed as content on the World Wide Web.

TRAXX - The Evolution of Simulation

TRAXX has been developed for users with expert knowledge who must develop multimedia synthetic environments that support their validation, procedural development, training and instructional activities. The software supports the importing of several multimedia formats, including video, sound, images and voice. *TRAXX* is object-oriented, C++-based and includes ObjectStore, a mature OODBMS from Object Design.

TRAXX was developed as a collaborative co-production tool and multimedia solution that can generate content and also exchange information on the Information SuperHighway. *TRAXX* can be networked over the Internet to allow a team of experts to work on-line towards the development of a common system. In addition, the Viewers in *TRAXX* can be used to capture, exchange and dissipate information over the Web.

DEVELOPMENT ACTIVITIES:

FTI has designed *TRAXX* and *Multimedia Solutions* to be extensions of the traditional methods of training. Underlying the products is a strong commitment to the development of state-of-the-art software and services that create an interactive training system based on individual expertise and hands-on knowledge. FTI aspires to distribute its applications and services throughout the world via the Information Highway.

STRATEGIC RELATIONSHIPS:

The Famic group has developed expertise in the area of large complex systems integration. Famic's success in securing and delivering such integrated systems is reflected in its relationships with several strategic customers, including:

- *CANARIE Inc.* - awarded Famic a grant for the development of a distance learning solution using multimedia technologies. Famic conducted preliminary task analysis, competence criteria identification and instructional design as well as multimedia production and technology-based deployment.
- *Government of Indonesia* - awarded Famic a contract for the design, development and delivery of pneumatic and hydraulic simulators (16 units). Famic is responsible for delivery and on-site training as well as technology transfer.
- *Hydro-Quebec* - mandated Famic to manage the technology transfer of two key technologies to Companhia Energetica De Minas Gerais (CEMIG) using two pilot projects. Famic is managing the knowledge transfer related to the Smart Station System and the Generating Units Diagnostic and Permanent Monitoring, mutually developed by Hydro-Quebec and Famic.

INTERNATIONAL PARTNERING INTERESTS:

FTI is presently in search of two types of partners:

- *Technology Partners* - FTI is seeking companies with HTML-based products, or products with Search Engines, that can be used to make the *TRAXX* Viewers easier to use and that will speed up the way which *TRAXX* collects information from the Web. Prospective companies must be able to work with FTI to add features to make *TRAXX* even more suitable for collaborative co-production over the Internet.

- *Vertical Partners* - FTI also requires partners that can help develop and launch the product in vertical markets such as in manufacturing, entertainment and medicine. Partners being sought include:
  - Product Distributors
  - Systems Integrators
  - Value Added Resellers

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Famic has more than 70 distributors selling its simulation, automation and educational products in over 30 countries worldwide. The majority of these companies are in Europe and the US. Famic's in-house sales team handles most of the domestic sales activity. New markets being considered include Brazil, Mexico and Southeast Asia.

The Multimedia software division is aggressively seeking partnerships with distributors, value added resellers and systems integrators. International marketing arrangements are primarily being sought with domestic partners and Pacific-Rim and American companies.

Channels of interest include:

- distributors who can use their sales, marketing and technical support infrastructure to develop sales channels throughout their region on behalf of Famic
- system integrators who can use Famic's services and software to facilitate the generation of systems or who can sell Famic product licenses with their systems
- value-added resellers who can add value to Famic's products and services by bundling their products and services with the product for resale.

FAST FORWARD TECHNOLOGIES INC.

541 Kenmount Road
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Canada
A1B 3P2

CONTACT:

Keith Sheppard
Chief Operating Officer
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NATURE OF BUSINESS:

Fast Forward Technologies Inc. is a developer of new interactive product and services for the global Information Highway. The company specializes in the application of enabling technologies for business and community development worldwide. Its products and expertise spans the range from rural-based network systems through to leading-edge consumer and business broadband applications.

COMPANY PROFILE:

Private
Year Established: 1995
Number of Employees: 6
Annual Revenues: $250,000 (Cdn)
Strategic Alliances: cable television; media companies (radio, print); European Union telematics R&D projects
Key Customers: Information service providers; electronic media and publishing companies; regional and national governments.

COMPANY HISTORY:

Founded as a joint venture between Enterprise Network Inc. and Cable Atlantic Inc. in 1995, Fast Forward Technologies Inc. was formed to capitalize on its parent organizations' expertise in interactive product and service development, rural information services, and high speed data technologies.

INFORMATION HIGHWAY

The company is leading the Remote Information Publishing - Custom Distribution (RIP-CDs) consortium to develop a multi-point electronic publishing application. This product will allow organizations to collect and build customized electronic publications and publish them through a variety of media, including CD-ROM, the World Wide Web and broadcast and interactive cable television. The company is also developing a range of products and services to support teleworking from urban and rural communities on an international basis.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, South America and Europe

Potential Partners: content developers; network products/services; multimedia; cable companies
Type of Alliance Sought: co-development of product or technology; joint-marketing/sales alliance.

The company is looking for alliances with companies to co-develop and market their electronic publishing product. They are interested in forming an alliance with a company that has a background in software development and sales in the publishing and/or Internet markets.

FIRSTCLASS SYSTEMS CORPORATION

1456 Johnston Road, Suite 200
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Email: Ken.Reimer@firstclass.unb.ca Tadek.Kulacz@firstclass.ca

Nature of Business:
Development and marketing of computer-based multimedia training products for delivery to commercial and home users on a pay-by-time-of-use basis over the Internet.

Corporate Profile:
Public
Established: 1987
Number of employees: 90
Annual Revenues: $5.5 million (Cdn)
Strategic Alliances: IBM, DEC
Key Customers: Fortune 1000 corporations

Company History:
Incorporated in Calgary in 1987, it moved its head office to White Rock, B.C in 1988. It later formed FirstClass Systems Product Development Corporation in New Brunswick in 1993. Publicly listed on the Vancouver Stock Exchange (VSE) in the spring of 1992, it moved to the Senior Board (commercial/industrial) of the VSE in the summer of 1992.

Information Highway Products:
FirstClass Systems' EDSTART technology is currently being adapted to allow for delivery of digital products over the Internet.

International Partnering Interests:
Geographic Markets: South America, Japan, Southeast Asia, Europe
Potential Partners: content developers; multimedia; telephone companies; Internet on-line payment system developers
Type of Alliance Sought: technology transfer; co-development of product or technology; joint marketing/sales alliance; distributor; and/or a joint venture/partner/merger.

FirstClass Systems Corporation is particularly interested in a joint production, development and investment alliance with computer-based training and multimedia companies.

FULCRUM TECHNOLOGIES INC.

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KEY PERSONNEL:

Eric Goodwin - President and CEO
Mike Laginski - Chief Operating Officer
Peter Eddison - Vice President Marketing
Peter Reid - Vice President, Finance
David Haskins - VP, Research and Development
David Keys, VP, Corporate Development
Larry Trenwith - Vice President, North American Sales
Fabrizio Mignini - Vice President, European Sales
Joe Nardi, Vice President, Asian Pacific Sales
Suanne Day, Vice President, Customer Services

NATURE OF BUSINESS:

Fulcrum Technologies develops and sells indexing and retrieval software for full-text retrieval applications. This software is used with a variety of document formats and operates in heterogeneous computing environments that include multiple operating systems, networks and graphical user interfaces. Fulcrum's products conform with open system standards and are well suited for use in client/server computing.

COMPANY PROFILE:

Year Established: 1983
Public Company
Number of Employees: 170
Annual Revenues: $ 27 million (1994)

Offices: Fulcrum's head office is located in Ottawa, Ontario. US offices are located in Atlanta, Boston, Chicago, Houston, Redwood City and Washington. Fulcrum's European headquarters are located in Paris with additional sales offices located in Frankfurt, London and Rome.

Key Customers:

- Banca di Roma
- Bell & Howell (UMI)
- Elsag Bailey
- Florida Power
- Fujitsu/ICL

- Interleaf
- Il Sole 24 Ore
- Microsoft Corporation (The Microsoft Network)
- National Semiconductor
- Siemens Nixdorf
- Silicon Graphics
- Sun Microsystems

COMPANY BACKGROUND AND HISTORY:

Since 1983, Fulcrum has been a leader in developing, marketing, licensing, and supporting software that indexes and retrieves the intellectual capital contained in electronically-stored documents. Fulcrum's software is used by large and medium-sized organizations to provide access primarily to text-based information. It allows organizations to leverage critical corporate investments by integrating text-retrieval capabilities with existing corporate management systems. Fulcrum software is installed worldwide in 40 countries and operates in 8 languages.

BUSINESS AND PRODUCT DESCRIPTION:

Fulcrum Technologies offers a complete family of standards-based text-retrieval software products. These products are ideal for:

- adding powerful search capabilities to CD-ROM information products
- adding text-retrieval functions to existing RDBMS-based information systems
- building comprehensive on-line document information systems

Fulcrum's search software features the unique *Intuitive Searching* capability, which allows users to highlight information of interest, and then ask the search engine to retrieve other documents with "similar" content. Other features of Fulcrum's products include full Boolean, phrase, and proximity searching, relevance ranking, fuzzy Boolean searching, hypertext links, and a thesaurus function.

Fulcrum SearchServer™

At the core of Fulcrum's product family is *Fulcrum SearchServer*, a robust, multi-platform indexing and retrieval server engine for full-text retrieval applications. *Fulcrum SearchServer* features a scalable, client/server distributed processing architecture. It makes use of an SQL-based query language and complies with Open Database Connectivity (ODBC), so that it can be employed in text-retrieval applications that combine seamlessly with customers' existing information systems.

Since its launch in 1993, *Fulcrum SearchServer* has been licensed to over 50,000 end users in corporations and other organizations throughout North America and Europe. Through its technology licensing business, Fulcrum's text-retrieval software has been licensed to over a million users in more than 40 countries and eight languages. Fulcrum's technology is also embedded in hundreds of thousands of CD-ROMs.

Fulcrum SearchBuilder™ Toolkits

As companion products, *Fulcrum SearchBuilder™ Toolkits* integrate with popular graphical development tools - like Visual Basic, Visual C++, and PowerBuilder - so that MIS professionals and third-party developers can work in a familiar environment to build client/server text-retrieval applications, quickly and easily, that access *Fulcrum SearchServer.*

Fulcrum Surfboard™

Fulcrum Surfboard is an open scalable Internet search engine. It combines Fulcrum's powerful text-retrieval technology with standard Internet protocols to provide cost-effective, easy searching of information using popular Internet access tools. With *Surfboard*, databases can be searched by the latest World Wide Web (WWW), Gopher, America On-Line (AOL), and Delphi browsers. *Surfboard* is also compatible with HTTP (Mosaic and Netscape), WAIS, Gopher and Z39.50 query protocols.

Fulcrum products are available on more than 20 different hardware platforms and operating systems, including Windows, Windows NT, a wide variety of Unix platforms, OS/2 and Apple Macintosh.

INFORMATION HIGHWAY

Fulcrum Technologies develops and sells indexing and retrieval software for full-text retrieval applications. This software is used with a variety of document formats and operates in heterogeneous computing environments that include multiple operating systems, networks and graphical user interfaces. Fulcrum's products conform with open system standards and are well suited for use in client/server computing. Fulcrum software is available on more than 20 different hardware platforms and operating systems, including Windows, Windows NT, a wide variety of Unix platforms, OS/2 and Apple Macintosh.

Fulcrum's *Surfboard™* software combines Fulcrum's powerful text-retrieval technology with standard Internet protocols to provide cost-effective, easy searching of information via the Internet.

Fulcrum Surfboard™

Fulcrum Surfboard is an open scalable Internet search engine. With *Surfboard*, databases can be searched by the latest World Wide Web (WWW), Gopher, America On-Line (AOL), and Delphi browsers. *Surfboard* is also compatible with HTTP (Mosaic and Netscape), WAIS, Gopher and Z39.50 query protocols.

Surfboard's World Wide Web gateway can reside on a separate server, apart from the databases, which allows companies to control database access from a central location while providing access to other *Surfboard* databases on multiple servers inside the firewall. Users of the WWW and WAIS can search across multiple *Surfboard* databases simultaneously.

Surfboard gives users uncommonly powerful search capabilities. Searches can be undertaken using natural language, Boolean or structured queries. Search results are ranked, and documents can be retrieved in their native formats or converted automatically to HTML or readable text. This means information providers do not need to convert the documents in their *Surfboard* databases to make them available for viewing by the complete range of Internet viewers. Users can also access Fulcrum's exclusive *Intuitive Searching* feature, which allows them to highlight information of interest, then ask the search engine to retrieve other documents with "similar" content.

STRATEGIC RELATIONSHIPS:

- *Corel Corporation* - licensed Fulcrum technology
- *CompuServe* - licensed *SearchServer* software

- *ICL* - licensed Fulcrum technology for incorporation into TeamWARE Office
- *Microsoft Corporation* - developer for Microsoft Exchange and Windows NT
- *Powersoft* - alliance partner
- *TMS Inc.* - *SearchServer* integration with TMS image management software

- *WAIS Inc.* - integration of *SearchServer* with WAIS Network Publishing Protocol to create an Internet-compatible implementation toolkit

INTERNATIONAL PARTNERING INTERESTS

Fulcrum Technologies is interesting in forming partnerships with international companies to further develop and sell its range of indexing and retrieval software products, including *Surfboard*. Key international partnering prospects include:

- OEM partners
- on-line publishers
- systems integrators

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Fulcrum Technologies sells on both a direct basis and indirectly through a combination VARs, OEMs and ISVs. The company maintains sales offices in Canada, the United States and Europe, and has licensed in software to customers in over 40 countries.

Fulcrum is actively developing its markets in the Pacific Rim. Fulcrum has begun to make gains in this region following the appointment of its Vice President of Asian Pacific Sales.

Building on its purchase of Fulmedia S.A., a systems integrator in Paris, France, Fulcrum also hopes to strengthen its already strong presence in the European market, especially among large corporate accounts requiring total solutions.

GEMINI LEARNING SYSTEMS INC.

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KEY PERSONNEL:

Kim Adolphe - President
Stuart Williams - Director of Technical Operations
Carmen Swalwell - Director of Sales
Pam Hirtle - Manager of Quality Control and
Customer Support
John Wetherhill - Manager of Client Education

NATURE OF BUSINESS:

Gemini Learning Systems Inc. (Gemini) has developed a technology-based training tool called *SWIFT* (SoftWare Intelligent Freeform Training). The company continues to develop new features and enhancements to *SWIFT* for distance delivery and improved pedagogy through research and development projects, both independently and in joint venture partnerships. Gemini also provides expertise in UNIX and Open Systems for instructor-led training, courseware development, consulting and system administration outsourcing services.

COMPANY PROFILE:

Year Established :1989
Private Company
Number of Employees: 12

Offices: Gemini is based in Calgary, Alberta.

Key Customers:

- Alberta Real Estate Association
- IBM Canada
- Mobil Oil
- Pan Canadian
- Petrotechnical Open Software Corporation (POSC)
- Southern Alberta Institute of Technology (SAIT)
- Trans Canada Pipeline
- Transport Canada
- University of Calgary
- Westcoast Energy

COMPANY BACKGROUND AND HISTORY:

Gemini was established to provide UNIX and Open Systems expertise for instructor-led, courseware development, consulting, and system administration services. Gemini offers introductory to advanced training courses for UNIX, SUN, AIX, NextStep, C, C++, Motif, Oracle, and object-oriented programming.

In 1991, the company began investing in the development of a unique software training tool, *SWIFT*™ (SoftWare Intelligent Freeform Training) to complement existing services and expand business opportunities. A prototype was completed in 1992, which allowed the company to test the product and conduct extensive market research into the global market potential. In 1993, Gemini and the Alberta Research Council entered into two consecutive Joint Research Ventures totalling $ 1.5 million, not including commercialization costs. *SWIFT* was launched internationally in 1994.

BUSINESS AND PRODUCT DESCRIPTION:

Gemini Learning Systems Inc. develops and sells the *SWIFT* technology-based training tool. *SWIFT* is a sophisticated adaptive learning environment into which virtually any course content (text, graphics, video, sound, animation and simulations) can be easily inserted. The learning environment is already created in *SWIFT*, therefore no programming skills are required. Preparing courses for insertion into *SWIFT* takes an average of 2-8 hours of preparation for every 1 hour of instruction.

Gemini actively participates in research joint ventures nationally and internationally, dedicating significant resources to research and development in applying artificial intelligence techniques to training, implementing progressive learning methods and staying cognizant of the latest developments and trends in Open Systems. The company is currently undertaking research to determine the effectiveness of the *SWIFT* interface for secondary and post-secondary audiences. Gemini entered into an international joint research venture to provide an ISDN link and extension toolkit for *SWIFT* for distance learning. This is one of only three private company proposals chosen for the Canada-EC agreement for Scientific and Technological Cooperation. Partners include Condat frorn Berlin, Germany, the European Association for Distance Teaching Universities (EADTU) of De Heerlen, The Netherlands and CITI of Laval, Quebec. Gemini has also been invited to participate in three centres of excellence proposals: *Telelearning*, led by Simon Fraser University; *Technology Based Learning*, led by the University of Calgary and McMaster University and *Telemedicine*, led by the University of Calgary Faculty of Medicine.

INFORMATION HIGHWAY

Gemini Learning Systems Inc. (Gemini) has developed a technology-based training tool called *SWIFT* (SoftWare Intelligent Freeform Training). The company is developing new features and enhancements for distance delivery and improved pedagogy through research and development projects, both independently and in joint venture partnerships.

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DEVELOPMENT ACTIVITIES:

Gemini, Advantis Canada (an IBM company) and the University of Calgary have developed an innovative project to develop and commercialize a software product for education and life-long learning delivered to the home, *Home Ed Net (HEN)*. The *HEN* project exploits the convergence of new media, computers and

broadband networks. Gemini, will capitalize on the development of their educational software product, *SWIFT* to develop extensions for delivery over broadband networks. Advantis Canada will provide their new technology, the set top box and the broadband network and the University of Calgary will provide adult education courses for testing and eventual commercialization.

Gemini is currently undertaking a research and development proposal to deliver *SWIFT* courses over the World Wide Web.

Gemini is a partner in an international joint research venture to provide an ISDN link and extension toolkit for *SWIFT* for distance learning. This was one of only three private company proposals chosen for the Canada-EC agreement for Scientific and Technological Cooperation. Partners include Condat from Berlin, Germany, the European Association for Distance Teaching Universities (EADTU) of De Heerlen, The Netherlands and CITI of Laval, Quebec.

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STRATEGIC RELATIONSHIPS:

- *Alberta Research Council* - *SWIFT* has been developed in two joint research projects with the Alberta Research Council.
- *Foothills School Division* - partnered with Gemini to implement *SWIFT* for the purposes of conducting usability studies in a secondary education environment and provide feedback from students and teachers for continued development.
- *Kenonics Controls Inc.* - a Course-Added-Reseller for *SWIFT*, are developing a gas measurement course for a client and plan to distribute the end-user *SWIFT* course worldwide.
- *Oracle Corporation* - Gemini is a Service Provider for the delivery of end-user training.
- *University of Calgary* - several professors from the University, representing different faculties, beta test new releases of *SWIFT* and sit on the *SWIFT* Steering Committee.

INTERNATIONAL PARTNERING INTERESTS:

Gemini' is interested in developing partnerships with companies internationally to help exploit the potential of its *SWIFT* technology and training expertise. Key international partnering prospects include:

- Courseware Developers
- Simulation and Multimedia Developers
- Software Developers
- Software Distributors (wholesale or retail)
- Total technology-based Training Solution Providers
- Training Companies

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Gemini is seeking Reseller partners and *SWIFT* Distributors worldwide

- *Value-Added Partners* - enhance existing services by implementing *SWIFT* as a Total Solution Provider, providing a cost-effective technology-

based training solution to clients or as a Course Added or Value-Added partner, developing course content for implementation into *SWIFT*.

- *SWIFT Distributors* - market the *SWIFT* (Producer's Kit) or the expanding library of *SWIFT* end-user courses, including WordPerfect for Windows and Microsoft Word for Windows. Course library distributors include retail chains, wholesalers or training firms with an infrastructure in place to manage higher volumes of product with minimal requirement for product expertise and support.

SWIFT (Producer's Kit) Distributors will work closely with Gemini. An excellent business reputation and compatibility with the business interests and attitudes of Gemini is essential as is an established client-base and experienced team of dedicated sales professionals. In addition, distributors should offer products and services that complement *SWIFT*, and have an in-depth knowledge of the target market, any barriers that might exist, and how to overcome them.

Gemini has recently signed distributors in Calgary and Vancouver (Canada), Ireland, The Netherlands, Utah (US), and the United Kingdom.

Gemini is also interested in forming partnerships with organizations that have significant experience managing distributors outside of Canada. Geographic market activities and interests include: Asia, Australia, Europe, Japan, Latin/South America, and North America.

HOME TICKET NETWORK LTD.

Suite 802
205 - 9th Avenue S.E.
Calgary, Alberta
CANADA
T2G 0R2

Telephone: 403-531-7840
Fax: 403-266-7392
E-mail: jeff@htn.com
WWW:http://www.htn.com

KEY PERSONNEL:

Robert J. Ellestad, President

NATURE OF BUSINESS:

Home Ticket Network provides technology and services for entertainment ticketing and marketing.

COMPANY PROFILE:

Year Established: 1991
Private Company
Number of Employees: 4
Annual Revenues: $ <1 million (1995)

Offices: Home Ticket Network is located in Calgary, Alberta.

Key Customers:

- Calgary Convention Centre
- Calgary Philharmonic Orchestra
- Theatre Calgary

COMPANY BACKGROUND AND HISTORY:

Home Ticket Network began developing database financial management systems and direct marketing systems over ten years ago. This lead to involvement with major performing arts organizations and to the subsequent study and design of applications to address what were perceived as major deficiencies and inconveniences in the ticketing industry. Home Ticket Network has since developed a powerful transactional server, the *Network Reservation Server*, a unique and strategic component for building large scale reservation networks.

BUSINESS AND PRODUCT DESCRIPTION:

Home Ticket Network is focused on the business of establishing a seamless network connecting ticket vendors to consumers via the public telephone system, the Internet, banking automated teller networks

(ATMs), kiosks, and emerging interactive cable TV systems.

HTN's products emphasize a highly scaleable, open systems philosophy, featuring a client-server architecture and an inherent ability to interconnect with outside networks of all types. All of the company's products are UNIX-based, and make use of Unify Corporation's powerful relational database products. The software products encompass a wide range of applications that work collectively as an integrated reservation system, or as individual components, such as credit card processing or financial accounting. Development of the Home Ticket Network products represents a total of approximately 20 man years, and one million lines of C code.

Strategic Products:

- *Network Reservation Server (NRS)* - the workhorse and major building block for HTN's reservation system, *NRS* accepts authorized requests and enquiries from network clients who want to check seating availability, book seats, update accounts etc. *NRS* platforms can be interconnected to improve performance as demand increases, providing an easy expansion path for regional and national network development.
- *Automated Telephone and Reservation Server* - a software/hardware combination providing automated telephone call processing, event information and ordering services. This system can be installed in remote locations to answer phone calls, thereby eliminating long distance charges. It is capable of operating standalone during network outages and is an excellent platform for offering "900" based, telephone reservation services.
- *NRS Toolkit* - a programming library that enables PCs, Macintoshes, kiosks, Internet and cable TV networks to interface to the *Network Reservation Server* over a local or wide area network. *NRS Toolkit* speeds development of new client applications, since all of the underlying network communications and protocol handling is already provided.
- *NRS Graphics Server* - this system creates current seating availability graphic images in response to requests from Internet Web viewers or interactive cable TV. The *NRS Graphics Server* is currently in development and should be available Q2 1996.
- *HTN Box Office* - provides for Season Ticket Management, Single Ticket Sales, Event and Subscriber Administration, Pricing and Venue Management.
- *Direct Marketing System* - analyzes the effectiveness of season ticket campaigns, advertising, or promotions. Provides a special database list generator that allows targeted mailing lists to be created easily, even when the selection criteria is very complex (e.g. "all single ticket buyers in the past three years who are not current subscribers, and who attended our season opening gala dinner").
- *Financial Management System* - General Ledger, Accounts Receivable, Accounts Payable, and a Report Writer, fully integrated with *Box Office* and *Direct Marketing.*

Supporting Products:

- *Venue Graphics Model Builder* - creates the colour graphics seating models used for display on workstations, kiosks, Internet, cable TV.
- *VMX Credit Card Authorizer* - credit card authorization and draft deposit services strong market potential as a companion for Internet Web servers.

Related Products:

- *Fund Raising* (performing arts clients)
- *Membership Management*
- *Commission Plan Management System* (manages any form of commission-based compensation programs, including multi-level; useful for telemarketing campaign management)

INFORMATION HIGHWAY

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Software products include:

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STRATEGIC RELATIONSHIPS:

Home Ticket Network is in the process of evaluating strategic alliances with cable TV, entertainment and telecommunications organizations. The company will soon announce an alliance with a major distributor of theatre management systems to provide automated telephone reservation services.

INTERNATIONAL PARTNERING INTERESTS:

Home Ticket Network's market development is targeted towards North American performing arts companies, sports teams, and movie theatre chains. Home Ticket Network is particularly interested in partnering relationships with:

- cable TV providers
- entertainment production and management companies - e.g. theatres, sports complexes
- Internet services providers interested in launching new services

- software vendors selling products that are complimentary to HTN's software
- telephone service providers

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Home Ticket Network's market development is targeted towards North American performing arts companies, sports teams, and movie theatre chains. Reserved seating movie theatre opportunities are being explored in Europe.

HYMARC LTD.

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Canada
K2E 8A5

KEY PERSONNEL:

Forrest Livingstone, President
or Ted McClelland, Vice President
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Fax: (613) 727-0441
E-mail: FORREST@HYMARC.COM

NATURE OF BUSINESS:

Manufacturer of 3D vision systems, in particular, "colorscan" for digitizing objects with high resolution, non-contact laser-based camera.

COMPANY PROFILE:

Private
Year Established: 1984
Number Of Employees: 22
Annual Revenues: $2.5 million (Cdn)
AllianceText~Strategic Alliances: ARTIST
CompOverviewText: Key Customers: museums, automotive, aerospace

COMPANY HISTORY:

Hymarc has been developing 3D vision sensors since 1988. The main product , HYSCAN, has been sold to the major automotive and aerospace companies around the world for digitizing and inspection. Other products are: PCBSCAN for circuit board inspection, BODYSCAN for digitizing the human body and COLORSCAN for 3D color images.

INFORMATION HIGHWAY:

Geographic independent access to museums (AMUSE): Hymarc is developing a system to digitize, transmit and interactively display in colour, three-dimensional virtual models of physical objects. The technology will be introduced in the context of a virtual museum, artifacts will be digitized and transferred over the network, providing the ability to examine and interact with a museum collection in 3D.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Japan and Europe
Potential Partners: content developers; network products and services; software; computer and hardware; and multimedia.
Type of Alliance Sought: co-development of product or technology; joint marketing or sales alliance; venture capital/investment; and/or a permanent alliance arrangement with minority or majority change in ownership. Specifically seeking partners in animation to do 3D imaging over the Internet; also interested in partnerships with museums or with companies that are associated with museums.

IMATEX COMMUNICATIONS

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E-mail: imatex@cam.org

KEY PERSONNEL:

Alain Janelle- President and CEO
Pierre Pouliot - Vice President Marketing

NATURE OF BUSINESS:

Imatex Communications designs, markets and supports telecommunication applications and products for Interactive Services and Data Broadcasting.

COMPANY PROFILE:

Year Established: 1985
Private Company
Number of Employees: 12
Annual Revenues: $ 0.7 million

Key Customers:

- American Airlines (US)
- Bell Canada (Canada)
- Citizens National Bank (South Korea)
- Dongsuh Securities (South Korea)
- Environment Canada (Canada)
- Le Groupe Vidéotron Ltee (Videoway) (Canada)
- Lin Broadcasting (US)
- Linestel Corp. (Thailand)
- Montreal Stock Exchange (Canada)
- Smart Pay (US)
- State of Hawaii (US)

COMPANY BACKGROUND AND HISTORY:

Established ten years ago, from a core of NAPLPS "videotex" experts, Imatex Communications is fast becoming the leading supplier of access points, gateways and servers for the interactive services industry. The Imatex *Image Creation System* designed, created and marketed by Imatex, is internationally recognized for its ease of use and rapid application development (RAD) capabilities that allow users to create graphics, text and images for interactive services.

Since the convergence of networks towards other forms of wireless telecommunications, Imatex has developed and successfully marketed data broadcasting applications using the vertical blanking intervals (VBI) of a TV broadcast signal. In addition to its product sales, Imatex also offers a complete range of professional services including system integration, training, design of customized communication interfaces, video display systems and turn-key solutions.

BUSINESS AND PRODUCT DESCRIPTION:

Imatex aims to contribute positively to the evolution of the interactive communications industry and to offer products and services of the highest quality. Compatible with international standards and available in many countries, all Imatex products are guaranteed by a support program based on first class customer service and continuous products enhancement.

Products for Interactive Services:

Imatex offers a complete range of products for the development and delivery of value-added interactive services. Based on the UNIX and VAX/VMS operating systems, the Imatex *Server* is a high performance development platform for a wide variety of applications including home banking, services for public videotex networks and inter-enterprise applications.

The frame creation and service authoring *ICS* (Image Creation System) is a productivity tool that complements the development environment of the Imatex *Server*. This full-featured NAPLPS graphic creation system with video capture capabilities, also supports the Korean and Thai character sets.

The Imatex *VAP/GATEWAY* is a flexible networking solution for building a network of distributed interactive services using wide area networks and telephone networks. Users from different locations with different terminal types can access multiple services through a single controlling *VAP/GATEWAY*.

VBI Data Broadcasting Products:

Imatex offers a line of VBI data broadcasting products which are fully compliant with NABTS, thus ensuring a flexible data format, a broad addressing capability, and built-in sophisticated forward error correction.

Transmission of weather radar images over the VBI bandwidth is now a reality with *VBIRAD*. This product enables TV broadcasters to transmit to local or national subscribers up-to-date weather radar images on a continuous basis. *VBIRAD*'s many features include:

- the ability to insert image and text overlays with weather information;
- file transfer;
- full addressability of receiving modules; and
- scheduled transmission of cues.

VBI Photo Express provides point-to-multipoint distribution of color photo images over the VBI bandwidth. With *VBI Photo Express*, high resolution color images can be received without human intervention.

The *VBI Traffic Display* system transmits and displays in real-time, road traffic images from video sources located at main roads, thus providing local interest information to suburban commuters.

Video Display Systems:

Building upon its expertise in image creation and distribution systems, Imatex has designed large-scale *Video Display Systems* for convention centers and other public facilities. The *Video Display Systems* address the need for managing and transmitting information (such as direction instructions, event descriptions and advertising) to multiple RGB or NTSC monitors, each of which are independently driven.

Integrated Solutions:

Imatex offers a complete range of professional services including the design and development of special communications interfaces, systems integration and training. The open architecture of Imatex's products facilitates system integration on multiple platforms, thereby providing customers with affordable and efficient solutions.

INFORMATION HIGHWAY

Products for Interactive Services:

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DEVELOPMENT ACTIVITIES:

The current research and development efforts at Imatex include support for video compression in interactive network services using variable bandwidths.

STRATEGIC RELATIONSHIPS:

- *GPT Communications Systems Limited* - this UK-based supplier of communications products, jointly owned by General Electric Co. (UK) and Siemens (Germany), sub-contracts to Imatex for application-driven network, videotex and telecommunications solutions.
- *Norpak Corporation* - in June 1993, Imatex and Norpak entered into a co-operative agreement to jointly develop and market a "vertical blanking intervals" (VBI) weather radar system for TV broadcasters. In near real-time, the system captures the current radar image, compresses and encodes it for transmission. The information can then be transmitted point-to-multipoint using VBI data broadcasting technology. Imatex is researching other applications that will use this core technology.
- *Pixel System Co. Limited* - is an authorized value-added reseller for the Imatex interactive services product line. The collaboration with Pixel has already provided major Korean banks with the flexibility and performance of Imatex *Server* and *Gateway* applications.
- *Sam-Negma Inc.* - since 1991, SNI has acted as Imatex's commercial agent representative for the Asia/Pacific markets. During 1995-96 Sam-Negma Inc. will be introducing Imatex applications in China and Thailand.

INTERNATIONAL PARTNERING INTERESTS:

Imatex is actively seeking well established international partners interested in reselling and supporting its products and services.

Imatex's system integration expertise coupled with strong experience in technology transfer, will enable prospective partners to achieve prominent success in this competitive marketplace.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

In North America, Imatex sells its products and services primarily on a direct basis and through strategic partners. Marketing activities include participating at the NAB (National Association of Broadcasters) and ISA (Interactive Services Association) exhibitions and in local trade shows.

In the Asian and Pacific Rim countries (e.g. Singapore, Malaysia), Imatex markets its solutions through the sales activities of VARs and commercial agents. Imatex is currently establishing working relationships in Korea and Thailand, and are seeking to expand activities in Asia, particularly China and India.

INFORMATION SCIENCES GROUP INC.

150 Dufferin Ave., Suite 705
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Canada
N6A 5N6

KEY PERSONNEL:

Brad Jones - President
Telephone: (519) 679-2543
Fax: (519) 679-2301

NATURE OF BUSINESS:

The company has developed a wide-area network communications and software applications platform. Information Sciences Group Inc. works with content providers who wish to use this technology to created high end custom value-added networks.

COMPANY PROFILE:

Private
Year Established: 1987
Number of Employees: 8
Annual Sales: $750,000 (Cdn)
Strategic Alliance: Open Text, Versant Object Technology Corp.
Key Customers: Statistics Canada, International Banks

COMPANY HISTORY:

Information Sciences Group Inc. is a private corporation founded eight years ago in London, Ontario, Canada. The company spent five years developing its wide-area network operating system (WAN/OS) technology to dramatically enhance end-user performance over any data communications network especially where available bandwidth is limited (e.g. PDN's and the Internet).

INFORMATION HIGHWAY:

The company has two services created to date using its high performance WAN/OS technology: "STATSCAN ONLINE" for Statistics Canada and "THE HEALTH AND SAFETY NETWORK (HSNET) for National Data Networks. Both services can be accessed from PDN's (X-25) and/or the Internet

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Japan and Europe
Potential Partners: Content developers; network products and services; and cable companies
Type of Alliance Sought: co-development of a product or technology; joint marketing/sales alliance in a targeted geographic area; and/or licensing arrangement in a targeted market.

INGENIA COMMUNICATIONS CORPORATION

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KEY PERSONNEL:

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Tyler Burns, VP Marketing/Sales
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karen@ingenia.com
E-mail: tburns@ingenia.com

NATURE OF BUSINESS:

Ingenia Communications Corporation is a networking solutions company. Ingenia provides a comprehensive portfolio of Internet and networking services including: network design and security; systems management; consulting, distance education, information management and distribution applications.

COMPANY PROFILE:

Private
Year Established: 1993
Number of Employees: 50
Annual Sales: $3 million (Cdn)
Strategic Alliances: SUN Microsystems, ORACLE Canada Corp.
Key Customers: Industry Canada, Stentor, Newbridge Networks Corp., Human Resources Development Canada, House of Commons, Ontario Government

Company History:

Ingenia developed the highly successful SchoolNet project for Industry Canada in 1993. In 1994, Ingenia expanded its project base by securing network design and development projects with the House of Commons and Newbridge Networks Corp. In 1994/95, Ingenia secured key applications development contracts with the Ontario government, Human Resources Development Canada and Industry Canada.

INFORMATION HIGHWAY PRODUCTS

Ingenia provides consulting services in the areas of network design and security; advanced Internet applications development including databases; Java etc. In the future Ingenia will also be developing marketable products and packaged services in these areas.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Market: Canada, United States, Japan, Europe
Potential Partners: network product/services; software; computer and hardware
Type of Alliance Sought: network product/services; software; telecommunications; and systems integration.

ISOTRO NETWORK MANAGEMENT INC.

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E-mail: info@isotro.ca
WWW: http://www.isotro.ca

KEY PERSONNEL:

Rod Anderson - President and Director of Sales
Ian Hamilton - Director of Product Development
Tony Farrow - Director of Professional Services
Mark Gaudet - Director of Marketing

NATURE OF BUSINESS:

ISOTRO Network Management provides integrated product and service solutions for enterprise network engineering, operations, management and security.

COMPANY PROFILE:

Year Established: 1990
Private Company
Number of Employees: 15

Offices: ISOTRO's sales and software development activities are carried out in Ottawa, Ontario.

Key Customers:

- Department of National Defence
- Department of Foreign Affairs and International Trade Canada
- Houston Independent School District
- Human Resource and Development Canada
- Progressive Insurance
- Public Works and Government Services Canada
- Rogers Communications
- Royal Canadian Mounted Police
- SHL System House Ltd.
- Stentor
- Texas Department of Information Resources

COMPANY BACKGROUND AND HISTORY:

ISOTRO Network Management was established in 1990 to deliver internetwork architecture and design services. Since then, the professional services group has expanded to provide the following key services to organizations with enterprise networks:

- Internetwork Design, Implementation and Operations;
- Integrated Network Management; and
- Network Security.

ISOTRO's extensive background and experience in enterprise networks and the Internet enables it to deliver comprehensive and integrated solutions.

In 1993, ISOTRO was given the task of solving a crucial problem facing one of its customers, i.e. tracking IP addresses and network identifiers for a network that had expanded to thousands of hosts. Working closely with the customer, ISOTRO solved this problem with a custom developed client/server application. Realizing that tracking network identifiers was a universal problem facing network administrators, the development was extended which resulted in the release of *NetID* as a commercial product in 1994. Market response has been extremely positive.

BUSINESS AND PRODUCT DESCRIPTION:

Products:

ISOTRO is committed to providing innovative network management products that solve real problems found in managing large enterprise networks. ISOTRO's first product, *NetID*, solves address and name space management problems.

NetID is a client/server database application for automating the design and administration of IP address and domain name space in medium to large sized enterprise networks. *NetID* has many advanced features including:

- IP Addresses - support for multiple Class A,B and C networks as well as Variable Length Subnet Masks helps to administer IP addresses in the most complex environments.
- Interior Gateway Protocols - *NetID* helps to effectively manage address space in conjunction with OSPF and EIGRP Interior Gateway Routing Protocols. VLSM partitioning features simplify design while OSPF Area management features track OSPF Areas and generate Area List summaries.
- Distributed Management and Access Control - Multiple administrators can concurrently manage enterprise identifier space. User privileges control access to the database on a per network, subnet or sub-domain basis.
- Domain Name System - The automatic generation of configuration files eliminates the need to understand the complexities of DNS.
- Custom Fields - *NetID* can be customized to any environment with user-defined fields that track information against IP addresses or domain hierarchies.
- Import - Existing network information can be quickly loaded into *NetID* from either DNS zone information files or host files.
- Export - *NetID's* export features automatically generate DNS configuration files and UNIX host files. In addition, custom exporting produces output in any format for reporting or population of other network identifier databases.

Services:

Enterprise Networks

Comprised of routers, switches, frame relay, LANs, ATM, and high speed serial links, an enterprise network is the foundation upon which multi-vendor, peer-to-peer and client/server communications take place. ISOTRO provides clients with full life cycle support beginning with the definition of enterprise network requirements through to day-to-day operations.

Network Security

Distributed computing environments present a security challenge to the enterprise, i.e. identifying the whereabouts of and protecting sensitive information assets. Connecting to external networks such as the Internet dramatically increases an organization's exposure to attacks on information assets. ISOTRO provides a range of services which enable organizations to effectively manage the risk associated with distributed multi-user systems and connectivity to external networks.

Integrated Management Environment

An integrated management environment includes problem, change, performance, configuration, distributed services, and security management, all under a single, integrated umbrella and interacting with a common data set of network information. ISOTRO provides clients with full network management life cycle support, beginning with the definition of enterprise network management requirements through to the integration into day to day operations.

INFORMATION HIGHWAY

ISOTRO is committed to providing innovative network management products that solve real problems found in managing large enterprise networks. ISOTRO's first product, *NetID*, solves address and name space management problems.

NetID is a client/server database application for automating the design and administration of IP address and domain name space in medium to large sized enterprise networks. *NetID* has many advanced features including:

- IP Addresses - support for multiple Class A,B and C networks as well as Variable Length Subnet Masks helps to administer IP addresses in the most complex environments.
- Interior Gateway Protocols - *NetID* helps to effectively manage address space in conjunction with OSPF and EIGRP Interior Gateway Routing Protocols. VLSM partitioning features simplify design while OSPF Area management features track OSPF Areas and generate Area List summaries.
- Distributed Management and Access Control - Multiple administrators can concurrently manage enterprise identifier space. User privileges control access to the database on a per network, subnet or sub-domain basis.
- Domain Name System - The automatic generation of configuration files eliminates the need to understand the complexities of DNS.
- Custom Fields - *NetID* can be customized to any environment with user-defined fields that track information against IP addresses or domain hierarchies.
- Import - Existing network information can be quickly loaded into *NetID* from either DNS zone information files or host files.
- Export - *NetID's* export features automatically generate DNS configuration files and UNIX host files. In addition, custom exporting produces output in any format for reporting or population of other network identifier databases.

DEVELOPMENT ACTIVITIES:

ISOTRO plans to expand the functionality of *NetID* and increase its ability to be integrated into existing network management platforms. Features under development include:

- UNIX Platform - Sparc/SunOS with OpenWindows/ Motif and HP 700/HP-UX with X11/Motif
- Software Link with HP Openview and SunNet Manager - integrates *NetID* into existing network

management platforms.

- DNS Gateway - enables names servers to interact directly with the *NetID* database.
- Bootp/DHCP Gateway - allows Bootp and Dynamic Host Configuration Protocol (DHCP) servers to interface directly to the *NetID* database.

INTERNATIONAL PARTNERING INTERESTS:

ISOTRO is interested in identifying international resellers for *NetID*. Partnering prospects include:

- internetwork design consultants
- system integrators
- value-added resellers

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

ISOTRO sells its products and services on a direct basis from its Ottawa office. ISOTRO is currently developing a reseller program for *NetID* that is aimed at developing relationships with strong value-added resellers and system integrators in Europe, North America, and the Pacific Rim.

JADE SIMULATIONS INTERNATIONAL CORPORATION

1422 Kensington Road N.W., 3rd floor
Calgary, Alberta
Canada T2N 3P9

CONTACT:

• Kletke, President/	S. Black, Dir. Marketing/	S. Maryka, Dir. Engineering
Tel: (403) 974-0441	(604) 878-1171	(403) 974-0407
Fax: (403) 283-3041	(604) 945-9707	(403) 283-3041

NATURE OF BUSINESS:

Jade provides advanced simulation and modeling software products and services to systems engineers and operations managers for use in planning and designing complex telecommunication systems and networks. Jade has supplied major telecommunications companies in North America with simulation software that allows them to evaluate multi-million dollar capital purchases and to prevent major service disruptions caused by severe network malfunctions. Using Jade's simulations, telcos forecast system loads, evaluate expansion plans and optimize system performance.

CORPORATE PROFILE:

Private
Established: 1988
Number of Employees: 8
Annual Revenues: private
Strategic Alliances: CANARIE Inc.
Key Customers: Stentor Resource Centre Inc., AT&T, Southern New England Telephone Co., AGT Ltd., Newbridge Networks.

COMPANY HISTORY:

Established in1988, Jade is a private company with its head office in Calgary, Alberta. The company was a spin-off form the University of Calgary, with early technical developments rooted in the research activities of the Department of Computer Science. For over eight years Jade has been active in the development of high performance simulation software tools and applications. Software products and services have been successfully marketed to the military, telecommunication, transportation and electronic computer-aided design markets in North America and Europe. Over the past two years, the company has focused its development and marketing efforts on the telecommunications industry.

INFORMATION HIGHWAY PRODUCTS:

Jade currently has two commercial simulation products in use by local and inter-exchange companies in Canada and the U.S. These simulation products include: the Trunk Network Model (TNM), a call-by-call simulation of the public telephone switching network, and the SS7 Model, a message-based simulation of the Signaling System No.7. Applications for these products include network design and analysis, network

management training, and pre-plan development.

With the support of CANARIE Inc., Jade is developing a network simulation software product that supports the design, analysis and performance tuning of broadband applications and ATM networks. Internally know as "BANDIT" (Broadband Applications and Network Design Testbed), the product will be marketed to network providers and broadband applications developers.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: United States, Japan, Europe
Potential Partners: content developers, network products and service providers.
Type of Alliance Sought: seeking a joint venture/partner or merger with a with minority or majority change in ownership. Ideally, a partner will be targeting the same customers and/or have complementary product lines. A well established sales and market distribution would also be preferred.

LINEAR SYSTEMS LTD.

959 Powell Avenue
Winnipeg, Manitoba
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R3H 0H4

Telephone: (204) 632-4300
Fax: (204) 697-2417
E-mail: info@linsys.mb.ca

KEY PERSONNEL:

Tom Thorsteinson - President
George Cosens - Chief Engineer

NATURE OF BUSINESS:

Linear Systems Ltd. is a developer and manufacturer of network communications products, including both software and hardware, for ISA Bus-based computers.

COMPANY PROFILE:

Year Established: 1979
Private Company
Number of Employees: 10
Annual Sales: $ 0.75 million (1994)

Offices: Linear System's head office is located in Winnipeg, Manitoba.

Key Customers:
- AT&T
- Dictaphone
- Dow Jones Telerate
- Honeywell
- Semiconductor Systems
- State Farm
- USA Video

COMPANY BACKGROUND AND HISTORY:

Linear Systems Ltd. was formed in 1979 to provide computer and instrument design services for the Potash industry in Canada. In 1980, Linear used Multibus computers for industrial control applications and as a result developed a line of specialized iSBX modules. In 1983, Linear started marketing iSBX products in the US through Computer Modules, Inc. of Santa Clara, California.

In 1985, Linear developed a synchronous communication card for the PC. This marked the company's first move to develop communications products. Since then, Linear has developed a line of Synchronous communications cards for ISA Bus-based computers and has become a data and telecommunications-oriented company. Linear makes important marketing and product development decisions with input from

Computer Modules regarding the US market.

BUSINESS AND PRODUCT DESCRIPTION:

Linear develops and manufactures its products at its plant in Winnipeg,. Canada. Both manufacturing and product development follow procedures which conform to ISO 9001 guidelines. ISO registration is expected to be complete by July of 1995.

Linear's products and services include:

SBX modules - calendar clocks, battery backed memory, two and four channel serial communications, serial/parallel interface and custom modules

ISA Bus Computer Cards and Software -

- *Turbodisc* - 2MB to 48MB semiconductor hard disk with battery back-up
- *Quad LPT* - four PC/AT parallel ports on one card
- *MAX I/O* - serial/parallel adapter board giving 4 serial (16550 compatible) and 4 parallel ports
- *LPC Serial/2A* - serial multiprotocol communications card with RS-422, RS-232 and RS-485 options for HDLC, SDLC, and X.25
- *Canlink* - HDLC Lap B driver software for DOS
- *Modem Pump (MP) 232, MP 530, MP V35, MP V35/2C* - serial multiprotocol communications cards with two channels of RS-232, EIA-530, V.35 interfaces for Fractional T1, HDLC/SDLC, X.25 communications.
- *T1 Master* - high speed multiprotocol serial communications card for data rates to 5 Mbps. Used for T1/E1 rate interfaces, microwave links, satellite communications. NDIS 2.0/3.0 ODI Client/Server and Packet Driver software available. Ideal for high speed point-to-point file transfer, MPEG compressed video, bridge or Internet T1 node.

Custom Design Services

Linear Systems Ltd. has a staff of professional engineers who can provide custom engineering services to modify standard products for OEM applications. Linear can design custom hardware and software for customer applications.

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Custom Design Services

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DEVELOPMENT ACTIVITIES:

Linear Systems is currently developing a PCI-bus version of its T1 Master product as well as a CSU/DSU module.

STRATEGIC RELATIONSHIPS:

- Computer Modules Inc. (US) - Computer Modules, based in Santa Clara, California, is the exclusive representative of Linear Systems in the United States.

INTERNATIONAL PARTNERING INTERESTS:

Linear Systems Ltd. sells products on a direct basis in all countries except the US. Linear's products are sold in the US by Computer Modules, Inc. of Santa Clara, California. Linear is looking for companies who wish to market communications products and who can provide technical sales support. Linear is also interested in joint venture projects relating to data and telecommunications over T1/E1, JPEG and MPEG compressed video, and Internet access.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Linear Systems Ltd. sells products on a direct basis in all countries except the US. Linear's products are sold in the US by Computer Modules, Inc. of Santa Clara, California. Linear is looking for companies who wish to market communications products and who can provide technical sales support. Linear is also interested in joint venture projects relating to data and telecommunications over T1/E1, JPEG and MPEG compressed video, and Internet access.

LMSOFT INC.

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WWW: http://geoserver.lmsoft.ca

KEY PERSONNEL:

Luc Michaud, President
Richard Goulet, Project Manager

NATURE OF BUSINESS:

LMSOFT (formerly Luc Michaud, Économiste Conseil Logiciels experts) develops and sells software, mostly for educational use and is a specialist in Earth Science. LMSOFT produces multimedia applications, authoring software (*Hyper Page*) and information highway communication software (*GEOSCOPE Network*).

COMPANY PROFILE:

Year Established:1974
Private Company
Number of Employees: 12
Annual Revenues: $ 700,000 (1994)

Offices: LMSOFT's head office is located in Outremont, Quebec. A European office is located in Montpellier, France.

Key Customers:

- Canada Space Camp
- Electricité de France
- Government of Canada
- Government of Québec
- HYDRO-QUÉBEQ
- Laboratoire de Santé Public du Québec
- La Maison de la Géographie (France)
- Ministère de l'Éducation du Québec
- Ministère de l'éducation nationale (France)
- City of Montréal

COMPANY BACKGROUND AND HISTORY:

LMSOFT started in 1974 as an economic consulting office, under the name Luc Michaud, Économiste Conseil Ltée. As more and more computer assistance was provided, either to help clients extract data from databases or by illustrating the results (mostly on geographical maps), a software development department evolved.

'Logiciels experts' was then added to the company name, and the company became involved in the development of geographic technologies. The company was asked later to develop an educational map editing tool called *GEO-PRO* for the Quebec Ministry of Education. Since then LMSOFT Inc. has continued to expand its software development activities, emphasising its expertise in hypermedia, geomatics and most recently the Internet-based delivery of applications.

BUSINESS AND PRODUCT DESCRIPTION:

LMSOFT has three departments: software development, multimedia production and economic studies. The *software development division*, active for more than ten years, has produced many successful educational software products, including:

- *GEO-PRO*, map editing software - one of its first products, *GEO-PRO* used a graphical interface entirely developed by LMSOFT, as very few schools in Quebec (even in Canada) at the time used Windows;
- *EXPLORATEUR*, a hypermedia authoring software product that includes questionnaire facilities;
- *ECONOMY SIMULATOR*, that allows students to manipulate the levers of the economy and then see the results;
- *GEOSCOPE*, the Interactive Global Change Encyclopaedia - because of its geomatic and hypermedia technologies, LMSOFT was chosen by the Canadian Space Agency in 1990 to develop an encyclopaedia product that would be the Canadian contribution to the International Space Year (1992). This product, now called *GEOSCOPE,* uses data from five space agencies around the world and contains fifteen years of data (mostly satellite images). Delivered on two CD-ROMs, *GEOSCOPE* is distributed by LMSOFT;
- *GEOSCOPE Red*, *Green* and *Blue* - an MS Windows version of *GEOSCOPE,* on 3 separate CD-ROMs, where subjects are grouped into three categories: Catastrophes (Red), Vegetation (Green) and Ocean and Ice (Blue).
- *HYPERPAGE*, a new, intuitive and easy-to-use multimedia authoring system in Windows that requires no programming language and may use a document that is located anywhere on the Internet. Documents can include text, photos, drawings, animations, video, or sound.
- *GEOSCOPE Network* - a Windows-based, client/server system designed for geographic data (satellite images, socio-economic data, vector products). It allow users to obtain spatial data through the Internet directly from distributors.

Mainly using *HYPERPAGE*, LMSOFT's *multimedia production division* produces multimedia titles and interactive stations. One of these interactive stations, installed at the Canada Space Camp in Laval, Quebec, won the Gold CD-ROM award at the 1995 Marché International du Multimedia of Montreal (MIM 95).

INFORMATION HIGHWAY

Founded as an economic consulting firm in 1974, LMSOFT has since expanded into educational software development, emphasizing hypermedia, geomatics and most recently the Internet-based delivery of applications.

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- *ECONOMY SIMULATOR*, that allows students to manipulate the levers of the economy and then see the results;

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- *HYPERPAGE*, a new, intuitive and easy-to-use multimedia authoring system in Windows that requires no programming language and may use a document that is located anywhere on the Internet. Documents can include text, photos, drawings, animations, video, or sound.

LMSOFT's *multimedia production division,* uses the company's *HYPERPAGE* authoring software to produce multimedia titles and interactive stations.

DEVELOPMENT ACTIVITIES:

Aware that data placed on a CD-ROM can become obsolete rapidly, LMSOFT initiated a project in 1993 to develop *GEOSCOPE Network*, a version of *GEOSCOPE* that uses the Information Highway to ensure that users get the most up-to-date information available, directly from spatial data distributors. *GEOSCOPE Network* is a Windows-based, client/server system designed for geographic data (e.g. satellite images, socio-economic data, vector products etc.). It allow users to obtain spatial data through the Internet directly from distributors.

The development phase for *GEOSCOPE Network* is finished and a prototype is now being tested. Phase II of the project consists of implementing servers at distributors' locations and creating a network specialized in georeferenced data. To date, the response of the georeferenced data industry to this project has been very enthusiastic.

STRATEGIC RELATIONSHIPS:

- *Direction générale des ressources didactiques of the Ministére de l'Éducation du Québec* - LMSOFT's partner for over ten years, with educational software production.
- *Canadian Space Agency* and *Canada Centre for Remote Sensing* - partner in the development of *GEOSCOPE*, the Interactive Global Change Encyclopaedia that was the Canadian contribution to the International Space Year (1992).

LMSOFT's partners for the production of *GEOSCOPE Network* are :

- *NASA*
- *Ministère des Ressources Naturelle du Québec*
- *Géomatique Canada*
- *Direction générale des ressources didactiques (MEQ)*
- *Addison-Wesley Publishers Limited*
- *Universities Space Researche Association*
- *Centre National de Documentation Pédagogique* (France)
- *Réseau d'etude des Changements dans les Localisations et les Unités Spatiales* (France)
- *Université Laval*
- *Centre de développement de la géomatique*

INTERNATIONAL PARTNERING INTERESTS:

LMSOFT is interested in a variety of international partners including:

- geomatics partners interested in including LMSOFT's geo-catalog technology in their software or using GEOSCOPE to distribute their data
- developers, resellers, and end user clients to help establish the *HYPERPAGE* multimedia authoring tool for the Internet as a standard PC product.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

LMSOFT's markets are as varied as its products. Educational software materials and multimedia titles are sold mainly to schools and the general public. Interactive stations are sold to museums. The server part of *GEOSCOPE Network* is designed for geographical data distributors like NASA, Ministère des ressources naturelles du Québec, La maison de la géographie (France) etc. In addition, LMSOFT has relationships with other clients in United States and Europe.

LMSOFT is interested in a variety of international partners including:

- geomatics partners interested in including LMSOFT's geo-catalog technology in their software or using GEOSCOPE to distribute their data
- developers, resellers, and end user clients to help establish the *HYPERPAGE* multimedia authoring tool for the Internet as a standard PC products.

MARQUE D'OR

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E-mail: 75030.2257@Compuserve.com

KEY PERSONNEL:

James Smith - Chief Executive Officer
David Saltzman - President of the Board of Directors
Bryan Haley - Director of Computer Services

NATURE OF BUSINESS:

Marque d'Or is a search house providing technical support, mainly to the legal sector, with respect to the practice of corporate/commercial law. Since 1991, Marque d'Or has been involved in a research and development project, the goals of which are to computerize name and trade-mark searches, to automate a number of commercial law documents and contracts and to render these services more accessible and efficient.

COMPANY PROFILE:

*Year Estab*lished: 1962
Private Company
Number of Employees: 71
Annual Sales: $ 5 million (1994)

Offices: Marque d'Or's offices are located in Montreal.

Key Customers:
Marque d'Or's clientele is chiefly made up of law firms. Major accounts include:

- Heenan Blaikie
- Lapointe Rosenstein
- Lavery deBilly
- Martineau Walker
- Ogilvy Renault
- Stikeman Elliott

COMPANY BACKGROUND AND HISTORY:

Marque d'Or can trace its history back to 1929 when W.D. Armstrong, a company specializing in the supply of corporate stamps and seals, was founded. During the 1960's and 1970's, W.D. Armstrong expanded its range of products to other legal supplies. In 1979, it added corporate name searches to its services and, in 1982, W.D. Armstrong merged with the Centre d'Études Juridiques (C.E.J.) which provided computerized corporate services.

BUSINESS AND PRODUCT DESCRIPTION:

Marque d'Or's mission is to provide technical support to corporate/commercial law practitioners in Canada by conducting name and trade-mark searches and by offering an ever-increasing range of diverse services, some of which are provided on an exclusive basis to legal professionals. Marque d'Or's principal services revolve around name searches, corporate information services, the verification and filing of documents, computerized corporate services, minute books and other legal supplies as well as movable hypothecs (personal property security).

Name Searches

The duty to find an original name lies with the business in question or with legal counsel representing it. This implies that the proposed name must be compared with other existing names before it may be used. Marque d'Or currently conducts such searches and will soon broaden its services to include trade-mark searches.

Corporate Information

Upon request, Marque d'Or will transmit all information on a company which is available from the government, such as the jurisdiction in which it is incorporated, its date of incorporation, its corporate name, etc. It will also obtain for its clients certified copies of the certificates of incorporation and other government documents.

Verification and Filing of Documents

After pick-up from the client's offices of the articles of incorporation and notices to be filed with the Inspector General or the Director, Marque d'Or verifies the documents in order to detect any error likely to delay their filing.

Computerized Corporate Services

These services essentially focus on the incorporation of a company and the drafting of its organizational proceedings. Marque d'Or also sells shelf (i.e., pre-incorporated) companies and is able to provide full-range updating services, from the incorporation to the dissolution of a company.

Minute Books and Supplies

Marque d'Or provides minute books, forms and standard legal documents, seals and other legal supplies.

Movable Hypothecs

Together with CCNS Canada, Marque d'Or, through CCNS Quebec, offers movable hypothec (personal property security) registrations as well as related computerized search services.

On-Line Information and Technical Support Centre

Marque d'Or's goal is to establish an information and technical support centre with respect to the practice of corporate/commercial law in Canada. This centre will be available on the information highway as a World Wide Web site and geared mainly towards users who are legal professionals or aspire to become professionals. Thanks to its intelligent bi-directional communication features, the system will allow transactions to be carried out in conjunction with the client. Thus, name and trade-mark searches in Canada will be conducted on the basis of phonetic equivalencies with the help of a knowledge-based system. Marque d'Or will also provide information in this field and a bulletin board which will enable exchanges with users.

INFORMATION HIGHWAY

Marque d'Or is a search house providing technical support, mainly to the legal sector, with respect to the practice of corporate/commercial law.

Marque d'Or's goal is to establish an information and technical support centre with respect to the practice of corporate/commercial law in Canada. This centre will be available on the information highway as a World Wide Web site and geared mainly towards users who are legal professionals or aspire to become professionals. Thanks to its intelligent bi-directional communication features, the system will allow transactions to be carried out in conjunction with the client. Thus, name and trade-mark searches in Canada will be conducted on the basis of phonetic equivalencies with the help of a knowledge-based system. Marque d'Or will also provide information in this field and a bulletin board which will enable exchanges with users.

Through real-time access and using simulations, Marque d'Or's system will also be able to be used as a teaching tool, permitting users to familiarize themselves with the mechanics of corporate/ commercial law.

DEVELOPMENT ACTIVITIES:

Several important components are required to be developed in order to bring this project to realization. First of all, "smart agents" have to be sufficiently mastered in order to facilitate the automatic management of the flow of the many messages in a complex hybrid network. The project also includes a section focusing on the dynamic management of business processes, with a view to optimizing their progress and the allocation of resources. Automating name and trade-mark searches requires the development of coding and word comparison algorithms, as well as the adaptation of comparable coding search algorithms in other data banks already available. Providing services with respect to the checking and filing of documents requires the development of a system which is sufficiently flexible so as to take into account all of the variations existing between the businesses to which the documents relate. Furthermore, integrating these functions on the network and allowing direct communication with the governments involved implies a need for data protection mechanisms. Finally, the various modules must be integrated in order to provide each of the broad functions.

STRATEGIC RELATIONSHIPS:

- *CCNS Canada* - together with Marque d'Or, the companies offer movable hypothec services in the Province of Quebec (i.e., services akin to personal property security registrations and searches).

INTERNATIONAL PARTNERING INTERESTS:

Marque d'Or aims to provide its services on an international scale, by laying down procedures for meeting the requirements of various jurisdictions. In addition, services will be accessible from abroad by businesses seeking legal services in the area of corporate/commercial law with respect to the jurisdictions of Quebec or of Canada. Marque d'Or would be interested in communicating with experts in the field of legal information technology and in establishing strategic alliances with businesses having a legal professional client base. Of particular interest to Marque d'Or are companies who would like to join Marque d'Or in developing a comprehensive Internet- based legal information library and business centre.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Historically, Marque d'Or has conducted most of its business within Canada, primarily in Quebec. However, the company aims to provide its automated on-line services on an international scale, by laying down procedures for meeting the requirements of various jurisdictions. Marque d'Or's services will be accessible from abroad by businesses seeking legal services in the area of corporate/commercial law with respect to the jurisdictions of Quebec or of Canada. It would be interested in communicating with experts in the field of legal information technology and in establishing strategic alliances with businesses having a legal professional client base. Of particular interest to Marque d'Or are companies who would like to join the Company in developing a comprehensive Internet- based legal information library and business centre.

MORGAN MEDIA INCORPORATED

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E-mail: gerry@morganmedia.com
WWW: http://morganmedia.com/m2

KEY PERSONNEL:

Mr. Gerry Morgan - President

Bill McDonald - Director of Marketing & Sales~
Mr. Terry Kilshaw - Director of Development
Ms. Janet Morgan - Director of Art
Mr. Bryan Wilson - Director of Finance

NATURE OF BUSINESS:

Morgan Media Inc.specializes in the development of educational software and multimedia for the public school, college, university and corporate-training markets. The company's products have received nine national and international awards for excellence in multimedia production, including the US Software Association Award of Excellence for Morgan Media's *Learner Profile* assessment tool in 1994.

COMPANY PROFILE:

Year Established: 1994
Private Company
Number of Employees: 12
Annual Revenues: $ 1-2 million (1995)

Offices: Morgan Media's main office is in Sidney, BC, near Victoria. Staff are also located in Kelowna, BC.

Key Customers:
- British Columbia Ministry of Education
- British Columbia Ministry of Environment
- National Film Board of Canada
- Royal British Columbia Museum
- White Bear Productions Inc.

BACKGROUND AND HISTORY:

Morgan Media was formed in 1994 through the purchase of an educational research and development organization by Mr. Gerry Morgan, that organization's executive director. With this purchase, Morgan Media gained five years of research and development experience in educational software.

In 1994, Morgan Media had only two employees. However the company has grown quickly and currently has a staff of twelve. Product sales have now reached over $100,000 US per month. and contract revenues for 1995 will exceed $200,000 US.

BUSINESS AND PRODUCT DESCRIPTION:

Morgan Media Inc. specializes in the development of educational software and multimedia for public schools, colleges, universities and corporate training markets. The company's products have received nine national or international awards including the US Software Publishers' Award of Excellence for Morgan Media's Learner Profile assessment tool in 1994.

Examples of Morgan Media's current product development activities include:

- *Learning Links* - a HTML-based tool that allows teachers to search through Ministry of Education documents, approved learning resources and more than 1,000 World Wide Web sites for information that might be brought home and used in a classroom lesson. *Learning Links* provides not only up-to-date resources but it also provides a variety of tools built for teachers, such as lesson plan builders, evaluation templates and tools for resource management. With *Learning Links*, teachers will be able to create their own HTML lesson plans and share them on the World Wide Web with other teachers. The goal is to have every teacher in the province of BC using *Learning Links* before the end of 1996. The product is owned by the Ministry of Education but will be marketed outside the province by Morgan Media.

- *Course Authoring System* - Morgan Media Inc. is launching a major initiative to develop a 'course shell'/ course authoring system for the delivery of courseware to students using a combination of CD-ROM and Internet resources. Using this product, institutions from schools to universities could offer full-scale multimedia courses to students at a fraction of the cost of traditional courses, with none of the standard drawbacks of distance education. Through the application of several proprietary technologies, Morgan Media can offer a course shell that enables authors to rapidly develop full-scale multimedia courses.

Morgan Media's focus on research and development has lead to a series of important innovations in high quality PC-based digital video, automatic resource- acquisition methods and XObject-based Web browsing. The company has been supported in its research by both Apple Computers and Sun Microsystems.

INFORMATION HIGHWAY

Morgan Media believes that the most viable solutions for the needs of interactive education delivery will likely be hybrids - solutions where primary information will be contained in fixed media such as CD-ROM, and new or updated information will be made available through the World Wide Web. Innovations on the Web, such as Virtual Reality Modelling Language (VRML) and Sun Microsystem's Hot Java applets are extremely promising technologies that can strongly influence how people learn new things. Morgan Media believes that through hybrid approaches, education both in Canada and abroad can be personalized, and the cost of delivering education can be greatly reduced.

DEVELOPMENT ACTIVITIES:

Morgan Media Inc. is presently supported by Sun Microsystems to investigate the use of Java and Hot Java in the development of educational titles that are fully Internet capable. The company's researchers are presently studying the use of applets to create new levels on interactivity on the Web. Morgan Media is in the process of developing a CD-ROM product for the Royal BC Museum that will allow direct connection to the

Museum's World Wide Web site from within an application. This will allow students to download new information that is not contained on the CD-ROM. This product is expected to ship (to BC schools) in November 1995.

Morgan Media is in the process of working with the BC Ministry of Education to establish HTML publishing standards for the Ministry. These standards will be made available to the Canadian publishing industry to use should they wish to use the Ministry of Education WWW connection to make teachers aware of the availability of approved products.

Morgan Media has also created a multimedia authoring tool called *M2 Author* which allows non programmers to use multimedia resources on a CD-ROM and then to send the program to another user over Internet. The multimedia program ships without the resources, but reconstructs the multimedia links for the new user, provided the user has the same CD-ROM as the author as a resource. *M2 Author* is not sold as a product but is incorporated into the CD-ROMs that Morgan Media creates.

Morgan Media is conducting research and development pertaining to CD-ROM/Internet connectivity in the areas of narrowcast video, video conferencing and secure data transmissions, operating in both the Mac and Windows environments. The company plans to develop several products that will push hybrid technologies to serve the needs of learners of all ages.

STRATEGIC RELATIONSHIPS:

- *British Columbia (BC) Ministry of Education* - following an open bidding process, selected Morgan Media to develop a product which Morgan will be marketing on the Ministry's behalf.
- *Coopers & Lybrand Consulting Group* - project partner, providing advanced project management skills as well as extensive experience in marketing.
- *NewVision Media* (Richmond, BC) - publishes and markets Morgan Media's products.
- *Sunburst Communications* (Pleasantville, NY) - publishes and markets Morgan Media's products.
- *White Bear Productions Inc.* - project partner, with strengths in video production. Provides content for many of Morgan Media's CD-ROM projects as well as video training support materials when needed.

The company has created consortia with video companies such as Alchemy Words and Pictures, which provides the content for educational CD-ROM projects.

INTERNATIONAL PARTNERING INTERESTS:

Morgan Media is interested in partnering with organizations that fit one of the following profiles:

- companies interested in localizing successful North American education products (rewriting into other languages).
- companies that are successfully publishing in foreign markets.
- companies that can partner with Morgan Media to identify potential educational jurisdictions that might be interested in CD-ROM/Internet-based course delivery of college and university curriculum materials.
- information providers: video companies producing area-specific (e.g., Japan) courseware that could be transformed into interactive, integrated courses.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Morgan Media's products are sold throughout North America, Great Britain and Australia. The company's next area of market expansion is South East Asia. Morgan Media is currently developing technologies that it believes could greatly influence how emerging nations might answer the needs of educating large numbers of post-secondary students without having to create massive institutional infrastructures.

Morgan Media is seeking partnerships with overseas firms who might have an interest in establishing sales of its *Course Authoring System* to educational institutions and then be interested in working with these institutions to support multimedia development. The company's analysis indicates that Australia, Malaysia, Philippines, and several European countries might be the most promising geographic locations. Prospective partner companies must have both marketing and technical skills in the areas of multimedia. Financial partners in Canada and the US are also of interest.

Morgan Media is also looking for overseas publishers interested in 'localizing' successful education titles for overseas markets. There are some potentially very interesting opportunities for companies that specialize in translation and publication of successful North America education titles.

MPR TELTECH LTD.

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CANADA V5A 4B5

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E-mail: products@mprgate.mpr.ca
WWW: http://www.mpr.ca/

KEY PERSONNEL:

Alan Winter - President and CEO
Ian Bardsley - VP, Business Systems and Applications
Norm Dowds - VP, Network Products and Systems
Peter Inman - VP and Chief Financial Officer
John Seminerio - VP, Marketing & Sales
Vince Holloway - Senior Director, Network Operations Support Systems
Andres Schneiter - Senior Director, Wireless Systems

NATURE OF BUSINESS:

MPR Teltech is high-technology company that provides advanced telecommunications systems and products to an international portfolio of clients in over 20 countries. It specializes in ATM-based premium video and Customer Care, Network Management, Real Estate and Wireless Communication Systems.

COMPANY PROFILE:

Year Established: 1979
Private Company (subsidiary of BC Telecom)
Number of Employees: 650
Annual Revenues: $76.4 million (1994)

Offices: MPR's head office is located in Burnaby, B.C. Subsidiary offices are found in: Ottawa, Ontario; Montreal, Quebec; Seattle, Washington; San Diego, California; Beaverton, Oregon; and Freising, Germany.

Key Customers:

- AGT
- BC TEL
- Bell Cellular
- Canadian Space Agency
- Department of National Defence
- European Space Agency
- Korea Telecom
- McCaw Cellular
- Ameritech
- Bell Canada
- British Aerospace
- Department of Communication
- Digital Equipment Corporation
- GTE
- Iowa Realty
- Lucky Goldstar
- Newbridge Networks

- Northern Taiwan Telecom
- Stentor
- Telecom New Zealand
- Northern Telecom
- Prism Systems
- Sibcy Cline Realtors
- Teleglobe
- Telesat Canada

COMPANY BACKGROUND AND HISTORY:

MPR Teltech was formed by merging the research and development divisions of two companies previously owned by GTE: Automatic Electric (Canada) founded in 1906 and Lenkurt Electric (Canada) founded in 1949. The new company was incorporated under the name Microtel Pacific Research in 1979, later changed to MPR Teltech in 1989. During its history, MPR Teltech has grown from a captive research and development facility, to a world-class high technology company. Revenues have climbed steadily from $10 million in 1981 to more than $78 million in 1993. The company has a long record of pioneering achievements in the telecommunications industry and has earned international recognition as the first company in the world to develop Asynchronous Transfer Mode (ATM) switches, now accepted to be the network technology of the 21st century. And currently, MPR Teltech is playing a key role in developing the infrastructure for Canada's Information Highway.

BUSINESS AND PRODUCT DESCRIPTION:

MPR Teltech specializes in ATM-based premium video and Customer Care, Network Management, Real Estate and Wireless Communication Systems. The company offers its customers and partners proprietary products and technology licensing, consulting, design, and system integration services. Target markets include telecommunications service providers, computer and telecommunications vendors, and large telecommunications system users.

Products:

- *WAVE* - an ATM-based video platform that allows telecommunications carriers and other service providers to offer premium-quality video communications services. An end-to-end carrier solution, *WAVE* includes Terminals, Broadband Multipoint Conference Units, Internetworking Gateways and a comprehensive Service Management System. End users are able to make calls over the network using a television set and video camera.

- *Customer Care Products* - sales tools that help telecommunications service providers streamline the selling process and increase revenues. These tools help Customer Services Representatives provide the best possible service to clients. Key applications include: *Telemarketing Sales Advisor*, *Long Distance Service Advisor*, *Data Services Advisor*, *Centrex Sales Advisor*, *Datasurf*, and *Repair Centre System*.

- *Network Management Solutions for TeMIP™* - Digital Equipment Corporation's TeMIP™ software provides an open, standards-based foundation for MPR Teltech to develop management solutions that grow with your network.

- *Computer-based real estate systems* - featuring easy-to-use graphical interfaces that combine high-resolution colour photographs of property interiors and exteriors, maps showing property location, adjacent landmarks and amenities, and current tax and assessment information.

- *CDPD* - MPR Teltech has adopted the role of CDPD (Cellular Digital Packet Data) technology facilitator to carriers and suppliers in the cellular industry. Building on a base of mobile data expertise

and major contributions made to the development of CDPD System Specifications Version 1.0 and Version 1.1, MPR Teltech has established itself as a leader in offering services and core technology products to the cellular industry. Core technology products include reference simulators, software test suites and tools, and a CDPD coverage tester.

MPR TELTECH AND THE INFORMATION HIGHWAY:

MPR Teltech is high-technology company that provides advanced telecommunications systems and products to an international portfolio of clients in over 20 countries. It specializes in ATM-based premium video and Customer Care, Network Management, Real Estate and Wireless Communication Systems. The company offers its customers and partners proprietary products and technology licensing, consulting, design, and system integration services.

MPR Teltech is playing a prominent role in the development of Canada's Information Superhighway and with the design and development of equipment and services that will support broadband applications and services worldwide.

DEVELOPMENT ACTIVITIES:

The longest single span between two points in Canada's electronic highway was completed in October 1994 between MPR Teltech's head office in Burnaby, BC and the Communications Research Centre in Ottawa, Ontario. The link was the result of several months of equipment installation across the country to support ATM networking technology deployment by CANARIE Inc. MPR Teltech also received funding from CANARIE for two related projects, one with Newbridge Networks for a commercial ATM and broadband research and development program and the second involving the COECEE alliance, a distance learning initiative.

ATM Development

MPR Teltech and Newbridge Networks have announced a three-year extension to their ground- breaking work on ATM technologies, products and markets. Under the new agreement, the companies will continue to develop the 36150 MainStreet ATMnet™ Access Switch and the 36170 MainStreet ATMnet Backbone Switch. The ATM networking platform is targeted at high-speed multimedia applications such as video conferencing, distance learning, retail service kiosks and telemedicine.

COECEE Distance Learning Network

MPR Teltech is a partner in the COECEE (Canadian On-Line Exploration and Collaborative Environment for Education) Distance Learning Network, a multimedia distribution and communications network for distance learning. The network uses low cost DBS satellite technology to extend Internet-based services to rural schools and communities. The network includes software that manages the asymmetric network created by the high bandwidth satellite channel to subscribers and a lower speed telephone modem channel from subscribers. The COECEE alliance of educators provides access to multimedia courses ranging from skills training to university-level courses as well as science resource materials.

STRATEGIC RELATIONSHIPS:

- *CANARIE Inc.* - tele-learning platform that gives Canadians access to the country's best education, training and learning opportunities via the Information Highway.
- *Digital Equipment Corporation* - MPR develops and resells unique applications for Digital's Telecommunications Management Integration Platform (TeMIP™).
- *Newbridge Networks Corporation* - joint development of ATM technologies

INTERNATIONAL PARTNERING INTERESTS:

MPR Teltech Ltd. seeks strategic partnerships and technology transfer licensing arrangements with companies in the telecommunications field and related sectors that have the necessary manufacturing, marketing and distribution resources to access global markets. In the case of companies whose technologies are complementary to MPR Teltech, collaborative development projects may be considered. The company's target markets include Asia, Europe, India, North and South America, and the Pacific Rim.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

MPR Teltech Ltd. seeks strategic partnerships and technology transfer licensing arrangements with companies in the telecommunications field and related sectors that have the necessary manufacturing, marketing and distribution resources to access global markets. In the case of companies whose technologies are complementary to MPR Teltech, collaborative development projects may be considered. The company's target markets include: Asia, Europe, India, North and South America, and the Pacific Rim.

NAUTICAL DATA INTERNATIONAL, INC. (NDI)

1 Military Road, Box 127
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A1C 5H5

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or Stephen Glavin, Senior GIS Specialist
Telephone: (709) 576-0634
Fax: (709) 576-0636
E-mail: bterry@ndi.nf.ca/ sglavin@ndi.nf.ca

Nature of Business:

NDI is a producer and distributor of geospatial data products; training and consulting re. Geospatial information technology; and a developer of technologies for geospatial data infrastructure.

Corporate Profile:

Private
Year Established: 1993
Number of Employees: 52
Annual Revenues: over $2 million (Cdn)
Strategic Alliances: confidential
Key Customers: government mapping and charting agencies; marine transportation industry; recreational boating community; users of geospatial information and services.

Company History:

Incorporated in 1993 as a private sector partner of Canadian Hydrographic service, Department of Fisheries and Oceans, to distribute data products and services, and to engage in collaborative R&D and export opportunities.

INFORMATION HIGHWAY

Wide-area network software and hardware systems for collaborative, distributed production, management and delivery of geospatial products.

STRATEGIC RELATIONSHIPS:

- *British Columbia (BC) Ministry of Education* - following an open bidding process, selected Morgan Media to develop a product which Morgan will be marketing on the Ministry's behalf.
- *Coopers & Lybrand Consulting Group* - project partner, providing advanced project management skills as well as extensive experience in marketing.
- *NewVision Media* (Richmond, BC) - publishes and markets Morgan Media's products.
- *Sunburst Communications* (Pleasantville, NY) - publishes and markets Morgan Media's products.
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The company has created consortia with video companies such as Alchemy Words and Pictures, which provides the content for educational CD-ROM projects.

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- information providers: video companies producing area-specific (e.g., Japan) courseware that could be transformed into interactive, integrated courses.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Mexico, South America, Japan, Southeast Asia and Europe
Potential Partners: network products/services; software; computer hardware and distributors; data co-producers.

Type of Alliance Sought: technology transfer, co-development of product or technology and/or licensing arrangement in geospatial field.

NEWBRIDGE NETWORKS CORPORATION

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Kanata, Ontario
CANADA K2K 2E6

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Fax 613-591-3680
E-Mail: sales@newbridge.com
WWW: http://www.newbridge.com

KEY PERSONNEL:

Terence H. Matthews - Chairman and CEO
Peter Sommerer - President and COO
F. Michael Pascoe - Vice-President and General Manager North and South America, President - Newbridge Networks Inc.
John D. Everard, Vice-President and General Manager, Europe, Middle East, Africa
Robert Broomfield, Vice-President and General Manager, Asia Pacific

NATURE OF BUSINESS:

Newbridge Networks designs, manufactures, and supports managed solutions for wide area and local area networks. The company's *MainStreet* family of products ranges from high capacity ATM, frame relay and time division multiplexer products for use in corporate and public networks to narrow-band feeder multiplexers, all manageable by a graphically rich network and service management system. Newbridge's *VIVID* family of products provides ATM performance in local area networks.

COMPANY PROFILE:

Year Established: 1986
Public Company
Number of Employees: 3,000
Annual Revenues: $ 800 million (1995)

Offices: Newbridge maintains its corporate headquarters in Kanata, Ontario. The company's US headquarters is in Herndon, Virginia. Sales and support offices are located throughout the world.

Key Customers:
- Bell Atlantic
- British Telecom
- GTE
- MCI
- Nynex

- Pacific Bell
- Southwestern Bell

COMPANY BACKGROUND AND HISTORY:

Founded in 1986, Newbridge Networks is a world leader in developing a comprehensive family of networking products and systems that deliver the power of multimedia communications to organizations in more than 100 countries throughout the world. Newbridge products are the choice of an expanding range of customers including the world's 200 largest telecommunications service providers, as well as more than 10,000 public and private enterprises, government organizations and other institutions. The company has facilities throughout Canada, the United States, Latin America, Europe, the Middle East, Asia and Australia. Newbridge Networks Corporation is a public company whose common shares are listed for trading on the New York Stock Exchange (NN) in the United States and on The Toronto Stock Exchange (NNC) in Canada.

BUSINESS AND PRODUCT DESCRIPTION:

Newbridge Network's *MainStreet* family of products includes high capacity frame relay, ATM and time division multiplexing (TDM) products for use in corporate networks and telephone company central offices. The *VIVID* line of products represents a paradigm shift in the local area network, emulating routed LANs and providing ATM performance. Newbridge products have a broad range of voice, data and video interface options and support a larger number of terminations per site and sites per network than competitive products.

Backbone Network Products:

Newbridge has a full line of products to create digital backbone networks using TDM, frame relay and ATM technologies. Products include:

- *3600 MainStreet* - Bandwidth Manager
- *36120 MainStreet* - Packet Transfer Exchange
- *36150 MainStreet* - ATMnet Access Switch
- *36170 MainStreet* - ATMnet Backbone Switch
- *3645 MainStreet* - High Capacity Bandwidth Manager
- *3664 MainStreet* - Fractional Access Multiplexer

LAN and LAN Internetworking Products:

Newbridge subsidiary Advanced Computer Communications (ACC - Santa Barbara, CA) supplies a full line of bridging and routing products that capitalize on the strengths of Newbridge in wide area connectivity and the strengths of ACC in LAN internetworking. These products can be equipped with frame relay interfaces and support a bandwidth optimization technique known as FAST Queuing.

Newbridge is a leader in developing ATM solutions for very high capacity requirements in the LAN and WAN. Newbridge's *VIVID* (Voice Image Video Data) product line supports multimedia applications and includes:

- *VIVID ATM Workgroup Switch*
- *VIVID Yellow Ridge* (Ethernet)
- *VIVID Route Server*
- *VIVID System Manager*

- *VIVID Network Interface Cards*

Network Access Products:

Newbridge has developed a full line of primary rate and narrow-band network access products to meet the network connectivity needs of small and remote sites.

- Primary Rate Access - *3630 MainStreet Primary Rate Multiplexer, 3624 MainStreet Intelligent T1 Channel Bank, 3620 MainStreet Branch Access Controller*
- Narrow-Band Access - *3612 MainStreet Narrow- Band Multiplexer, 3606 MainStreet Little Mux*
- Data Termination Units (DTUs) - allow users to extend the reach of their network to devices located up to 5 kilometres from the access multiplexer. The *26xx* and *27xx MainStreet* family of DTUs provides network access for X.21, V.35 and RS-232 devices.
- ISDN Access - *16xx* ISDN Terminal adapters.
- Universal Access - for combinations of switched and dedicated bandwidth, Newbridge provides the *3500 MainStreet Transmission Access Platform.*
- Frame Relay Access - frame relay access devices which convert information to packets for transmission on the frame relay backbone

Network Management:

The Newbridge Management Executive is a family of open, interoperable systems that has evolved from the strengths of the *46020 MainStreet Network Manager*. The Newbridge offering can expertly cover the management demands of the market, from the smallest private network to the largest public network consortium. The Newbridge management system is standards-based with open interfaces for value-added applications and integration into existing systems.

NEWBRIDGE NETWORKS AND THE INFORMATION HIGHWAY:

Newbridge Network's *MainStreet* family of products includes high capacity frame relay, ATM and time division multiplexing (TDM) products for use in corporate networks and telephone company central offices. The *VIVID* line of products represents a paradigm shift in the local area network, emulating routed LANs and providing ATM performance. Newbridge products have a broad range of voice, data and video interface options and support a larger number of terminations per site and sites per network than competitive products.

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Newbridge is a leader in developing ATM solutions for very high capacity requirements in the LAN and WAN. Newbridge's *VIVID* (Voice Image Video Data) product line supports multimedia applications and includes switches, servers, a system manager product and network interface cards.

Network Access Products

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Network Management

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STRATEGIC RELATIONSHIPS:

- Alcatel
- AT&T International
- Digital Equipment Corporation
- Madge Networks
- MPR Teltech
- Siemens Rolm Communications

- Siemens
- Southwestern Bell Telephone Company

INTERNATIONAL PARTNERING INTERESTS:

Newbridge has aggressively pursued partnerships internationally in order to expand its technology offerings, to take advantage of local manufacturing strengths and to team up for market advantage. The company has also entered into a number of marketing and distribution arrangements with telephone companies, wholesale distributors, original equipment manufacturers (OEMs), value-added resellers (VARs) and dealers. Newbridge is open to discussions with communications companies interested in working to help the Company pursue new opportunities worldwide.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Newbridge sells direct, as well as through marketing and distribution arrangements with telephone companies, wholesale distributors, original equipment manufacturers (OEMs), value-added resellers (VARs) and dealers. The company's international distributors include Alcatel, AT&T International and Siemens.

NIFCO SYNERGY LTD.

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KEY PERSONNEL:

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WWW: www.nifcosynergy.com

NATURE OF BUSINESS:

To revolutionize the way people acquire and process international trade information through the use of leading-edge technology.

COMPANY PROFILE:

Private
Year Established: 1991
Number of Employees: 15
Annual Revenues: $2 million (Cdn)
Key Customers: Erickson, 3M, General Motors, Bayer, Revenue Canada

COMPANY HISTORY:

The company was founded to develop software technology to assist international trade and business development by building expert and professional software applications that interpret international rules and regulations in international trade.

INFORMATION HIGHWAY

"GENT", Global Expert Network for Trade, is an Information Highway software product that will allow and facilitate internal trade and compliance with various trade agreements such as NAFTA and GATT. GENT will provide a framework for experts, traders and governments to facilitate compliance in the global world of trade.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Mexico, South America and Europe
Potential Partners: content developers, software, cable companies, telephone companies and distributors.
Type of Alliance Sought: joint marketing/sales alliance; distributor; licensing arrangement; venture capital or investment into the company; and/or a permanent alliance arrangement with minority or majority change in ownership.

Nifco Synergy Ltd. is particularly interested in forming alliances with businesses specializing in providing consulting services for trade compliance. It is also interested in seeking alliances with multinational and multi-product corporations.

OBJECTFORM INC.

555 Dr. Frederik-Philips, Suite 400
Saint-Laurent, Quebec
Canada
H4M 2X4

KEY PERSONNEL:

Carl Byers, President /
Frances Szeto, V.P., Sales/Marketing
Lily Lam, Dir. Product, Development
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Fax: (514) 855-7971
E-mail: fszeto@famic.ca / cbyers@famic.ca / llam@famic.ca

NATURE OF BUSINESS:

ObjectForm Software Inc. produces software tools which facilitate software reuse and increase development productivity in the worldwide Simulation Development and Behavior Modeling Community. ObjectForm's mandate is to develop and commercialize new technology in direct response to the increasing correlation between multimedia technology, advanced modeling techniques, and networked communications, such as the WWW. ObjectForm's first product offering is a framework for the development of real-time, object-oriented and distributed synthetic environment applications.

COMPANY PROFILE:

Private
Year Established: 1995
Number of Employees: 10
Annual Revenues: private
Strategic Alliances: VAR of ObjectStore from Object Design Inc.

COMPANY HISTORY:

ObjectForm Inc. was established in 1995 to acquire the assets, personnel and intellectual property of Famic Technologies Inc. (FTI), a former subsidiary of Famic Inc. of Montreal, Canada. At that time, ObjectForm assumed ownership and responsibility for the continued development and commercialization of TRAXX, a product under development within the FTI organization since June 1994. Since the acquisition, a great deal of effort has been devoted to the development of the product in its current state and to the definition of a comprehensive commercial strategy to support the product release. In January 1996, TRAXX Version 1.0 was released for sale worldwide.

INFORMATION HIGHWAY

TRAXX is and object oriented, intuitive framework for the development of real-time, distributed multimedia synthetic environments that are more reliable and economical. It is a lifecycle development tool for design, specification, development, testing/evaluation and deployment of synthetic environments and combines several technologies to offer the user a more productive, useable and flexible development framework. TRAXX was developed to act as a collaborative co-production tool and a multimedia solution that can both

generate content and exchange information on the Information Highway. For example, TRAXX can be networked over the Internet to allow a team of experts to work on-line towards the development of a common system. TRAXX *Viewers,* can incorporate public domain entities for graphics, video and multimedia capabilities and also display distributed applications over the World Wide Web. Future releases of TRAXX will use HTML, JAVA and other similar languages to provide a unique solution to emerging markets for interactivity on distributed networks.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Japan, South East Asia, Australia
Potential Partners: content developers; network products and services; multimedia; distributors
Type of Alliances Sought: co-development of product or technology; joint marketing/sales alliance; venture capital/investment; distributor/value added reseller; and/or systems integrator

More specifically, ObjectForm is seeking companies with HTML or JAVA based products or products with Search Engines that can be used to make the TRAXX *Viewers* easier to use and speed up the way which TRAXX collects information from the World Wide Web. Prospective companies must be able to work with ObjectForm to add features that will make TRAXX even more suitable for collaborative co-production over the Internet.

ObjectForm also requires partnerships with organizations that can help ObjectForm develop and launch the product in vertical markets such as in manufacturing, entertainment and medicine.

OPEN TEXT CORPORATION

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E-mail: info@opentext.com
WWW: http://www.opentext.com

KEY PERSONNEL:

Tom Jenkins - Chief Operating Officer
Tim Bray - Senior Vice President, Technology
Michael Farrell - Executive Vice President
Saman Farazdaghi - VP of Product Development
Lee Levin - Vice President, N.A. Sales

NATURE OF BUSINESS:

Open Text Corporation develops and sells high performance text retrieval software products. *Open Text 5* software is considered to be the market leader in high performance text retrieval technology. *Latitude*, the award-winning electronic document delivery system, was announced in April 1995.

COMPANY PROFILE:

Year Established: 1991
Private Company
Number of Employees: 48
Annual Revenues: $ 5 million (1995)

Offices: Open Text's head office is located in Waterloo, Ontario. A second Canadian office is in Vancouver (BC) and foreign offices are found in the United States (Boston, Chicago, Dallas, Seattle, and Washington), Switzerland (Zurich) and Japan (Tokyo).

Key Customers:

- Bibliotehque National de France
- Blue Cross/Blue Shield of Oregon
- Booz Allen & Hamilton
- CMP Publications
- Computer Sciences Corp.
- Grolier Publishing
- Japan Electronic Dictionary
- Martin Marietta
- Microsoft Corporation
- National Security Agency
- Oxford University Press

- Pentagon
- Union Bank of Switzerland

COMPANY BACKGROUND AND HISTORY:

Open Text's technology was developed at the University of Waterloo in a $ 6 million collaborative project, originally involving both govemment sources and the private sector, notably IBM and the Oxford University Press. When in 1990 it became apparent that the developed technology had commercial potential, Open Text Corporation was formed and the technology was acquired. Since that time, Open Text has enhanced and added to this technology which is now in use by more than 2,500 users worldwide. Open Text continues to maintain a close working relationship with the Center for Text Research at the University of Waterloo. In addition, Open Text is a leading participant in the Canadian Strategic Software Consortium, a nine company organization committed to the development of the harmonizing of text and relational database management systems (T/RDBMS).

BUSINESS AND PRODUCT DESCRIPTION:

Open Text markets an integrated suite of software products to data-intensive organizations in a variety of industries including financial services, education, publishing, govemment and manufacturing. These products provide customers with the ability to quickly search both native word processor file formats such as Microsoft Word and WordPerfect as well as SGML (Standard Generalized Markup Language) files.

Open Text's search engine is the world's fastest and most flexible, delivering fast (1-2 second) response times no matter how large the database (even multi-gigabyte files) or how long the phrase. The Open Text system runs on a stand-alone MS Windows system but can scale up to a large client/server system using multiple and different servers and clients. The use of the system's *PEM* (*Parallel Execution Monitor*) permits the server to deliver consistent response times regardless of database size or configuration.

Open Text's *TextSearch* server modules are available for all popular servers including Sun, HP, IBM, DEC, SGI, SCO and Windows NT. The client interface, *TextQuery* is available for MS Windows, Motif, Macintosh and ASCII terminals. *TextSearch* can search multi-lingual and mixed language databases, (including languages based on multi-byte characters such as Japanese, Korean and Chinese), with no loss of performance.

Products:

The *Open Text 5* system is an integrated suite of client/server-based text search, retrieval and viewing technologies, consisting of three components:

- *TextSearch* - a high-speed database search engine based on the company's patented PAT™ string search technology, that enables users to rapidly locate, access and display full text, search individual words and phrases located in multiple databases and file formats. Unlike other systems *TextSearch* does not require that data be converted to a proprietary format. *TextSearch* has a multi-file/multi-format architecture which means that support is offered for searching both SGML and native file formats such as WordPerfect, MS Word, Interleaf, FrameMaker, Lotus 123, Excel, DBase etc.

- TextQuery - a multi-platform, graphical user interface (GUI) that adheres to "progressive disclosure" principles. Beginners can quickly learn the product, while "power users" can enable additional features, expanding and reconfiguring the GUI to reflect the new capabilities.
- *TextView* - a viewing sub-system that automatically detects if data is to be viewed as "tagged text", such as SGML or HTML, or as one of 40 native file formats. Tagged text is displayed using user-

defined style sheets, while native files are displayed exactly as they would appear in their original format.

Open Text Latitude is the company's newest product offering, and enables users to find, view and re-use information stored in documents, no matter how the documents are formatted or distributed across desktops and servers. *Open Text Latitude* consists of a number of integrated components including *Open Text 5* and:

- Open Text's *Parallel Execution Monitor and Router* (*PEMR*), for broadcasting concurrent searches across CD-ROM, LAN and WAN networks, and the Internet. A single user query is transparently routed by *PEMR* to all appropriate search areas.
- a page viewer component which supports Common Ground and Adobe *Acrobat*.
- *IMAGEnation*™ image technology from Spicer Corporation enabling users to view images associated with large format CAD and vector graphics engineering.
- an SGML viewer, (for viewing and navigating within SGML documents).

Open Text Latitude was recently selected for an Award for Excellence at Seybold Seminars Boston 1995.

INFORMATION HIGHWAY

Enterprise-Wide Document Distribution

Open Text Latitude enables users to find, view and re-use information stored in documents, no matter how the documents are formatted or distributed across desktops and servers. *Open Text Latitude* consists of a number of integrated components including:

- The *Open Text 5* integrated suite of client/server- based text software, consisting of: *TextSearch* - the world's fastest database search engine; *TextQuery* - a multi-platform, graphical user interface (GUI); and *TextView* - a viewing sub-system.
- Open Text's Parallel Execution Monitor and Router (*PEMR*), for broadcasting concurrent searches across CD-ROM, LAN and WAN networks and the Internet. A single query from the user is transparently routed by *PEMR* to all appropriate search areas.
- a page viewer component which supports Common Ground and Adobe *Acrobat*.
- *IMAGEnation*™ image technology from Spicer Corporation enabling users to view images associated with large format CAD and vector graphics engineering.
- an SGML viewer, (for viewing and navigating within SGML documents).

Full Text Searching the World Wide Web

The *Open Text Web Index* continually 'visits' and reads virtually every document on the WWW and builds an index of every word. Launched in March 1995, the *Open Text Web Index* has indexed over one-half million pages, containing over 540 million words and 11 million hypertext links and still delivers a fast 2-3 second response time on complex searches.

DEVELOPMENT ACTIVITIES:

The *Open Text Web Index* represents a free offering to the Internet community providing a valuable service while publicizing the performance of the Open Text software. Open Text also intends to use the index as a way of validating new search strategies and new algorithms for high speed searching. Open Text expects the *Open Text Web Index* to be among the largest, most dynamic and heavily used databases in the world.

STRATEGIC RELATIONSHIPS:

- *IBM Corporation* - IBM will incorporate the *Open Text Web Index* in their new infoMarket Search service being offered over the IBM Global Network.
- *Oracle Corporation* - Oracle has licensed Open Text's information indexing and retrieval technology for future versions of Oracle products, including the upcoming release of Oracle Book.
- *UUNET Canada, Inc.* - UUNET will make available the *Open Text Web Index*. This index, available free of charge, will continually visit and read virtually every document on the Web, building an index of every word. The *Open Text Web Index* will scan the Web continuously for new or changed pages, and update the index on a daily basis.

INTERNATIONAL PARTNERING INTERESTS:

Open Text's key international partnering prospects include:

- Internet full-service providers
- large system integrators
- value-added resellers, with an emphasis on document management

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Open Text sells its products on a direct basis and via value-added resellers, system integrators and OEM partners. Some of these partners include: Andersen, AT&T, Booz Allen & Hamilton, Computer Sciences Corporation, and Oracle. The company is aggressively expanding these relationships on an international basis, particularly in Europe and the United States, and has already established resellers in several countries. Value-added reseller and other marketing arrangements are sought after for the United States (Federal government), the U.K., Japan and Eastern Europe.

PLATFORM COMPUTING CORPORATION

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E-mail: info@platform.com
WWW: http://www.platform.com

KEY PERSONNEL:

Dr. Songnian Zhou - President
Ms. Bing Wu - V.P. Operations
Jingwen Wang - V.P. Engineering
Duncan Craig - Director of Business Development

NATURE OF BUSINESS:

Platform Computing Corporation develops and delivers effective distributed computing system software solutions to the worldwide market. The company's primary product is *Load Sharing Facility (LSF)*, which is developing into the defacto standard for sharing computing load and resources across networks of UNIX systems.

COMPANY PROFILE:

Year Established: 1992
Private Company
Number of Employees: 20

Offices: Platform Computing Corporation's head office is in Toronto, Ontario. Additional offices are located in the US (Newbury, MA), the UK (Winchester, Hants), and Japan (Tokyo).

Key Customers:

- Bell-Northern Research
- Dupont
- Ford
- General Electric
- General Motors
- Grumman
- IBM
- Kimberly-Clark
- Motorola
- Northern Telecom
- Pratt & Whitney
- Silicon Graphics
- Texas Instruments

- Western Digital

COMPANY BACKGROUND AND HISTORY:

Platform Computing Corporation's LSF software is based on research on distributed resource sharing undertaken as part of Dr. Songnian Zhou's Ph.D. dissertation at the University of California, Berkeley in 1987 and subsequent work done at the University of Toronto where Dr. Zhou was on faculty with the Computer Science department. A research prototype system, UTOPIA, was completed in 1991, and was successfully applied to the computing system at Bell-Northern Research (BNR). With the co-operation of an engineering team at BNR, UTOPIA was transformed into an internal product used on over 1,000 computers in BNR. Platform Computing Corporation was founded in Toronto in 1992 to commercialize this technology which is now known as *LSF*.

BUSINESS AND PRODUCT DESCRIPTION:

Platform Computing Corporation develops and sells *LSF* (Load Sharing Facility), load sharing and distributed batch processing software for heterogeneous UNIX networks that provides integrated support for sequential and parallel jobs. *LSF* brings mainframe- class, seamless batch computing to UNIX networks. Instead of submitting jobs to specific hosts, users submit jobs to the "system", i.e. the collection of all heterogeneous hosts, leaving *LSF* the task of distributing jobs to appropriate hosts. *LSF* makes sure that no suitable host stays idle as long as there are jobs to be done. Through *LSF's* flexible configuration, resource sharing is controlled and adheres to site-specific computing policies. In addition to a command-line interface, *LSF's* Motif-based graphical user interface makes batch computing fast and easy.

LSF's many features include:

- *Platform Independence - LSF* integrates heterogeneous computer systems by hiding their differences and supporting transparent resource access across all platforms. Multiple types of computers can join a single cluster to share load. *LSF* supports all major UNIX systems including ConvexOS, Cray UNICOS, DEC OSF/1, DEC ULTRIX, HP-UX, IBM AIX, SCO UNIX, SGI IRIX, Solaris and SunOS.
- *Fault Tolerance - LSF* is highly fault tolerant. Load sharing services are available as long as one host is up, and no job is lost even if all hosts are down. *LSF* has been proven to work dependably in noisy networks with heavy traffic over unreliable routers and bridges.
- *Performance and Job Information - LSF* provides rich performance data through its job status inquiry utility. Network-wide system performance history is stored in a series of ASCII log files which can be accessed through *LSF's* job accounting and analysis tools.
- *Parallel Processing - LSF* turns a network of computers into a non-shared memory multiprocessor that can run parallel as well as sequential jobs. "Matching" sets of processors are allocated to parallel jobs for the best speedups. Transparent remote task execution, terminal I/O, and file accesses across the network are supported so that parallel jobs operate just like serial jobs. *LSF* also supports standard job control functions (e.g. suspend, resume, kill) for all parallel jobs. Third-party parallel packages such as PVM, HPF, and PATRAN are supported by *LSF*.
- *Application Programming Interface - LSF's* Application Programming Interface (API), LSLIB, is an open systems environment that allows developers to port or develop their own distributed applications. LSLIB provides more than 60 library calls covering distributed services like resource and host selection, load status information, remote execution, task control, remote terminal I/O and signals, and remote file access.
- *Comprehensive Utility Suite - LSF* comes with an extensive set of bundled utilities for distributed computing. These utilities access *LSF's* Load Information Manager (LIM) and Remote Execution Server (RES) to provide integrated services for distributed computing.
- *Client/Server Computing - LSF's* client/server architecture enables cost-effective computing and easy

system expansion. It can be used on one machine for its batch service, or on thousands of computers. All hardware resources and software packages available on any computer can be transparently accessed from every desktop workstation client.

- *Standards-Based - LSF* conforms to industry standards such as NSF.

INFORMATION HIGHWAY

Platform Computing Corporation develops and sells *LSF* (Load Sharing Facility), load sharing and distributed batch processing software for heterogeneous UNIX networks that provides integrated support for sequential and parallel jobs.

Large user sites typically use *LSF* in multiple departments, in clusters sometimes geographically separated from each other. A number of *LSF* users would like to do load sharing across the clusters to achieve even greater benefits through large scale resource sharing. For example, the three NASA research centers in Lewis, Ames, and Langley, want to link their several thousand computers of all makes, from supercomputers to workstations at all sites through an ATM network to create a pan-NASA Virtual High Performance Computer (VHPC). Pratt & Whitney, the world's largest aircraft engine manufacturer, is using *LSF* on 2,000 machines at all four locations in Connecticut, Florida, Montreal and Toronto and want to form a VHPC to share all their resources for better and faster engine design simulations.

DEVELOPMENT ACTIVITIES:

With financial support from CANARIE Inc., Platform undertook a project to study the feasibility of load sharing across wide area networks (WANs). Platform built an experimental version of *LSF* that can transfer jobs across WANs. Based on this successful project, Platform has submitted a plan to CANARIE for further support to build VHPC software, which Platform will market worldwide. This project is getting wide-ranging support from the systems vendors such as IBM, Digital Equipment Corporation and Silicon Graphics who will be donating equipment for the VHPC testbed, as well as from medium to large end-user companies such as Bombardier, Allelix, BNR, Pratt & Whitney, NASA, and a UK university consortium. This project will make effective use of the broadband network provided by CANARIE, and demonstrate that such networking technology is indispensable to industrial users.

STRATEGIC RELATIONSHIPS:

- *Convex Computer Corp.* - co-marketing agreement for *LSF*
- *Digital Equipment Corporation* - bundling *LSF* with clustering products
- *Hewlett-Packard* - has licensed LSF load monitoring technology
- *Silicon Graphics Inc.* - co-marketing agreement

INTERNATIONAL PARTNERING INTERESTS:

Platform's current focus is on developing North American market partners, although inquiries from non-North American markets would also be welcomed. Platform is primarily searching for qualified resellers for *LSF*, as well as third party software vendors to integrate *LSF* into their applications and solutions.

Ideal *LSF* resellers would typically:

- currently resell UNIX systems and/or UNIX utilities software;
- be focused on a specific market or geographic area;
- employ technical salespeople;
- have an existing client base well suited to *LSF*;

- be willing and able to dedicate resources to the sales and technical support of *LSF*.

Platform Computing is also interested in developing strategic co-marketing, development, or OEM agreements with manufacturers of UNIX and Windows NT-based workstations and servers.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Platform's current focus is on developing North American market partners, although inquiries from non-North American markets would also be welcomed. Platform is primarily searching for qualified resellers for *LSF*, as well as third party software vendors to integrate *LSF* into their applications and solutions.

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POSITRON INC.

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Telephone: (514) 345-2200
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E-mail: sales@positron.qc.ca
WWW: http://Positron.qc.ca:80/

KEY PERSONNEL:

Reginald Weiser ,President
Mike Feld - Vice President - Operations
Peter Hodge - VP Finance

NATURE OF BUSINESS:

The Positron Inc. Group develops and manufactures telecommunications equipment for high reliability, critical service applications including public safety emergency response systems (E9-1-1), SONET fiber optic transmission systems and multiplexers, communications protection for high voltage environments, integrated radio and telephone communications consoles, and trading turrets for the financial industry.

COMPANY PROFILE:

Year Established: 1970
Private Company
Number of Employees: 300
Annual Revenues: $ 35 million (1995)

Offices: Positron's corporate and engineering headquarters and manufacturing facilities are located in Montreal. U.S. headquarters are in New York, with six sales support offices across the United States.

Key Customers:

- BELLSOUTH
- Hydro Québec
- New York State Electric & Gas
- Ontario Hydro
- PACBELL
- Pacific Gas & Electric
- US Army Corps of Engineers
- USWEST

COMPANY BACKGROUND AND HISTORY:

Established in 1970, Positron is the world leader in the development of public safety and communications protection systems. Positron systems operate throughout North America and around the world including, Asia, South America, the Middle East, and Europe. Virtually all major US telephone companies and power utilities

have standardized on Positron products.

Positron is ISO 9002 registered and is actively pursuing registration to 9001 and Bellcore TR1252. The company is a recipient of the Canada Export Award and has received two awards for leadership in developing new technologies from the Institute of Electrical and Electronic Engineers (IEEE), and the Award of Excellence from the City of Montreal.

BUSINESS AND PRODUCT DESCRIPTION:

Positron manufacturers telecommunications equipment for high reliability, critical service applications. The company's products include:

Fiber Optic Transmission (OSIRIS)

Positron Fiber Systems Corporation's *OSIRIS*™ (Optical Access Sonet Interface System) provides full featured, OC-3, SONET access. *OSIRIS* is designed for path-protected ring networks and does operate on a collapsed ring (point-to-point) configuration. An innovative architecture allows installation and deployment at lower cost than traditional transmission systems. *OSIRIS'* compact, modular design makes it highly flexible as well as easy to install and maintain. *OSIRIS* uses a PC-based, graphical user interface permitting remote system operation, administration, maintenance and provisioning. The system is fully redundant and can be deployed in a variety of locations including central offices, business premises, campus networks, power utilities, and hospitals. It is ideal for applications such as distance learning, remote medicine and the linking of cellular radio sites.

Public Safety Communications
(E9-1-1 Emergency Response Equipment):

Positron engineers and manufactures public safety emergency response systems and currently has 1,900 installations in operation around the world. Flexible equipment choices including displays, telephones, and workstations, allow each community to custom configure a system to meet its needs. Positron's computer-based, emergency response workstation uses a sophisticated graphical user interface to integrate advanced call-taking and dispatch features. Positron also provides full system integration including: telephony features, Telephone Devices for the Deaf , instant playback/record, computer-aided dispatch , mapping, automatic number identification, automatic location identification, and automatic vehicle identification.

Critical Communications Protection
(Teleline Isolator):

Communication circuits in high voltage and public safety environments require special protection from ground potential rise and lightning. Over the last 15 years the *Teleline Isolator* has evolved to meet the needs of the industry and to protect all types of telephone applications and line interfaces. Today, hundreds of telephone companies and power utilities rely on the *Teleline Isolator* to protect telephone wireline facilities. Positron's *Mutual Drainage Reactor* reduces line noise by removing inductive influences.

Communications Consoles
Integrated Telephone/Radio Communications (TRCC)

The *TRCC* integrates telephone and radio communications into a single console. Features include: patching, paging, queuing, and customized programming of lines. The *TRCC* is used by power utilities, communities and governmental agencies such as North American Air Defense Command, the Royal Canadian Mounted Police, the US Air Force, and US Department of Energy.

Trading Turrets
(Programmable telephones for the financial industry):

Positron's electronic turret is a versatile workhorse. Programming flexibility allows for custom assignment of lines and buttons. Features include: a speaker monitor, index and speed dials, alternate page, volume control, headset compatibility, optional traffic analysis, and data integration.

Other Products:

Additional products include Remote Alarm Reporting and Control Units, audio tone protective relay control for transfer trip applications, Punctured Insulator Detectors for high voltage transmission lines and various telephony products.

Information Highway

Positron Inc. manufacturers telecommunications equipment for high reliability, critical service applications including public safety emergency response systems (E9-1-1), SONET fiber optic transmission systems and multiplexers, communications protection for high voltage environments, integrated radio and telephone communications consoles, and trading turrets for the financial industry.

Within the Positron Inc. Group, Positron Fiber Systems Corporation is responsible for the design, manufacture and sale of the company's advanced *OSIRIS*™ family of fiber optic transmission products.

Fiber Optic Transmission (OSIRIS)

Positron's *OSIRIS*™ (Optical Access Sonet Interface System) provides full featured, OC-3, SONET access. *OSIRIS* is designed for path-protected ring networks and does operate on a collapsed ring (point-to-point) configuration. An innovative architecture allows installation and deployment at lower cost than traditional transmission systems. *OSIRIS'* compact, modular design makes it highly flexible as well as easy to install and maintain. *OSIRIS* uses a PC-based, graphical user interface permitting remote system operation, administration, maintenance and provisioning. The system is fully redundant and can be deployed in a variety of locations including central offices, business premises, campus networks, power utilities, and hospitals. It is ideal for applications such as distance learning, remote medicine and the linking of cellular radio sites.

DEVELOPMENT ACTIVITIES:

Positron Inc., in partnership with Eicon Technology Corporation, technologies innovations AIKS, and the Centre de recherche informatique de Montréal (CRIM) has formed the INFOWAY, a $ 40 million Consortium established to develop and market innovative, cost effective products for linking business and public services to information networks.

Positron will provide the advanced SONET, fiber optic transmission technology capable of delivering voice, data, and video services. Positron *OSIRIS*, a 3rd generation, OC-3, SONET Multiplexer will serve as the foundation for new integrated INFOWAY product developments for the rapidly expanding broadband access market.

INTERNATIONAL PARTNERING INTERESTS:

Positron Fiber Systems Corporation is interested in pursuing international marketing and development partnerships.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Positron systems operate throughout North America and around the world including,Asia,South America, the Middle East and Europe. Positron is interested in expanding its international marketing activities and identifying additional resellers and system integrators.

PRIMA TELEMATIC INC.

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H3E 1T5

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Telephone: (514) 768-1000
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francois@prima.ca / joseev@prima.ca / marcl@prima.ca

NATURE OF BUSINESS:

PRIMA Télématic develops products and services in the field of Computer to Telephony Integration (CTI). Its main business is interactive services, specifically Interactive Voice Response. PRIMA offers a full and integrated line of services (consulting, design, conception, scripting, translation, recording, programming, and customer service) as well as a series of tested state-of-the-art production.

COMPANY PROFILE:

Private
Year Established: 1988
Number of Employees: 20
Annual Sales: $2.5 million (Cdn)
Strategic Alliances: Dialogic Corporation, QuebecTel International
Key Customers: Québec Téléphone, provincial and federal governments

Company History:

PRIMA Télématic Inc. was founded in 1988. Initially it developed videotex services for Bell Canada's Alex system. With offices in Montreal and Toronto, Prima expanded its services in 1991 to include services for all interactive communications tools including interactive voice.

At this time, the company is focused exclusively on voice, fax, and speech recognition and synthesis technologies. PRIMA has increased its revenue by 70% in the past two years.

INFORMATION HIGHWAY

ProductText~PRIMATEX-UNIX's Interactive Voice Response system is a completely integrated solution which lets you develop and run many types of voice applications such as audiotex, interactive voice response, audiofax and voice messaging. Employing the most advanced voice technology, the PRIMATEX UNIX solution allows you to configure your Voice Response System according to the functions your application requires.

PRIMA-MESSAGE is a multilingual auto-attendant/voice-fax messaging system that enables you to efficiently manage your telephone communications in an affordable way. PRIMA-MESSAGE is built on international standards and is fully compatible with numerous types of telephone systems.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Mexico, South America, Southeast Asia (except Japan), and Europe
Potential Partners: computer and hardware; cable companies; telephone companies; distributors.
Type of Alliance Sought: co-development of product or technology; joint marketing/sales alliance; and/or distribution.

PTHALO SYSTEMS INC.

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Canada
V5T 1C5

Sean Adkins - President
Telephone: (604) 872-5675
Fax: (604) 872-0144
E-mail: sadkins@direct.ca

Nature of Business:

Pthalo Systems Inc. designs and manufactures high technology products for the arts and entertainment markets worldwide. Products include projection, post production and control equipment for the film, television and theater industries. Pthalo Systems exports nearly all of its production to the US and Europe. The staff at Pthalo Systems have many years of experience in the design and manufacture of optical, electro-optical and electro-mechanical systems and components.

Corporate Profile:

Private
Year Established: 1987
Number of Employees: 14

Company History:

Pthalo Systems Inc. was founded in 1987 to develop products and technology for the entertainment industry, particularly motion pictures. Technology developments by the company have resulted in 5 patent applications.

During the growth of the company several OEM alliances have been formed, one of the largest with an Austrian company, Ludwig Pani, a manufacturer of large format projection systems used in scenic and effects projection for the theater, dance, opera and other live performances such as touring rock shows. The projection system is designed to project very large images using an 18cm square slide and the largest of the projectors can produce a "billboard" sized image which is visible in daylight. Pthalo manufactures a line of accessories for the Pani projectors and Pani sells them worldwide.

Pthalo Systems has been self financing since its formation and has grown from two engineers to 14 full time and 3 part time employees. Pthalo Systems exports nearly all of its production to the US and Europe. The company experienced growth of 100% last year and expects similar growth this year.

INFORMATION HIGHWAY

Pthalo Systems has developed technology which provides a fast, high quality method of scanning and recording motion picture film images. This new technology transforms motion picture film images into digital image data at the maximum resolution of the original film. After manipulation by digital image processing techniques, the digital data is then returned onto film for incorporation into the final motion picture. Pthalo Systems is now preparing to introduce its first product offerings based on this technology.

The product line called "Verité" Digital Film System. "Verité" includes a film scanner, a film recorder and a machine combining both scanning and recording, the Digital Optical Printer. All three products support all common 35 mm film formats (Academy, anamorphic and VistaVision formats). For the Digital Optical Printer changeover between scanning and recording is accomplished simply by loading either processed or raw film stock.

The "Verité" Digital Film System scans and records 35 mm VistaVision frames at the rate of 5 seconds per frame. The film transport is pin registered and the system accommodates 8, 10 and 12 bit per color data formats.

The "Verité" Digital Film System is based on a novel opto-mechanical architecture incorporating an internal drum configuration and a flying spot. Pthalo Systems has a US patent on the design of this opto-mechanical system. Our design is unique in that most of the system components are common between the scanning and recording portions, allowing us to construct a system which can be used for either scanning or recording with a minimal changeover period.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, Mexico, South America, Japan, Southeast Asia, Europe, Australia and New Zealand
Potential Partners: software; computer and hardware; and distributors
Type of Alliance Sought: technology transfer; co-development of a product or technology; joint marketing or sales; distributor; and venture capital/investment.

RECHERCHES MIRANDA INC.

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Christian Tremblay - President
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E-mail: ctremblay@miranda.com

NATURE OF BUSINESS:

Recherches Miranda specializes in research and development in imagery. Specific R&D includes the development of algorithms, simulation and development of a hardware or software prototype. Technology applications which this company is involved in include: High Definition Television (HDTV), professional video and multimedia.

COMPANY PROFILE:

Private
Year Established: 1991
Number of Employees: 23
Annual Sales: private
Strategic Alliances: CANARIE Inc., Bell Canada, General Datacom, Groupe Image Buzz, Genesis Microchips, Matrox
Key Customers: Technologies Miranda Inc., Pellmorex

COMPANY HISTORY:

Recherches Miranda Inc. was established in 1991 and operates in St.-Laurent, Quebec, Canada.

INFORMATION HIGHWAY

The company sells four interface products for digital video production: Espresso, ADP, Quartz and Quartet.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States, South America, Japan, Southeast Asia, Europe
Potential Partners: network product and services; computer and hardware
Type of Alliance Sought: Co-development of products or technologies; joint marketing/sales alliance.

The company is primarily interested in commercial alliances with telecommunications companies involved in fiber optics.

SARATOGA SYSTEMS

(and CVC - Computer Video Conferencing)

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L3R 9S9

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E-mail: cvc@Saratoga.com
CompuServe: 102163,3611
WWW: http://www.interlog.com/~jh/

KEY PERSONNEL:

John Hughes - President
BarryTrebell - Vice President Sales and Marketing

NATURE OF BUSINESS:

Saratoga Systems develops and sells Windows-based software and database applications for television and radio broadcasters, media buyers and advertising agencies. Through its CVC Computer Video Conferencing subsidiary, the company is also now introducing new video/data conferencing applications aimed at the same markets.

COMPANY PROFILE:

Year Established: 1987
Private Company
Number of Employees: 8
Annual Sales: $ 1.25 million (1995)

Offices: Saratoga Systems is based in Markham, Ontario, near Toronto.

Key Customers:

- Bowdens/MacLean Hunter
- LNA Leading National Advertising
- Media Monitoring Service MMS (UK)
- Readers Digest
- TSN The Sports Network

COMPANY BACKGROUND AND HISTORY:

Saratoga Systems was established in 1987. Located in Markham, Ontario the company has earned an international reputation for knowledge and expertise in designing Windows-based software and data base applications for the international advertising industry. Software has been successfully written and implemented for all segments of this industry including: advertising agencies, cinema, magazine publishers, network television, and outdoor advertising.

The company has consistently reported growth in sales. Major markets served include:

- Australia
- Canada
- Puerto Rico
- Latin America
- Singapore
- United Kingdom.
- USA

Saratoga Systems recently formed a subsidiary company called CVC - Computer Video Conferencing. This new company is committed to becoming a world leader in the development of desk top video collaborative conferencing applications for the advertising, banking and financial services industries.

BUSINESS AND PRODUCT DESCRIPTION:

Saratoga Systems develops and sells software applications for television and radio broadcasters, media buyers and advertising agencies. Products include media monitoring software applications, customized network and single station applications for broadcasters, and advertising agency software.

Media Monitoring Software:

Saratoga has designed and implemented a full suite of media monitoring applications allowing advertising executives the critical ability to identify opportunities and measure product performance. Utilizing user- friendly Windows software, the most up-to-date industry information is readily available for analyses and reporting in a multitude of formats. Media monitoring software includes:

- *Press* - national newspapers, regional newspapers, consumer magazines, and business-to-business journals. Coverage is totally flexible and can be customized to suit individual requirements.
- *Television* - a PC-based system that allows fast and efficient analysis by individual occasion, campaign, advertiser, station region and category. Fully adaptable to cable TV and satellite TV.
- *Radio* - analysis by occasion, frequency, campaign, category, brand, and market.
- *Outdoor* - analysis by brand, advertiser category, region and market.
- *Cinema* - analysis by brand, advertiser, category and region.
- *Multimedia Analysis* - advertising can be analyzed across all major types of media. Users can quickly scan to see the full advertising schedule of any advertiser, brand, or agency. Details are available by category, region, media type, or any user- defined sub group.

Broadcast Software:

Customized network and single station applications for TV or radio include:

- *Electronic Sales Presentation Systems* - Software applications designed to seamlessly link station sales presentation software with advertising agency buying systems via computer modems, utilizing ISDN technology.
- *Reach and Frequency Analysis* - a reach and frequency model is available, designed to link with broadcaster sales presentation systems. Instant reach and frequency computations can be run against proposed schedules. Schedules can be bench marked and compared to revised schedules. Measured variables include: station, client, demographic profile, total cost, GRP levels, (weekly & total), estimated reach and frequency.

Advertising Agency Software:

- *Media Buying Systems* - customized agency buying programs for purchasing television, cable, radio, print, outdoor, and cinema. Features include a seamless interface to host software.
- *Post- Buy Analyses Systems* - multimedia post buy analyses programs available for broadcast, both radio and television. Reach and frequency verification, rating point analyses.

Through its newly created subsidiary, CVC - Computer Video Conferencing, Saratoga also sells:

- *Video ISDN Media Negotiation Systems (Virtual Media Buys)* - utilizing Intel Pro Share Video, the media negotiation process software allows the buying process to proceed in real-time, unconstrained by geography. The media representative and the agency buyer see and hear each other on their respective PC's while sharing an identical presentation or worksheet. Confirmation of the "buy" can be printed off at each end. A facility is also available to simultaneously download data into media traffic and advertising agency buying systems.
- *Video/Data Conferencing* - Customized ISDN video/data sharing applications designed and implemented allowing the real-time sharing of critical information with media suppliers, clients, creative production and satellite offices.

Information Highway

CVC Computer Video Conferencing is committed to becoming a world leader in the development of standards-based (H.320), interoperable desk top video collaborative conferencing applications. Utilizing ISDN broadband communications technology, CVC specializes in the design of Windows-based, end node software conferencing applications for the international advertising, banking and financial service industries.

CVC's desk top PC applications allow the exchange of visual, audio, graphic and still imaging information in real-time by individuals located virtually anywhere in the world. The applications enable people to meet remotely over telecommunications networks, collaboratively share information, solve problems and negotiate decisions conveniently from their desk tops.

DEVELOPMENT ACTIVITIES:

CVC has developed and launched an Intel Pro Share-based desk top conferencing application for the Canadian broadcast industry. Labelled *TOPS (TSN On-line Presentation System)*, the application facilitates the television media negotiation process, allowing television sales representatives to negotiate the purchase of airtime with media buyers at advertising agencies, in real-time, PC-to-PC. The seller and buyer can see each other on their respective PC's, share the same presentation, charts and graphs, negotiate an airtime purchase and reach an electronic agreement. Once negotiated, agreements can then be downloaded into both the broadcast and agency traffic systems.

CVC's *TOPS* software permits a broadcast sales representative to create a presentation suite of programs and pricing, while maintaining control of station inventory. The software is uniquely geared to the process of negotiation, with one party (the seller) enjoying a more enhanced position during the process. The seller maintains control of the screen by predetermining the document fields that will be shown or not shown to the purchaser. Using *TOPs*, media (i.e. TV, radio, print, or outdoor) will be able to negotiate global advertising campaigns in real-time with advertising agencies in any location worldwide that is supported by ISDN service.

TOPS will be commercially introduced to the Canadian advertising market in October 1995 with the television network TSN (The Sports Network) linking to 10 major Canadian advertising agencies. The *TOPS* application will be introduced commercially to global advertising and broadcast executives at the NAB World Media Expo

in New Orleans, September 6-9 1995.

CVC is a member of the Personal Conferencing Work Group (PCWG) consortium, a year-old consortium of more than 170 computing and telecommunications companies supporting the rapidly emerging market for desk top conferencing.

STRATEGIC RELATIONSHIPS:

- *Microsoft* - Saratoga is a Microsoft Solution Provider.
- *PCWG (Personal Conferencing Work Group) consortium* - Saratoga Systems is a member of this year-old consortium of more than 170 computing and telecommunications companies supporting the rapidly emerging market for desk top conferencing.

INTERNATIONAL PARTNERING INTERESTS:

CVC is interested in finding partners to help market its desk top video media negotiation platforms to key prospects in the media industry, including the sales and MIS divisions of: global television networks; stations; sales representation shops; radio station networks and rep shops; advertising agencies; and advertising agency buying shops. Partners should be capable of providing consulting, design and implementation support. International telephone companies and consortia interested in expanding ISDN usage are also of interest as are partners developing custom applications for remote banking and financial services. Key markets include Australia, Latin America, Mexico, New Zealand, South Africa and the US.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Saratoga Systems markets its software and desk top video media negotiation products on a direct basis worldwide. Saratoga is interested in locating additional reseller partners in the US, Mexico and Australia to help market these products to key prospects in the media industry. Partners should be capable of providing consulting, design and implementation support.

SECURED COMMUNICATIONS CANADA 93 INC.

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KEY PERSONNEL:

Ernie Miller - President
Sundeep Khosla - Vice President, Sales and Marketing
Andrey Jagiello - Vice President, Systems Engineering
José Laraya - Vice President, Hardware Engineering

NATURE OF BUSINESS:

Secured Communications Canada '93 Inc. (SCI) develops, manufactures and markets sophisticated and versatile data security solutions. SCI's *Session Key* PCMCIA hardware-based product is a powerful encryption card that provides transparent encryption using a variety of algorithms.

COMPANY PROFILE:

Year Established: 1993
Public Company
Number of Employees: 16

Offices: SCI is a subsidiary of MIU Industries. Both companies have headquarters in Concord, Ontario. A European sales office is also located in Lathum, The Netherlands.

Key Customers:

SCI sells to banks, Fortune 1000 corporations, Internet Service Providers and government departments.

COMPANY BACKGROUND AND HISTORY:

SCI is in the business of manufacturing hardware based, electronic identification and authentication access technology for data and network computer systems. The credit card sized "*Session Key*" token provides optimum security in the palm of one's hand as no data can be accessed or transmitted without the proper password. SCI currently employs 16 people and is located in Concord, Ontario. Secured Communications Canada 93 Inc. is listed on the Vancouver Stock Exchange ("SKB").

BUSINESS AND PRODUCT DESCRIPTION:

Secured Communications Canada '93 Inc. (SCI) has developed an innovative data security system based on a PCMCIA card that contains encryption and decryption software that meets the Data Encryption Standard

(DES).

Session Key

The SCI *Session Key* data security system uses the PCMCIA PC card as a positive user identification security token and self contained, high speed encryption engine. The token is required as proof of user authority to access the computer and data accessed by the computer. The *Session Key* PC card is a host-independent security module. It provides the cryptographic functions using dedicated hardware processing power to maintain the authenticity, integrity and confidentiality of data stored on the computer, plus data transactions initiated from a personal computer. These functions are accessed in line with software calls and are transparent to the user. The *Session Key* is similar in this respect to a bank card with a PIN (Personal Identification Number) number.

SCI's data security solution allows a computer user to encrypt confidential data files selectively as they are stored on the computer's media. On authorized "read access", the information is decrypted with the correct encryption key as it is transferred by the device driver to the system memory. File data and disk information is encrypted whenever data is written to the disk, rendering the media or file unreadable. The encrypted information remains confidential and is not subject to unauthorized inspection even if the hard drive, or disk is lost and stolen.

The *Session Key* resides in a self-contained encryption device for use with PCMCIA ready hosts, e.g. notebook, PDA's, and desktop and deskside computers using a DOS and Microsoft Windows operating system. The *Session Key* software automatically and transparently intercepts OS access calls (for retrieving disk data or files) and directs the data through the Session Key for encryption and decryption. This strategy is effective for transparently encrypting/decrypting files (documents or program files) resident on local disks or networks. Also SCI's media encryption permits users to secure databases stored on disks, CD-ROMs, or flash memory cards. *Session Key* encrypted files and media may be shared between authorized users for information that is designated as private and confidential. The confidence in the security is further maintained by isolating encryption and key management functions exclusively on the *Session Key* card. The host does not see or access the clear encryption codes programmed in the *Session Key* PCMCIA card during the configuration routine.

All *Session Key* critical security information is completely removed from the host system when the *Session Key* is removed from the PCMCIA slot. Attempts to legally gain access to a users name, password, or encryption codes by hidden programs and inspection of the hard disk will fail. The critical information (i.e. keys) are stored on the *Session Key*, not an unattended PC. Potential hackers are left with the sole alternative of a brute force attack on DES encrypted data with 1 in 72 quadrillion chance of guessing the correct encryption code.

The *Session Key* is shipped as a non-programmed PCMCIA card. The *Session Key* installation program is used to program the initial user information (i.e. name, password, encryption codes) required by the runtime software to permit access to the computer. Each card is programmed with a unique digital signature that identifies the user to the host software that allows the user to create and access encrypted information. *Session Key* products allow the user to generate and manage all cryptographic key information. This strategy eliminates customer concerns over who is the rightful owner of their encryption codes.

INFORMATION HIGHWAY

Secured Communications Canada '93 Inc. (SCI) has developed an innovative data security system based on a PCMCIA card that contains encryption and decryption software that meets the Data Encryption Standard (DES).

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DEVELOPMENT ACTIVITIES:

SCI has a number of new product development efforts underway, including:

- a prototype encryption engine based on the VLSI Ruby II ASIC. This development was initiated to produce a single chip export grade and DES encryption engine and to integrate cryptography in modem communications protocols.

- RSA BSAFE - Cryptoki Translation API establishes a fast track to link Public Key infrastructure with a *Session Key* Cryptoki token. This project is a collaborative effort with RSA Data Security Inc. (US). Reviewed by RSA in July 1995, the project is progressing on schedule and will be completed by September 1995.
- the Strategic Microelectronics Consortium awarded SCI a $ 170,000 grant by to produce a single chip ASIC version of the RISC-based encryption engine.
- funded by the National Research Council (IRAP program), SCI will address the issue of a *Session Key* FaxModem PCMCIA dual card for use in single slot PCMCIA-ready computers.~

STRATEGIC RELATIONSHIPS:

- *AST Computers* (Canada)
- *Olivetti* (Italy)
- *Philips Electronics* (The Netherlands)
- *RSA Data Security* (US)
- *Sidus Systems Inc.* (Canada) - co-operative marketing partner for *Session Key.*
- *Secure Networks Systems* (Israel)

INTERNATIONAL PARTNERING INTERESTS:

SCI is interested in forming partnerships and alliances with other companies interested in computer and network security. Key international partnering prospects include:

- *major system integrators*, particularly those with government, or banking/financial services clients.
- *value-added resellers* with expertise in the field of information security
- *value-added network providers* for EDI and electronic commerce applications.
- *vendors of complimentary products*, e.g. PC manufacturers or computer security system developers,

interested in co-operative marketing and product development opportunities

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

SCI sells its products and services on a direct basis, from its offices in Canada and The Netherlands, and via the Internet. SCI is currently developing a reseller program for *Session Key* that is aimed at developing relationships with strong value-added resellers and system integrators in Europe, North America, and the Pacific Rim.

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Key Personnel:

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NATURE OF BUSINESS:

Applications specific software and electronic engineering design and development for the defense and research communities as well as for intermodal shipping and utilities industries. The company specializes in total solutions for data acquisitions, collection and dissemination which includes custom hardware (radio frequency and microprocessor based) and custom software (Graphical User Interfaces and Relational Database Management Systems).

COMPANY PROFILE:

Private
Year Established: 1978
Number of Employees: 40
Annual Revenues: private
Strategic Alliances: CANARIE Inc., Canadian Space Agency, European Space Agency
Key Customers: Defense Research Establishment Atlantic, Bedford Institute of Oceanography, Woods Hole Oceanographic Institute, and various other international research institutes.

COMPANY HISTORY:

Seimac has grown from a two people to over 40 in 18 years. Traditionally the company has served the defense and research communities in Canada and the United States. Most recently, they have been providing service to commercial concerns in the United Kingdom, Germany and the United States in tracking hardware and software tracking applications. Seimac's future growth will be based on niche market applications of their services which are information and knowledge-based.

INFORMATION HIGHWAY

Seimac currently offers value-added data products to customers worldwide which increase their effectiveness. Seimac's product will soon be offered via the Internet. Furthermore, they are currently developing a product which will streamline the delivery of radarsat data to selected user groups. This product should be available in the 1997-98 time frame.~

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States and Europe

Potential Partners: software and telephone companies
Type of Alliance Sought: joint marketing and sales alliance and/or a licensing arrangement in a targeted geographic area.

SMART TECHNOLOGIES INC.

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KEY PERSONNEL:

David A. Martin - President and Co-founder
Nancy Knowlton - Executive Vice President and Co-founder
Nancy Macnab - Controller
John Deutsch - Vice President, North American Sales
Roy M. Anderson - Director Software Engineering

NATURE OF BUSINESS:

SMART Technologies is a leader in the development of advanced Windows and Macintosh-based desktop conferencing software and touch-sensitive electronic whiteboard products.

COMPANY PROFILE:

Year Established: 1987
Private Company
Number of Employees: 39
Annual Revenues: $ 8.5 million (1995)

Offices: Headquartered in Calgary, Alberta, SMART has sales offices in both Canada (Edmonton, Alberta and Toronto, Ontario) and the United States (North Carolina, Washington, D.C. and Southern California).

Key Customers:
- Ford Motor Company
- Le College des Grands Lacs
- Microsoft Corporation
- Petro Canada
- Royal Bank of Canada
- NTT (Nippon Telephone and Telegraph)
- TAFE (Australia)
- TeleEducation New Brunswick
- The Royal Air Force
- University of Nevada

COMPANY BACKGROUND AND HISTORY:

Incorporated in August 1987, SMART started as the Canadian distributor for the In Focus Systems, Inc. line

of LCD panels. In 1990, the company began developing the software and hardware that eventually formed the *SMART 2000 Conferencing System.* SMART's Windows-based conferencing software and touch-sensitive whiteboards are industry firsts and position SMART as a market leader, offering a comprehensive product line for all types of meeting situations.

SMART has received recognition from the software and communications industry for its Canadian-based technology, including:

- 1995 ICIA (International Communications Industry Association) Software Publisher of the Year award for *SMART 2000 Conferencing* software.
- 1993 AsTech Award winner for software development
- May 1992 Best New Product Award (*SMART 200 Conferencing System*) - Canadian High Tech Show

BUSINESS AND PRODUCT DESCRIPTION:

SMART Technologies develops and sells hardware and software products that help customers with their communications needs, whether they are in the same room or around the world. The company's product line includes tools for all types of electronic meetings. SMART's solutions can be customized to meet clients' needs and will support both single or multiple-site meetings, using built-in or portable installations. SMART's product line includes:

- *SMART Rear Screen*™ - this multimedia system acts as a display for projecting computer-generated images using an LCD projection panel or projector. The *Rear Screen* incorporates a touch screen with an attractive cabinet that houses all the multimedia equipment needed for presentations or conferences. Included is the *SMART Pen Tray*, featuring built-in switches that recognize the color of the pen selected and then communicate to the computer the color of the pen being used.

- *SMART Board*™ - a low cost, touch-sensitive electronic whiteboard that allows users to save information written on it to a computer. The *SMART Board* connects to a computer through a serial port. Two software packages are included with every *SMART Board. SMART WriteBoard*™ allows users to write with a conventional dry-erase marker, with everything written or drawn on the *SMART Board* immediately sent to the computer where it is stored on a hard drive or disk or printed via the computer's printer. *SMART Marker for SMART Board*™ allows users to press on the *Board* to control any application as well as mark up any projected image with a variety of pen tools. Both software packages work with all IBM-compatible PCs running Windows, Macintosh computers and Sun Microsystems SPARCstations.

- *SMART 2000 Conferencing*™ - for use with Windows applications, *SMART 2000 Conferencing* delivers real-time, interactive data conferencing via desktop computers or a *SMART Board. SMART 2000 Conferencing* software connects multiple locations over standard phone lines, ISDN, or LAN/WANs (NetBIOS, TCP/IP, Novell IPX, Banyan Vines), allowing users to share applications and edit or annotate documents in real-time.

- *SMART Conferencing for Macintosh*™ - compatible with Intel's ProShare Personal Conferencing, this product gives Macintosh users cross-platform data conferencing ability. Users work interactively with output from Macintosh applications, showing annotations at every location, or can work with projected Macintosh applications on the *SMART Board.*

- *SMART Marker*™ - a tool that lets presenters and trainers mark up, annotate or highlight computer-

generated presentations. Using a mouse, *SMART Marker* allows users to highlight text or draw over text and images. It provides a menu of 16 colors and allows users to erase and clear annotations.

- *SMART Notes™* - a Windows-based application that allows users to prepare and deliver a presentation. When preparing the presentation, the user can capture slides from various applications and sort them into one presentation. When giving the presentation, it allows the user to control the presentation by touching the "next slide" and "last slide" buttons as if they were using a slide projector. It incorporates the features of *SMART Marker* and provides a notepad for making notes during the presentation, as well as a Look button that allows users to bring up live applications.

- *SMART Digital Bridge* - is required for multipoint Windows data conferencing when using modem connections. The *Bridge* acts as a central distribution point for data conferencing activity, accepting data from multiple points and distributing it to other points connected to the same conference. The *Bridge* has the capability of handling multiple conferences simultaneously, and users can access their particular conference by selecting their conference name when dialing in. All meetings can be password-protected to ensure that only authorized participants join the meeting.

INFORMATION HIGHWAY

SMART Technologies is a leader in the development of advanced Windows and Macintosh-based desktop conferencing software and touch-sensitive electronic whiteboard products.

Through its involvement with CANARIE Inc., SMART has developed a next generation conferencing product. Extending the existing capabilities through which SMART has established its reputation as a leader in the desktop conferencing industry, this new evolutionary product takes advantage of the increased bandwidth and connectivity that is provided by the Information Highway.

Scheduled for initial release in late 1995, the MS Windows-based conferencing facility incorporates a number of capabilities, including:

- *multi-point connectivity over any topology of heterogeneous networks* - conferences may incorporate users from the Internet, from local area networks, or through simple dialup modem connections. All major LAN and WAN standards are supported.
- *chair control for meetings* - consistent with the most common approach used for business presentations or educational classes, meeting resources are controlled from a designated participant with the other participants being given input capabilities on an as-needed basis.
- *multimedia content* - information exchange between the sites can be done using traditional forms such as images, text, or markup annotations; however functions such as audio communications and application sharing are also available.
- *data preparation facilities* - whether prepared in advance or during a meeting, presentation meeting files can be composed using the integrated annotation tools or from any external presentation program.

The simple interface presented to the meeting participants minimizes the training required for meeting participants.

DEVELOPMENT ACTIVITIES:

SMART Technologies Inc. expects this next generation conferencing facility will enjoy significant penetration in the educational and business markets. Further effort will be made to incorporate specific tools, such as user query operations, and to increase usability for each market segment. Future product enhancements will also

address cross-platform usage, other multimedia data forms, and compliance with evolving conferencing standards.

STRATEGIC RELATIONSHIPS:

- *Intel Corporation* - In December 1992 SMART entered into a long-term agreement with Intel to jointly develop and market data conferencing products for desktop and conference room applications. SMART will focus on data conferencing products for meeting room applications, where people use touch-sensitive electronic whiteboards as a display and input device, while Intel will emphasize data conferencing products for desktop personal computer applications.

SMART is also involved in a number of joint development projects under non-disclosure with Canadian and American companies that dominate their market niches.

INTERNATIONAL PARTNERING INTERESTS:

SMART Technologies Inc. is interested in identifying partners to extend the development and assist in marketing of their next generation conferencing facility. Of particular interest to SMART are:

- educational organizations where distance-learning plays an important role in the teaching process
- PTTs, or equivalent telecommunications organizations, where conferencing aspects can be demonstrated through ATM trials, service affiliates, large customer needs, etc.
- value-added resellers who concentrate on conferencing solutions.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

SMART Technologies sells through value-added resellers in the US and Canada, and through value-added distributors in Asia, Australia, Europe, Mexico and the Middle East. SMART plans to extend its distribution network into Germany, Italy, Scandinavia, as well as Latin America and South America.

SOFTWARE KINETICS LTD.

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NATURE OF BUSINESS:

Software Kinetics is a technology company whose principal business is software engineering and system integration. Their experience comes from numerous contracts in defense, aerospace and communications applications. From this business base the company has expanded into public safety, network communication applications and data management.

COMPANY PROFILE:

Private
Year Established: 1981
Number of Employees: 180
Annual Revenues: $20 million (Cdn)
Strategic Alliances: CANARIE Inc.
Key Customers: Department of National Defense; Royal Canadian Mounted Police; ISTAR International Inc.; Lockheed-Martin.

COMPANY HISTORY:

Established in 1981, the company grew from a small consulting organization to a qualified software engineering and system integration company. Headquartered in Stittsville, Ontario (near Ottawa), Software Kinetics expanded into Atlantic Canada in 1988, opening an operation in Dartmouth, Nova Scotia. In 1989 NSTN Inc. was incorporated as a wholly owned subsidiary of Software Kinetics. NSTN Inc. was a regional Internet Service Provider that has today merged into iSTAR Internet Inc. Both the Stittsville and Dartmouth operations have achieved ISO 9001 certification for software development, system engineering and system integration.

INFORMATION HIGHWAY PRODUCTS

Software Kinetics is developing a Z39.50 Internet Open Information Access and Retrieval product intended to make legacy databases available on the Internet. With this product users with commercial web browsers will be able to search and retrieve information from data sources that previously required custom forms and interfaces. Information providers, governments having to provide "freedom of information" and corporations who wish to market information, will be able to have their databases searched and information delivered to any user on the Internet.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States and Europe
Potential Partners: network products/services; software
Type of Alliance Sought: The company is open to all possible alliances.

SOUND LINKED DATA INC.

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KEY PERSONNEL:

Errol Davis - Founder and President
George Dragone - Chairman of Sound Healthcare
Ed Cowan - Vice President of Marketing
Russell Senyk - Vice President of Sales
Erik Arisholm - Director of Development

NATURE OF BUSINESS:

Sound Linked Data (SLD) is a software development company that specializes in the research and development, sales and support of medical screening and testing software, initially focusing on the hearing healthcare market.

COMPANY PROFILE:

Year Established:1980
Public Company
Number of Employees: 10
Annual Revenues: under $ 1 million (1995) (Sound Linked Data Inc.)

Offices: Sound Linked Data and its parent company Sound Healthcare Inc. are located in Toronto, Ontario.

Key Customers:

- Bell Canada
- Canadian Tire
- Dupont
- Gulf Canada
- Ford Motor of Canada
- General Chemical
- General Motors of Canada
- Glaxo Pharmaceuticals
- Kellogg
- Mobil Oil
- Molsons
- Northern Telecom
- Proctor & Gamble
- Starkey

COMPANY BACKGROUND AND HISTORY:

Sound Linked Data was founded in 1980 as a research and development company with its focus on artificial intelligence-based medical software. In 1985 it began developing and interfacing hardware to its software products. SLD is now in the business of technology licensing for advanced medical hardware and software

BUSINESS AND PRODUCT DESCRIPTION:

Sound Linked Data (SLD) is a software development company that specializes in the research and development, sales and support of medical screening and testing software. SLD's *MAX* testing system is the result of some 15 years and over $ 4 million in development.

The *MAX System* is the first system that tests hearing, classifies impairment, reports results and educates patients automatically. The *MAX System* merges a programmable audiometer with powerful software to create a flexible, easy-to-use hearing testing program. It runs on an IBM compatible personal computer under Microsoft Windows making the graphical user interface easy to use and learn. In addition to delivering accurate test results, *MAX* is an early warning system, helping professionals define, analyze and respond to emerging problems. *MAX* delivers information quickly and accurately, with hearing healthcare intelligence built right into it.

INFORMATION HIGHWAY

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DEVELOPMENT ACTIVITIES:

The ScreenLinx Healthcare Consortium

Sound Linked Data has joined forces with Bell Canada's Healthcare Solutions and MediaLinx Interactive (part of the Stentor Group) to form the ScreeenLinx Consortium. ScreenLinx will begin its first phase of development by providing hearing healthcare services through Bell Canada's existing interactive services and to release other on-line services as the technology for the interactive market expands. The second phase of development will include the integration of cardiovascular, pulmonary and vision screening to the *MAX System*. SLD, Bell Canada and MediaLinx are making a substantial commitment to the interactive healthcare market through the *ScreenLinx Consortium. ScreenLinx* interactive technologies will become a significant factor in reducing healthcare delivery costs through in-home healthcare screening and interactive information.

STRATEGIC RELATIONSHIPS:

- *Bell Canada Healthcare Solutions* and *MediaLinx Interactive* - teamed up with Sound Linked Data to form the *ScreenLinx Consortium*, a project designed to develop and implement on-line

healthcare services.

INTERNATIONAL PARTNERING INTERESTS:

In addition to having an interest in identifying marketing partners to help it sell to medical or occupational health clinics, industrial hearing programs and hearing aid dispensaries, Sound Linked Data is also interested in forming strategic relationships to develop and implement healthcare screening systems over broadband networks. Sound Linked Data would like to form development partnerships with:

- companies that have developed Microsoft Windows-based cardiovascular, pulmonary and vision testing applications software, and
- leading telephone, cable television and satellite companies interested in networked healthcare screening services.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

SLD is in the process of establishing a network of regional distributors in Canada and the US for the *MAX System*. The company is interested in identifying additional marketing partners to help sell to:

- hearing aid dispensaries
- industrial hearing programs
- medical/occupational health clinics

In addition, SLD intends to use the *MAX System* as the basis for the development of a series of on-line healthcare screening services to be made available to the general public. SLD is interested in establishing strategic relationships with leading software, cable TV provider and telecommunications companies throughout the US and Canada that may assist in developing and deploying these services.

SPEEDWARE CORPORATION INC.

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KEY PERSONNEL:

Ian Farquarson - Chairman
Jean-Pierre Théorêt - President
Karen Heater - Vice-President, Sales and Marketing
Tom Gosnell - Vice-President, Product Development
Randy Chambers - Vice-President, Finance

NATURE OF BUSINESS:

Speedware Corporation develops and markets client/server tools for rapid application development, accounting, reporting, and decision support. These tools include *Speedware/4GL* and *Speedware/Designer* for building and implementing transaction-oriented business systems, and *EasyReporter* and *Media* for database reporting and executive information applications.~

COMPANY PROFILE:

YearEstablished:1976
PublicCompany
Number of Employees: 265
Annual Revenues: $ 28.3 million

CompOverviewText~Offices: Speedware's principal offices are located in Montreal and Toronto. 25 sales offices are also located in the United States (16), Canada (3), Australia, France, Holland, UK, Czech Republic, Taiwan and Hong Kong.

Key Customers:
- America United Life Insurance
- American Airlines
- Canadian Tire
- Donohue
- Hydro-Québec
- Levi Strauss
- Martin Marietta
- Netherlands Ministry of Foreign Affairs
- Sensormatic
- Sydney (Australia) Stock Exchange

COMPANY BACKGROUND AND HISTORY:

Speedware Corporation started in 1976 in Montreal, first as Info-boutique, later as Infocentre. Until 1980, it operated a computer service bureau and supplied systems for travel wholesalers. The original software product, Genasys, was created to support in-house programming, then further developed and marketed as Speedware. This tool was targeted at application programmers using languages such as COBOL and designed to speed development of new applications.

Until 1990, the company's products were designed for the HP 3000 computer and its underlying database management system, Image. 1990 saw the first of a new generation of products designed to run on UNIX and other operating systems and to interface with multiple DBMS, such as Allbase, Sybase and Oracle.

Because Speedware products represent the major component of revenue, the company name was changed in 1992 to Speedware Corp. With the development of Speedware Financials and EasyReporter, and the acquisition of Media, the Company focuses on productivity tools for the commercial application development market. Speedware made the transition to a public company with an initial public share offering in November 1993.

BUSINESS AND PRODUCT DESCRIPTION:

Individually, each Speedware product offers a solution to a critical business need. Together, they provide an integrated suite of software technology that supports businesses striving for a global competitive edge.

Speedware Application Development Environment

The Speedware ADE comprises a suite of products for the development, testing, deployment and maintenance of enterprise client/server systems. Speedware integrates a repository-based computer-aided systems engineering toolset (CASE technology) with a 4th-generation programming language and multiple DBMS interfaces. Custom applications generated by Speedware run in a variety of environments and are designed for rapid development, easy migration and smooth integration with older and newer technologies.

Speedware OnTheNet

The Speedware ADE is the springboard for new business-oriented tools designed for Internet applications. This development environment will make it possible to create transaction-based and multimedia applications to conduct efficient business operations over the Internet. Speedware OnTheNet will reduce the complexity of Internet implementation, letting developers work productively with less training while taking advantage of the opportunities offered by new technologies.

EasyReporter

The EasyReporter end user reporting tool combines ease of use with sophisticated reporting capabilities. It runs on a variety of hardware platforms and networks and supports the leading DBMS and file systems. EasyReporter can extract data from mainframes and pass it to popular PC applications for local processing.

Speedware Financials

Speedware Financials is a business accounting solution integrating General Ledger, Accounts Receivable and Accounts Payable modules. It is designed for the global accounting needs of enterprises with multiple business units.

Media Executive Information System

Media is a powerful PC-based executive decision-support system that accesses corporate, local and external data and presents it graphically with the click of a mouse. Managers need no programming skills to access data at global levels, drill down for details and spot exceptions to expected results. Media is easily adaptable to individual users as well as to many kinds of organizations including: government, hospitals, schools, factories, and financial institutions.

Media OnTheNet

The goal of Media OnTheNet is to publish Media graphs and drill-down trees on the World Wide Web. This product will make numerical information easily available on the Internet, taking large volumes of data and presenting it graphically in the style preferred by the user. Media OnTheNet will provide the underlying technology to access and process the data, the Web will provide the viewing interface.~

INFORMATION HIGHWAY

Speedware Corporation has been a long-time user of the Internet for e-mail, management communications and file transfers. Customer Support maintains an electronic bulletin board that logs user queries and supports follow-up activities. Since 1994, Speedware's Web Site has offered online product information and an in-house communications link. Speedware user manuals will soon be available for downloading from the Web.

The company regards the Internet as a key component of its business strategy, covering sales, marketing, new product development, support and customer services.

DEVELOPMENT ACTIVITIES:

Speedware OnTheNet

The strength of the Speedware Application Development Environment (ADE) lies in its proven ability to enhance development productivity. The ADE proposed by Speedware OnTheNet will provide development tools for Internet applications, offering features like:

- Integration with existing business systems
- Isolation of programmers from the complexity of online dynamic Web applications
- Large-scale development capabilities
- Conformance to standards
- Transaction integrity

Speedware products already offer most of the relevant functionality for the Internet. By leveraging this technology, and enhancing it with Internet-specific features, the company plans to market a sophisticated suite of business-oriented tools to create, test and maintain Internet/Web applications quickly and efficiently. Such applications might include:

- Real-time information publishing on the Web.
- Distribution of documents, images and multimedia files from online standard SQL databases.
- Secure transaction systems running on the Web.
- Information analysis tools to search and interpret documents and databases.

Media OnTheNet

The Media OnTheNet project focuses on access and representation of numeric data via Media's database

cube OnLine Analytical Processing (OLAP) and graphical display capabilities. It adds the dimension of quantitative data to the text and multimedia services already available on the Web.

As an EIS solution, Media is well-positioned as a critical component of a data warehousing project. In that context, Media addresses the issue of how to access and use data, both internal and external. Media OnTheNet is intended to support a subject-oriented database, designed with the Internet user in mind, which will optimize the visual presentation of massive quantities of online numerical information.~

STRATEGIC RELATIONSHIPS:

Speedware has alliances with many organizations:

- *Bull HN Information Systems*
- *CANARIE Inc.* - member
- *Hewlett-Packard* - Channel Partner and Client/Server Integrator
- *IBM* - AS/400 Application Development and RS/6000 Reseller
- *Informix* - InSync Partner
- *Memorex/Telex*
- *Microsoft* - Solution Provider
- *Oracle Corporation* - Application Provider
- *Sybase* - Synergy Program (ISV)
- *WRQ* - Reflections VAR

INTERNATIONAL PARTNERING INTERESTS:

Key partnering prospects for Speedware's Internet development activities include:

- Public and private organizations interested in developing online transaction-oriented and multimedia applications for the Internet.
- Public and private organizations that publish large quantities of numerical data or statistics and wish to offer graphical representation of this data to Internet/Web users.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Speedware maintains worldwide channels of sales and support through its network of offices, distributors, value-added resellers and strategic alliances. Speedware products are sold and supported by 18 independent distributors in Latin America, Europe, the Middle East and Asia. The outward focus of these activities provides strong return on investment, as shown by the continuous growth of revenue sources outside Canada.

The US sales offices currently provide the largest market for Speedware products. The company is aggressively expanding its activities in the European/ Mid-East region, led by the London office; Latin America, co-ordinated in Dallas, Texas; and the Pacific Rim area, managed from Sydney, Australia.

SYNAPSE PUBLISHING INC.

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KEY PERSONNEL:

Dr. Andrew Penn - President
Don Cameron - Vice President Finance
Gary Ritchie - Manager, Software Support Department
Clarance Howatt - Manager, R&D Department

NATURE OF BUSINESS:

Synapse Publishing Inc. has produced the JANUS Publishing System, an online publishing system that allows rapid access to current multimedia literature over the Internet or on CD-ROM. Synapse also has developed and maintains the Synapse Medical Library, an Internet-based, comprehensive body of high quality medical literature, including clinical practice guidelines, care maps, textbooks, journals, and sound, image and video collections.

COMPANY PROFILE:

Year Established: 1994
Private Company
Number of Employees: 10

Offices: Synapse is located in Edmonton, Alberta.

Key Customers:
Synapse plans to publish for the following organizations:

- Healthcare Forum
- Health Risk Management Guidelines Series
- Interactive Teleducation Corporation
- Society of Obstetricians and Gynecologists of Canada
- The Canadian Task Force for the Periodic Health Exam
- The International Cochrane Collection
- The Ottawa Stroke Trials Registry
- University of Alberta, Department of Radiology

COMPANY BACKGROUND AND HISTORY:

The Synapse Project originated in the Division of Neurology at the University of Alberta, with support from the

Faculty of Medicine CME and the Department of Family Medicine, but is now supported by the federal CANARIE initiative, the Alberta Research Council and the private sector.

Synapse Publishing Inc. was incorporated in 1994 to establish the first hypertext medical publishing facility on the Internet. The company has also developed the JANUS Publishing System, a cross-platform software system for creating, managing, searching and viewing large volumes of structured hypertext-linked, multimedia literature.

The JANUS Publishing System is currently being beta-tested and will be released to the public in September 1995. Synapse's editors have begun publishing literature using JANUS and the Synapse Medical Library has been launched on the Internet.

BUSINESS AND PRODUCT DESCRIPTION:

The JANUS Publishing System

The JANUS Publishing System is a suite of software tools for the creation and distribution of "hypermedia" literature, i.e. literature containing multimedia elements such as formatted text, images, videos, and sounds, with embedded hypertext links. Built-in accounting and security functions provide the flexibility to vend copyrighted literature across the Internet using "pay-per-view" access, "season's pass" subscriptions, or a combination of both. Powerful search capabilities allow users to find information quickly and efficiently. JANUS can be extended to support client needs, including custom search strategies, data entry windows, or dynamic graphing of data. The JANUS Publishing System includes:

- the JANUS Medical Browser - for viewing literature published with the JANUS Publishing System. An enhanced Web-type browser, it includes robust tools for navigation and search, rich formatting control, and the accounting models needed to manage and sell copyrighted text effectively.
- JANUS Server software - manages the organization of literature in the library, literature access, and access charges. Presently runs under Windows NT.
- Document Management System - manages electronic text for the system. Designed to look after the logistical problems caused when text is "cut up" into pieces for hypertext display, particularly when that text is changing with frequent revisions by more than one author.

The Synapse Medical Library

Synapse Publishing will maintain its own library on the Internet. This library will include a comprehensive body of high quality medical literature, including clinical practice guidelines, care maps, textbooks, journals, and sound, image and video collections. Each document can be linked to reference sources and related documents residing on any server on the Internet. The Library presently includes works from:

- The American College of Physicians
- The American Academy of Neurology

- The International Cochrane Collaboration
- University of Alberta Hospitals

End-users can access literature in a variety of ways. Unlike print literature, JANUS Documents can be purchased in small discrete units as required. Instead of purchasing an entire textbook, journal, or guideline, end-users can purchase only those elements of the literature that they want to view. The end-user pays for each unit viewed, which may be a chapter, video clip, image, or even a small program. Alternatively, a user can purchase entire documents or annual passes for unlimited access to specific bodies of literature.

Contract Publishing Services

Organizations with specific publishing requirements for their own membership will be able to contract with Synapse to edit, publish and mount their material on the Internet or via CD-ROM to be viewed with the JANUS Medical Browser. Synapse's publishing staff are able to convert documents from a variety of electronic formats to JANUS-ready format. Literature can be embellished by the addition of hypertext links into existing reference libraries (e.g. heart sounds, radiological libraries).

On-Line Advertising

On-line advertising will be possible on the Synapse Medical Library in both "Billboard" and "Context- sensitive" advertising formats. Unlike readers of conventional media, Synapse Medical Library users will have the option to view on-line advertisements or turn them off. Should users choose to view on-line advertisements, their rates for viewing literature in the Synapse Medical Library will be reduced.

INFORMATION HIGHWAY

Synapse Publishing Inc. was incorporated to establish the first hypertext medical publishing facility on the Internet. The Synapse Medical Library will include a comprehensive body of high quality medical literature, including clinical practice guidelines, care maps, textbooks, journals, and sound, image and video collections. Each document can be linked to reference sources and related documents residing on any server on the Internet.

End-users can access literature on the Library, purchasing only those elements of the literature that they want to view. The end-user pays for each unit viewed, which may be a chapter, video clip, image, or even a small program. Alternatively, a user can purchase entire documents or annual passes for unlimited access to specific bodies of literature.

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- the JANUS Medical Browser
- JANUS Server software
- Document Management System

Synapse Publishing provides services on a contract basis to customers who wish to have their materials edited, published and mounted on the Internet or on CD-ROM, for viewing with the JANUS Medical Browser.

DEVELOPMENT ACTIVITIES:

Over the next twelve months, Synapse Publishing will be moving quickly to publish a library of high quality medical titles. Plans are already in place to publish libraries for several, highly-respected healthcare organizations. Discussions are underway with other organizations as well. Significant enhancements will also be made to the JANUS Publishing System including changes to the Medical Browser to support additional

file formats and operating systems.

STRATEGIC RELATIONSHIPS:

- Alberta Research Council - development partner.
- CANARIE Inc. - financially sponsored initial development by providing a TD2 award.

INTERNATIONAL PARTNERING INTERESTS:

Synapse's products and services are intended for use by both Canadian and international organizations and end users. The company is very interested in developing further relationships with:

- content providers and publishers - organizations that have libraries of medical information that they would like to publish using the JANUS Publishing System or make available via the Synapse Medical Library.
- on-line service providers - who might collaborate to accelerate or extend the development of the Synapse Medical Library.
- pharmaceutical companies and other medical suppliers - who may wish to advertise on the Synapse Medical Library

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Synapse's products and services are intended for use by both Canadian and international organizations and end users. The company is very interested in developing further relationships with:

- content providers and publishers - organizations that have libraries of medical information that they would like to publish using the JANUS Publishing System or make available via the Synapse Medical Library.
- on-line service providers - who might collaborate to accelerate or extend the development of the Synapse Medical Library.

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KEY PERSONNEL:

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Dennis Billard - Vice President, Sales & Marketing
Ted Ignacy - Vice President, Finance and CFO
Dr. Len Stass - Vice President, Space Systems
Don Weese - Vice President, Engineering
Gord Fraser - Vice President, Network Services
Marilynn Wright - Vice President, Human Resources & Corporate Services

NATURE OF BUSINESS:

Telesat is Canada's national satellite communications company providing telecommunications and broadcast distribution services throughout North America via a fleet of company-owned Anik satellites. Telesat's satellites carry television and radio broadcasting, voice communications, and data communications networks. Canada's major telephone companies use Telesat satellites for backup services on their cross-Canada fibre optic communications networks.

COMPANY PROFILE:

Year Established: 1969
Private Company
Number of Employees: 443 (Dec 1994)
Annual Revenues: $ 208.4 million (1994)

Offices: Telesat's headquarters is in Gloucester, Ontario, near Ottawa. Sales offices are maintained in Halifax, Montreal, Toronto, Calgary and Vancouver, and Teleport complexes are in Toronto, Montreal, Calgary, Edmonton and Vancouver.

Key Customers:

- Automotive Industry (Ford, Chrysler, Nissan, etc.)
- British Aerospace Co.
- Canadian Broadcasting Corporation
- Canadian Satellite Communications Inc. (Cancom)
- Centre National d'Etudes
- CTV Television Ltd.
- Government of Canada
- Motorola
- Stentor Canadian Network Management

COMPANY BACKGROUND AND HISTORY:

Created in 1969, Telesat ushered in the age of satellite communications when it launched its first satellite in 1972. At that time, 50 per cent of Telesat's shares were owned by the Government of Canada with the rest held by other communications carriers. In 1992, the Government sold its shares to Alouette Telecommunications Inc., an alliance of provincial telephone companies and Spar Aerospace Ltd. Telesat is regulated by the Canadian Radio-television and Telecommunications Commission, and operates under the Canada Business Corporations Act. Since its inception, Telesat has been recognized as a world leader in satellite communications and satellite systems management and has become one of the world's most experienced domestic satellite companies.

BUSINESS AND PRODUCT DESCRIPTION:

Canada's national and regional television broadcasters choose Telesat to distribute their programming across the country. Satellite technology has made innovative forms of television such as Pay TV possible, and has expanded educational and children's programming. As well, Telesat provides North American broadcasters with channel access for occasional use broadcasting, e.g. for on-the-spot news reporting from mobile units or coverage of special events of public interest.

Telesat is spearheading Canadian activity in the field of Digital Video Compression (DVC) services for broadcasters. With DVC technology, Telesat satellites can carry several "compressed" video signals where only one could be carried before.

Telesat also serves a growing number of business customers which use satellites to transmit voice, data and image information. With private satellite networks, businesses can interconnect their offices for efficient and flexible communications. As well, locations in a business network not served by conventional telephone systems can have communications via satellite, e.g. a satellite link to a mining site or offshore oil rig can keep the head office informed of remote operations.

Telesat's expertise in the design, procurement, launch and operation of satellites and satellite communications systems is in continuous demand. A record of 20 successful satellite launch campaigns and 25 years of engineering and technical experience have created an international market for Telesat's consulting services and software.

Products and Services:

- *Teleports* (Satellite communications centres) - offer access to satellites for local, regional, national and international communications, for the delivery of data, telephone and broadcast signals.
- *VSAT* (Very Small Aperture Terminal) - is a point-to- multipoint two-way interactive data communications service, which also accommodates LAN-to-LAN connectivity, digital audio broadcasting and business television.
- *Anikom Access* - offers reliable toll-quality voice communications, up to 64 kb/s digital data, as well as low speed in-band computer data and facsimile communications to and from anywhere in Canada. This service supports both private voice network needs and access to the public network, with full signal security.
- *MegaSat* - is an extension of *MegaPlan*™ services for satellite-delivered, high-speed digital communications, with speeds ranging from 56/64 kb/s up to DS1 in 64 kb/s increments.
- *Custom Networks* - Telesat's expertise enables it to plan, design, implement and operate customized networks for North American customers. The systems that Telesat has furnished and installed range from specialized government networks to dispersed retail and manufacturing operations.

- *International Consulting* - expertise includes consulting in satellite procurement, satellite control and communication systems, space segment operations, frequency coordination, earth station and software engineering, system definition, launch services and procurement, network design & implementation, and advice on satellite launch insurance.
- *Transfer Orbit Services* - using software systems developed by the company, and its eastern and western hemisphere tracking stations, Telesat offers worldwide transfer orbit tracking services in either C or Ku frequency bands. Telesat also provides on-station satellite services ranging from tracking, telemetry and command backup to full satellite operations.
- *Flight Dynamics Software (FDS)* - developed by Telesat, the *FDS* is used to concurrently operate a fleet of 7 satellites including 3-axis and spin stabilized satellites. The system is designed to minimize errors, reduce analysis time and optimize manoeuvre strategies to prolong fuel life.

TELESAT AND THE INFORMATION HIGHWAY:

Telesat is Canada's national satellite communications company providing telecommunications and broadcast distribution services throughout North America via a fleet of company-owned Anik satellites. The role of satellite networks is of strategic importance for Canada because a significant proportion of Canadians reside in remote areas. Telesat is one of the leading participants on the ATM-based OCRInet, the first network of its kind in Canada. The CANARIE National Test Network connects this and other ATM networks across the Country. Telesat and the Communications Research Centre's joint initiatives over the past two years have proven the effectiveness of ATM technology over hybrid terrestrial/satellite networks, and demonstrated new applications in the field of medicine, education and the primary resource industry. Internet access over an ATM platform has also been demonstrated.

DEVELOPMENT ACTIVITIES:

Telesat's broadband network activities include developing an infrastructure that will seamlessly interface with the terrestrial network and stimulating new applications that require high speed communications to typically-underserved areas.

Satellite - Terrestrial Integrated Network (SATIN) - Telesat is planning a fully functional, hybrid satellite/ terrestrial network to provide seamless services irrespective of where users are located. In the hybrid mode, satellite use will extend the terrestrial network -- bearer resources, Signaling features and Network management -- to end users. The infrastructure will provide service to off-net and remote locations across Canada, at much higher speeds than offered today.

Experimental Hybrid Network and the Applications of Tomorrow - Together with evaluations in their laboratory test-bed to determine the impact of satellite links on ATM network performance, Telesat is partnering with other organizations to demonstrate real applications over a hybrid satellite/terrestrial network.

- *Tele-consultation* - linking remote nursing stations with experts in hospitals, aided by video cameras, x-ray images and medical probes.
- *Tele-medicine* - surgical procedures performed at remote locations under the guidance of specialists, using medical probes attached to the patient at the urban medical facility.
- *Distance Learning* - a two year pilot, starting late 1995, to provide social and educational services to four remote communities.
- *Telerobotics* - remote control of robotics and heavy machinery over satellite. A large scale remote mining pilot project is being planned.

CANARIE Project Activity - Telesat is a partner in the consortium lead by VISTAR to develop satellite ATM terminal components. Telesat was involved in the specification of the ATM based MF-TDMA access scheme and the testing and verification of T1 and DS3 ATM satellite links. Telesat will be testing the satellite Terminal equipment developed by MPR Teltech.

STRATEGIC RELATIONSHIPS:

- *National and Regional Television Broadcasters* - Telesat is the carrier of choice for the Broadcasting industry, providing services that range from regional network feeds to national program distribution.

- *Stentor* - Telesat is working closely with the owner companies of Stentor to integrate satellite and terrestrial communications networks.
- *Motorola* - awarded Telesat a multi-year contract to design and construct three telemetry, tracking and command antenna stations as part of the IRIDIUM communications systems.
- *Hughes Network Systems* - Telesat makes extensive use of Hughes Network Systems products within its Canadian networks.
- *Pasifik Satelit Nusantara* (PSN) - Indonesia - Telesat holds 10% of PSN, a company operating satellites in the Asia Pacific region.
- *Paracom Satélites S.A.* - Argentina - Telesat holds a minority interest in Paracom

INTERNATIONAL PARTNERING INTERESTS:

Telesat has partnered with leading satellite organizations in the US (Intelsat, COMSAT) to define the satellite and terrestrial hybrid networks to meet the emerging needs in the "Information Highway" era. This activity will ensure that standards-based international solutions are adapted both in Canada and other parts of the world.

Telesat is interested in developing working relationships with leading vendors of new technologies, both to experiment with new products/technologies and to influence their development. Current partners include: ADC Kentrox, Cisco, Hardware Canada Computing, Hughes Network Systems and Insoft

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Telesat's business operations focus on leasing capacity on its Anik satellites and selling telecommunications services directly to Canadian companies, governments and organizations.

Telesat's satellite communications and satellite systems management expertise is provided to satellite operators worldwide on a consulting basis, and has earned international recognition amongst satellite operators, manufacturers, launch providers, and the space, finance and insurance community for its excellence, having already satisfied clients in France, Germany, Hong Kong, Indonesia, Mexico and the United Kingdom.

THE ESYS CORPORATION

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KEY PERSONNEL:

Grant Lakeman - President
Rob Park - V.P. Operations
Don McCormick - V.P. Sales and Marketing

NATURE OF BUSINESS:

The ESYS Corporation develops and sells standards- based electronic mail software systems for the enterprise. ESYS employs Internet standards that enable large scale geographically dispersed organizations to deliver commercial grade e-mail services.

COMPANY PROFILE:

Year Established: 1986
Private Company
Number of Employees: 112
Annual Revenues: $ 8 million (1995)

Offices: The ESYS Corporation maintains its corporate headquarters in Edmonton, Alberta and a sales office in Las Altos, California.

Key Customers:

- Alberta Power Ltd.
- Baylor University Texas
- Boston College
- CHEST (Consortium for Higher Education) - UK
- Cross Cancer Institute
- Duke University, Fuqua School of Business
- Fluke Corporation
- Grande Yellowhead Regional School Districts
- The Winter Cities Network
- University of Toronto

COMPANY BACKGROUND AND HISTORY:

The ESYS Corporation is a subsidiary of the ISA Corporation of Alberta. During its 12 years of operations, ISA has established a reputation as a world class provider of standards-based systems integration services.

By 1990, numerous clients were expressing a need to complement their standards-based networks with a scalable, feature rich, open systems messaging component. Serving this requirement became a significant component of the ISA set of product offerings. In January of 1995, The ESYS Corporation was created as a new corporate entity and given the task of developing and marketing standards-based enterprise electronic mail systems. The company's client base primarily consists of large scale, geographically-disbursed, private sector clients and post secondary academic institutions.

BUSINESS AND PRODUCT DESCRIPTION:

The ESYS Corporation develops and sells Simeon, an electronic mail backbone for building enterprise mail systems. Simeon was designed as a system for establishing enterprise-wide mail services, including both local and remote communications within the corporation and also communications with external organizations and individuals.

Simeon is 100% standards-compliant and is designed as a client/server application. It consists of several different applications running on one or more machines on a network, including: the Message Service (MS); the Message Transfer Agent (MTA); and the Mail User Agent (MUA). Each component communicates with the others using application protocols. These comply with the Internet Mail System Standard produced by the IETF and the Open Systems Interconnection (OSI) Message Handling System (MHS) Standard produced by the International Standards Organization.

Simeon Message Service (MS) Set

A Message Service is a collection of messages stored on a disk (i.e. a message store or postoffice). The Simeon MS Set consists of a set of applications for providing a message service to access mail over standards-based networks. Simeon MS Set supports:

- message formats - Internet (MIME, RFC822), OSI (X.400 P2)
- communications protocols - Internet Message Access Protocol (IMAP), future support for OSI (X.400) message access protocol (P7, LMAP)
- message service management - support for remote management of Message Services from a Message Service administration interface
- security features - secure network connections and Message Service interaction, using Internet Kerberos authentication server information, X.509 authentication server information, or operating system dependent authentication and security.
- platforms - runs on UNIX and Open VMS.

Simeon Message Transport Agent Set (MTA)

The Simeon MTA Set consists of a set of message transport agents for delivering mail over standards- based networks. Like Simeon MS Set, it offers the same support for various machine types, protocols and message formats. Simeon MTA Set also provides support for:

- multiple transport types
- message routing
- gateway routing
- distribution list management
- advanced security features

Simeon Message UserAgent Set (MUA)

The Simeon MUA Set consists of a set of remote (client) mail user agents (user interfaces) for managing and composing messages in a standards-based network environment. It provides basic mail functionality along with many advanced features such as support for:

- multipart multimedia messages
- message folder management
- address management
- shared mail boxes
- access to messages stored on multiple machines
- message acknowledgements

The Simeon MUA Set also supports Privacy Enhanced Mail (PEM) features, including secure public key encryption, digital signing and digital time-stamping of messages. The Simeon MUA Set offers workflow management capabilities including sequential message routing and form messages. Platform support is available for: Microsoft Windows, Apple Macintosh, UNIX (most variants), Microsoft NT and IBM OS/2.

INFORMATION HIGHWAY

The ESYS Corporation develops and sells Simeon, an electronic mail backbone for building enterprise mail systems. Simeon was designed as a system for establishing enterprise-wide mail services, including both local and remote communications within the corporation and also communications with external organizations and individuals. Simeon is scaleable and will support a wide range of organizations from the very large (50,000 + users) to the very small (fewer than 100 users).

Simeon is 100% standards-compliant and is designed as a client/server application. It consists of several different applications running on one or more machines on a network, including:

- Simeon Message Service (MS) Set consists of a set of applications for providing a message service to access mail over standards-based networks. MS supports a number of different machine types, protocols and message formats. It is interoperable with many Internet and OSI mail user agents.

- Simeon Message Transport Agent Set (MTA) consists of a set of message transport agents for delivering mail over standards-based networks. Like MS, it offers the same support for various machine types, protocols and message formats. MTA also provides support for: multiple transport types; message routing; gateway routing; distribution list management; and advanced security features.

- Simeon Message UserAgent Set (MUA) client interface consists of a set of remote mail user agents for managing and composing messages. It provides basic mail functionality along with many advanced features such as support for: multipart multimedia messages; message folder management; address management; shared mail boxes; access to messages stored on multiple machines; and message acknowledgements. The Simeon MUA Set also supports Privacy Enhanced Mail (PEM) features, including secure public key encryption, digital signing and digital time-stamping of messages. The Simeon MUA Set offers workflow management capabilities including sequential message routing and form messages. Platform support is available for: Microsoft Windows, Apple Macintosh, UNIX (most variants), Microsoft NT and IBM OS/2.

STRATEGIC RELATIONSHIPS:

- Bittco Solutions Inc. - integrating Bittco's electronic whiteboard facility with Simeon for wide area conferencing over the Internet

- Carnegie Mellon University - development partners on the Internet Message Support Protocol (IMSP) which has been submitted for standards approval to the Internet Engineering Task Force (IETF)
- Corporate Software and Technologies Inc. - provide integrated enterprise scheduling and calendaring software for use with Simeon.

INTERNATIONAL PARTNERING INTERESTS:

The ESYS Corporation sells its software on a direct basis, using sales representatives and over the Internet, and on an indirect basis through third party channels. The company is aggressively expanding its third party arrangements and is very interested in identifying additional resellers throughout the world who are interested in reselling Simeon, such as:

- Internet service providers
- OEM candidates - software and hardware companies
- PC software product distributors and resellers
- systems integrators - who provide planning assistance for enterprise messaging, particularly the implementation of OSI-based systems

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

The ESYS Corporation sells its software on a direct basis, using sales representatives and over the Internet, and on an indirect basis through third party channels. The company is aggressively expanding its third party arrangements and is very interested in identifying additional resellers throughout the world who are interested in reselling Simeon, such as:

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KEY PERSONNEL:

Peter J. Fraser - President
Kevin P. Martin - Vice President Development
Keith Dorken
Vice President Marketing

NATURE OF BUSINESS:

Thinkage Ltd. offers a demonstrated expertise in the development of software tools, particularly packages which let companies take full advantage of the Internet and World Wide Web. Offering quality software design and excellence in documentation, Thinkage has an ability to develop for computing systems other than Windows and UNIX, such as platforms with non-
standard architectures and O/S support.

COMPANY PROFILE:

Year Established: 1991
Private Company
Number of Employees: 12 (plus 1-3 co-op students from the University of Waterloo)~
Annual Revenues: $ 1.7 million

Offices:Thinkage's offices are in Kitchener, Ontario.

Key Customers:

- Air Canada
- Bell Canada
- Bull HN and Bull SA
- General Electric
- General Motors
- International Brotherhood of Teamsters
- Oklahoma City and many other U.S. municipalities
- Prentice-Hall
- San Francisco City College and many other educational institutions
- US Federal Government and the US Military Services

COMPANY BACKGROUND AND HISTORY:

Much of Thinkage's software was designed and implemented by the Software Development Group (SDG) of the University of Waterloo. A change in university policy led to an amicable separation in 1991, when the personnel of SDG left UW to form Thinkage Ltd. Thinkage assumed ownership of SDG's software, and benefited from the long-standing business relationships that SDG had developed, particularly with Bull and General Electric.

Since its creation as an independent company, Thinkage has continued to upgrade existing software assets while adding to its product line, especially using the Internet expertise acquired while part of the university.

BUSINESS AND PRODUCT DESCRIPTION:

Thinkage sees itself as the computer industry's equivalent of a tool-and-die maker, i.e. a company that produces basic and specialized tools to help other computer professionals make their own products.

WORLD WIDE WEB DEVELOPMENT SOFTWARE:

Thinkage is currently developing a package of software tools to help the designers of World Wide Web pages. These tools will assist with checking for incorrect HTML code, examining the validity of http links, "walking" structures of hyperlinks, and so on.

The company is also developing a Web Catalog package. This package is aimed at helping companies use the World Wide Web as a marketing channel. The Web Catalog can scan a company's existing database of product information and extract appropriate data to produce a set of fully cross-referenced Web pages. These Web pages can then serve as a catalog for Internet users interested in the company's products. Users can browse through the catalog by manufacturer, by type of product or by their own search criteria ("Show me all modems for under $300"). If the user wants to purchase one or more items, the Web pages help the user prepare a purchase request, then submit that request to the company. The Web catalog can be updated whenever the company updates the main product database, simply by running the information extraction program again. In this way, the Web Catalog package can give companies a complete on-line order entry system, without forcing them to change existing business practices.

Custom Consulting Services:

Thinkage provides custom consulting and software development services in a number of fields:

- Internet and the World Wide Web - Thinkage can help companies realize the full potential of the Internet. Assistance can range from the simple job of writing Web pages, to offering seminars on the Internet, to developing custom applications

- Technical Writing - Thinkage has maintained a fully cross-referenced on-line documentation facility for almost twenty years, in order to support its own products. This depth of experience makes it possible for Thinkage to offer documentation services to other companies, both for on-line help and for conventional hard-copy manuals. Technical writing and documentation customers have included TOSC International, Mortice Kern Systems (MKS), Prentice-Hall, SAMS, and WatCom.

- Custom Software Development - Thinkage has extensive experience with mainframe software development, software porting, and development for non-standard, less popular operating systems. Thinkage is ready to come to the aid of anyone developing software for platforms outside the mainstream. The company understands the problems and has the experience to find solutions.

Thinkage has licensed other vendors to market and distribute a number of its software packages. These packages include:

- MAIL8 Electronic Mail Package - for the GCOS8 operating system
- Thinkage ANSI C Compiler - ANSI standard C compilers with the ability to run on architectures that are usually considered unfriendly towards conventional C program structures.
- Thinkage ISO Pascal Compiler
- UW Tool Package - a collection of dozens of software tools for the GCOS8 operating system.
- FXFER File Transfer Package - offers reliable file transfer between different computing platforms, especially between GCOS8 and UNIX machines.

Currently under development are portable LINT and YACC packages, and an 80X86 virtual machine simulator. Further information on any of Thinkage's software packages can be found at the company's World Wide Web site:

http://www.thinkage.on.ca/products.html

INFORMATION HIGHWAY

Thinkage personnel have been actively involved with "the Net" since the early 1980's, having participated in the University of Waterloo's work with ARPAnet. Despite the vast changes in the Net since then, Thinkage has continued to stay on top of new developments in the Internet world.

The company's most important Internet-based product is The Web Catalog Project, a software package that allows companies to use the World Wide Web as a marketing channel. Thinkage's Web Catalog software begins by scanning a company's existing database of product information, extracting all the details required to create Web pages describing the products. These Web pages form a fully cross-referenced on-line catalog for the company's product line. Internet users can search this catalog by manufacturer, by product type (e.g. modems), or by search criteria ("Show me all modems that cost less than $300"). Users can also see full-colour photos of each product (provided the user has a Web browser with graphic capabilities). If customers want to purchase one or more items, the Web Catalog prompts them for appropriate information and eventually submits a purchase request to the vendor.

This type of software obviously requires substantial security measures to protect both the purchaser and the vendor. Some of the security will be provided by secure Web browsers, like the forthcoming release of NetScape. However, there are numerous other considerations that are not addressed by such browsers. Thinkage, however, has the experience and the know-how to frustrate potential crackers with first-rate security measures.

DEVELOPMENT ACTIVITIES:

Thinkage is currently assembling a package of tools for those who must maintain Web pages. These tools include a program for checking HTML code against the versions of HTML accepted by various popular Web browsers, and a tool for checking http links to ensure that they are valid. In an effort to make it easier for users to extract information via the Web, Thinkage is also creating a "Web walker" that can begin with one Web page and capture copies of all linked pages, all pages linked to those pages, and so on (down to a specified search level or up to a specified amount of search time). This tool will let a user start a "Web walk" at night and then come back in the morning to read what had been obtained, without having to suffer through the delay of file transfers or the uncertainty of, "Have I really clicked on every available link?"

STRATEGIC RELATIONSHIPS:

- Bull HN (subsidiary of Bull SA) - for more than twenty years, Thinkage personnel have supplied Bull with important software packages, including UW Tools, MAIL8 and compilers for C, Pascal, and several other programming languages. Bull markets and distributes these packages to their clients around the world. Bull has also turned to Thinkage for the development of custom software packages and for customized enhancements to Thinkage software. In the past, Bull has also asked Thinkage to review Bull's own software designs, in light of Thinkage's extensive experience with Bull's GCOS8 operating system.

INTERNATIONAL PARTNERING INTERESTS:

Thinkage's greatest strength is software development. However the company realizes that it has neither the experience nor the personnel to embark on major marketing efforts. Therefore, Thinkage has a strong interest in identifying marketing partners who can sell its products globally and provide a liaison with any resulting customers.

Thinkage is also looking for development partners who can use the company's software in their own development activities, or incorporate Thinkage software into integrated product offerings, particularly in Internet-related packages. Thinkage is open to the possibility of creating joint software packages with other small developers; collections that might combine Thinkage's Internet tools with those from other sources.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Currently, Thinkage has customers in Canada, France, and the US. However, the company is interested in and prepared to work with clients anywhere in the world who would like to tap into Thinkage's experience and expertise to develop new software products.

TIMESTEP CORPORATION

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WWW: http://www.timestep.com

KEY PERSONNEL:

Tim Hember - President
Tony Rosati - VP Sales & Marketing
Brett Howard - VP Engineering
Debi Rosati - VP Finance

NATURE OF BUSINESS:

TimeStep Corporation develops and markets leading-edge computer and communications security solutions for corporate, financial, and government networks. TimeStep is focused on developing network security solutions which will enable emerging business applications over open communications networks. TimeStep considers manageability, ease of deployment and standards compliance of paramount importance in the development of new products.

COMPANY PROFILE:

Year Established: 1991
Private Company
Number of Employees: 30
Annual Revenues: $ 1 million (1994)

Offices: TimeStep Corporation's head office is located in Kanata, Ontario. US operations are headquartered in Herndon, Virginia..

Key Customers:

- AT&T
- Bell Sygma - Canada
- Boeing
- Chrysler Corporation
- Department of Foreign Affairs - Canada
- Department of National Defense - Canada
- Department of Justice - US
- Defense Information Systems Agency - US

COMPANY BACKGROUND AND HISTORY:

TimeStep Corporation was founded in March 1991 to provide specialist engineering consulting services in cryptography for organizations developing world-wide information sharing and communications systems.

TimeStep became affiliated with Newbridge Networks Corporation in January 1994. With the Newbridge affiliation and corresponding new capital investment, TimeStep turned its focus towards the development and manufacture of network security products for marketing to the users of large corporate, financial and government networks. The company is a center for excellence for cryptography and produces products that conform to industry-wide communication and security standards. TimeStep is an active participant in the Internet Engineering Task Force (IETF) IP security (IPSEC) working group.

BUSINESS AND PRODUCT DESCRIPTION:

The TimeStep business strategy is to provide comprehensive network security solutions that respond to the increasing demand for secure digital communications as corporations and governments develop world-wide information sharing and communications systems.

The *PERMIT*™ family of products is unique in the market because it's the first to deliver a complete, centrally managed network security solution that allows effective large-scale deployment of security, Enterprise-wide from desktop-to-desktop. The *PERMIT*™ technology enables organizations to deploy communications security throughout the Enterprise network, independent of both the user application and the network infrastructure. TimeStep's *PERMIT*™ technology provides data confidentiality and integrity to prevent the interception and modification of data transmissions. The *PERMIT*™ security solution enables the use of unsecured public networks and workstations in a secure environment. Completely transparent to users and their applications, this solution is centrally managed and is designed to support all major networking protocols, *PERMIT*™ may also add access control to those stations where access is not restricted by the operating system. The *PERMIT*™ architecture provides several interoperable components to meet the security needs of the enterprise. *PERMIT*™ security is made possible by the combination of effective, low cost hardware and easy-to-use transparent software.

Products:

- *PERMIT*™ *9010 Secure Network Management System (SNMS)* - is a PC Windows™-based network management application for in-band monitoring and control of *PERMIT*™ node security devices, enterprise-wide. *PERMIT*™ *9010 SNMS* uses the industry standard Simple Network Management Protocol (SNMPv2) for *PERMIT*™ node configuration, certificate and key management, alarm and event monitoring and reports generation. The *SNMS* offers a graphical user interface (GUI) for viewing and managing all, elements of the organization's security policy.
- *PERMIT*™ *2010 PC LAN Security* - provides access control and transparent network layer security for any standard TCP/IP stack. The securing of node communications is performed at the network layer within the network protocol stack on the workstation. *PERMIT*™ *2010* will secure user data without impacting the user's application and allow the secure data to traverse the network independent of network topology. *PERMIT*™ *2010* provides the most effective commercial security available for the PC LAN environment.
- *PERMIT*™ *2018 Secure Remote* - a software-only application designed to secure remote TCP/IP communications to the LAN via the Point-to-Point Protocol (PPP). This application is fully compatible with other *PERMIT*™ components and contains all the functionality of *PERMIT*™ *2010* in software.
- *PERMIT*™ *1060 Secure Bridge* - a stand-alone bridge the size of a standard hard cover book and is designed for secure LAN segmentation and interconnection. This LAN-to-LAN bridge encrypts and decrypts IP data to any *PERMIT*™ device. As a traditional bridge, network efficiency can be increased by segmenting the LAN into separate but communicating sections. The *PERMIT*™ *1060* links separate LANs together so network devices on all LANs can communicate with each other securely. Standalone workstations can also connect securely to the LAN via the *PERMIT*™ *1060*.

TIMESTEP AND THE INFORMATION HIGHWAY:

TimeStep Corporation develops and markets leading-edge computer and communications security solutions for corporate, financial, and government networks. TimeStep is focused on developing network security solutions which will enable emerging business applications over open communications networks. TimeStep considers manageability, ease of deployment and standards compliance of paramount importance in the development of new products.

Network Security: An Enabling Technology for Business and Government

TimeStep's *PERMIT*™ network security hardware and software products enable the use of otherwise unsecure public network, such as the Internet, for commercial applications. TimeStep's *PERMIT* technology provides data confidentiality and integrity to prevent the interception and modification of data transmissions. The *PERMIT*™ technology enables organizations to deploy communications security to the PC desktop, throughout the Enterprise network, independent of both the user application and the network infrastructure.

DEVELOPMENT ACTIVITIES:

PERMIT™ *Network Layer Security (NLS) Toolkit* is an software development application and application programming interface (API) which enables organizations to easily integrate the *PERMIT*™ network-layer security software for TCP/IP applications and to integrate *NLS* for other networking protocols (e.g. IPX, SNA, DECnet, Appletalk, etc.) to meet their network security requirements. TimeStep expects the *NLS Toolkit* to be among the most successful network security products by enabling ubiquitous deployment of a standards-based communication security solution for the multi-protocol networking environment.

STRATEGIC RELATIONSHIPS:

- *Newbridge Networks Corporation* - TimeStep's affiliation with Newbridge provides TimeStep with access to Newbridge technology, services and distribution channels.

INTERNATIONAL PARTNERING INTERESTS:

TimeStep is interested in forming a wide variety of partnerships and alliances with other companies interested in network security. Key international partnering prospects include:

- co-operative marketing and market development opportunities
- co-operative product development and technology alliances
- major system integrators with clientele in the government, banking/financial services, manufacturing and medical/legal markets
- value-added network providers for EDI and electronic commerce applications.
- value-added resellers with expertise in the field of information security

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

TimeStep sells its products on a direct basis and via value-added resellers and system integrators. The company is expanding these relationships with a focus on Canada, Europe, the Pacific Rim and the United States.

UNIVERSAL SYSTEMS LTD.

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WWW: http://www.universal.ca

KEY PERSONNEL:

S.E. Masry, Ph.D - President
Rick Nyarady - Marketing Manager
Tim McCarthy - Manager - Software Development
See Hean Quek - Manager - Systems Administration

COMPANY PROFILE:

Year Established: 1979
Private Company
Number of Employees: 50+

NATURE OF BUSINESS:

Universal Systems Ltd. is a software and systems integration company that develops, supports, and markets CARIS, a Geographic Information System (GIS) and digital mapping software. Universal Systems also carries out GIS research and development projects.

Offices: Universal Systems has its headquarters and laboratories in Fredericton, New Brunswick. Other offices are located in Vancouver (BC) and Enschede, The Netherlands.

Key Customers:

- Canadian Coast Guard
- Canadian Hydrographic Service
- Port of Singapore Authority
- Province of New Brunswick
- Raytheon Equipment (Canada and US)
- Royal Malaysian Navy
- Royal Netherlands Navy
- Saskatchewan Geological Survey

COMPANY BACKGROUND AND HISTORY:

Universal Systems was incorporated in 1979. The company supports a variety of clients ranging from private companies to municipal, provincial/state, and federal levels of government. The growing client base spans

the globe and includes companies in Africa, Australia, Europe, North America, the Middle East and the Pacific Rim. From its modest beginnings, Universal Systems has grown into an internationally recognized producer of spatial information systems software.

BUSINESS AND PRODUCT DESCRIPTION:

Universal Systems Ltd. develops, markets and supports three software products:

- CARIS (Computer Aided Resource Information System) - supports the digital cartographer and Geographic Information System (GIS) manager. Now available in both Windows and UNIX versions, CARIS offers an integrated GIS solution with functionality including:

  - database management
  - attribute inquiries
  - spatial analysis
  - image analysis
  - terrain analysis
  - network analysis
  - top quality map generation

- SAMI (Semi-Automated Mapping Input) - a computer-assisted digitizing system. It converts raster data to vectorized line data semi- automatically and facilitates fast, manual digitization of text, symbols, soundings, and spot heights.

- CARIS^{++} Object Development Toolkit (CARIS ODK) - an object-oriented toolkit providing the functionality of the complete CARIS GIS package for programmers. CARIS^{++} is designed to provide a total solution for GIS application developers allowing customised applications to be created to suit the user. CARIS^{++} is currently available in C^{++} and Objective C and on SOLARIS/HP/ALPHA, NeXT, and MS Windows platforms. Applicable compilers include GNU/NATIVE and MS Visual C^{++}. CARIS^{++} has built-in support for object-action selection mechanisms, IMAGE/VECTOR displays, drawing tools (zoom, pan, overview) and WYSIWYG plotting and can be easily integrated with graphical user interface development tools, database management systems (either relational or object-oriented) and many convenience libraries.

Universal Systems recently introduced CARIS/MD as an interface between Oracle7 MultiDimension and the CARIS suite of GIS software modules. CARIS/MD utilizes Oracle7 MultiDimension as the data source for all spatial and attribute data. Oracle7 MultiDimension is a set of utilities that enable multi-dimensional data to be stored, accessed and retrieved quickly and efficiently in the Oracle7 relational database management system. Data is stored in Oracle7 MultiDimension as a continuous geographic coverage. CARIS/MD allows users to dynamically define which area of the continuous coverage they wish to view.

Universal Systems has also adapted CARIS for use in viewing maps over wide area networks, specifically the World Wide Web portion of the Internet. The CARIS Wide Area Data Browser allows casual users to quickly manipulate map files on the Internet. With the CARIS Browser, private companies and government agencies can distribute map-related information as a public service or to paying clients.

Universal Systems Ltd. can provide advisory services on a wide range of GIS issues. These include the creation and management of spatial attribute databases, system design and analysis, project proposals and feasibility studies, hardware and software technical evaluations, programming, and system installations.

INFORMATION HIGHWAY:

Universal Systems has adapted its CARIS (Computer Aided Resource Information System) for use in viewing maps over wide area networks, specifically the World Wide Web portion of the Internet.

The CARIS Wide Area Data Browser allows casual users to quickly manipulate map files on the Internet. With the CARIS Browser, private companies and government agencies can distribute map-related information as a public service or to paying clients.

The CARIS Wide Area Data Browser:

- is built around a WWW server (httpd daemon) - it can be integrated into an existing WWW server since there are no modifications to the server process.
- compatible with common WWW front end programs such as Mosaic and Netscape - this allows the CARIS Browser to be used on a PC, a UNIX workstation or a Macintosh.
- is completely configurable by the server administrator - the administrator controls what data is available to users. Attribute data and digital photographs can be linked to the map for display.
- has complete accounting services - the server administrator can track usage of server services. This information can be used to bill subscribers if the service is not for free.
- allows complex database queries - the CARIS Browser will display the results of complex queries. The amount and type of information is controlled by the server administrator and not the browser software.

DEVELOPMENT ACTIVITIES:

Universal plans to extend the capabilities of the Data Browser to allow for GIS analysis of data provided on the Internet. Advantages from this will include:

- expanding the use of the data gathered by the data suppliers;
- easy access to users, via a wide area network, to the data; and
- use of a standard wide area network interface software that requires little or no GIS expertise to operate.

STRATEGIC RELATIONSHIPS:

- Alpha Information Systems (Canada)
- AV&T (Singapore)
- Control Data (Greece)
- Geograf (Portugal)
- InteliGIS (US)
- MIT (The Netherlands)
- Siemens Nixdorf (Germany)
- SSang Yong Computer (South Korea)

INTERNATIONAL PARTNERING INTERESTS:

For its CARIS Wide Area Browser development activity, Universal Systems is seeking :

- Strategic Partners who are capable of providing GIS solutions based on CARIS as well as providing support, training, and GIS consulting services; and
- System Integrators who will incorporate CARIS into third party applications usingCARIS development tools.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Universal Systems markets its software products on a worldwide basis through an international network of Strategic Partner resellers and direct sales offices found in Asia, Canada, Europe, the Middle East, and the United States. Universal Systems is very interested in expanding this network of resellers and would like to identify organizations, particularly in the United States and Mexico, that would help sell and support the company's products.

Also of interest to Universal are organizations who would like to develop applications for re-sale based on CARIS^{++} ODK.

VISIOCOM INC.

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KEY PERSONNEL:

Christian Richard - President
Yvon Nazon - VP Engineering and Operations
Normand Chartrand - Administrator
Charles Terreault - Consellor and Administrator

NATURE OF BUSINESS:

Visiocom designs and builds videoconferencing equipment and fully-interactive multimedia service kiosks. The Visiocom IVT (innovative videoconference terminal) is a world class product offering a simplified user interface and superior functionality, with high fidelity sound, integrated data transfer, conferencing and multimedia functions.

COMPANY PROFILE:

Year Established: 1993
Private Company
Number Employees: 11

Offices: Visiocom's head office and manufacturing facility are located in Laval, Quebec.

COMPANY BACKGROUND AND HISTORY:

Visiocom Inc. was founded in 1993, initially offering consulting services and serving as a distributor of Ascom Timeplex videoconferencing products. In November 1994, the company changed its direction and began the development and manufacture of its own line of videoconferencing products. A team of experienced engineers and managers from the telecommunications industry were assembled and outside venture financing was raised. Metalink Communications, a research organization focused on multimedia software, is a part owner of Visiocom Inc. and co-operates in development.

While Visiocom is still in its development phase, the company has already designed and begun building the IVT product line. Visiocom recently won a contest organized by l'Institut de Design de Montreal, for the packaging of a videokiosk and for the personal videoconference version of this product.

BUSINESS AND PRODUCT DESCRIPTION:

In developing its line of products, Visiocom set out to completely redefine the ergonomics of videoconference tools so as to enhance their performance, reduce their cost and most importantly, to simplify their use. Their

efforts have resulted in the creation of the IVT (innovative videoconference terminal) line of products, the first members of which are Videoconferencer II and Grouper II.

Videoconferencer II

Visiocom's next generation Videoconferencer II video conferencing product incorporates a large screen, an easy-to-use interface control system, a high fidelity sound system and an advanced set of conferencing and data communications features. Videoconferencer II offers:

- an advanced screen design - Visiocom has combined two conventional screens into a single sixty-inch screen (1,000 line definition), equipped with a multiscreen projector. One single screen with multiple window projection provides animated video images. Clicking on the window of choice allows users to see contacts in actual size.

- ease-of-use - the graphics interface, which is standard on all models, is very easy-to-use. Together with clearly understandable icons, the mouse control system is capable of controlling up to eight video machines, eliminating the need for remote control units or complex consoles.

- high fidelity sound - users can hear and be heard with the highest fidelity thanks to the 24 watts of power available. Visiocom's ClearSOUND™ digital audio mixer is capable of processing tens of microphones simultaneously.

- data communications - Videoconferencer II has been designed to allow users to maximize their use of digital telephone lines. In addition to video- conferencing, the system enables high-speed transmissions on local networks and the Internet, thereby making exchanges smoother and more efficient. Videoconferencer II can even be used as a telephone or digital fax machine (feature available at the end of 1995). High-definition photos can be transferred and printed during the videoconference.

- conferencing - Videoconferencer II allows users to work from any distance on shared files with colleagues

- remote diagnostics - Visiocom's terminals are equipped with long-distance troubleshooting capability. Visiocom is able to provide assistance and answer calls in less than two hours, 7 days a week, 24 hours a day, via its worldwide customer service network.

Grouper II

Grouper II is the smaller, portable member of Visiocom's IVT product line. Grouper II is equipped with a 31-inch screen and has been designed for small groups. The Grouper II system features a sturdy cabinet and large casters that allow it to be easily moved around.

Other Products and Services

Thanks to its association with manufacturers in related fields, Visiocom is also able to offer complementary products and services such as microconferencing and the development of interactive booths. In some cases, Visiocom will alter its own products to adapt them to customers' fields of activity or specific requirements.

INFORMATION HIGHWAY

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developing its line of products, Visiocom set out to completely redefine the ergonomics of video- conference tools so as to enhance their performance, reduce their cost and most importantly, to simplify their use. Their efforts resulted in the creation of the IVT line of products, the first members of which are Videoconferencer II and Grouper II.

Videoconferencer II

Visiocom's next generation Videoconferencer II video conferencing product incorporates a large screen, an easy-to-use interface control system, a high fidelity sound system and an advanced set of conferencing and data communications features. Videoconferencer II offers:

- an advanced multiple window, large screen design
- an easy-to-use graphics interface, with a clickable mouse control system
- high fidelity sound
- data communications capabilities that allow for other uses of the system's digital telephone lines
- superior multimedia data conferencing capabilities
- remote diagnostics

Grouper II

Grouper II is the smaller portable member of Visiocom's IVT product line. Grouper II is equipped with a 31-inch screen and is designed for small groups. The Grouper II system features a sturdy cabinet and large casters that allow it to be easily moved around.

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DEVELOPMENT ACTIVITIES:

Visiocom is presently developing a videoconference system to work on wide band ISDN lines. These products will be of particular interest to universities where they will allow more frequent face-to-face interaction and faster data transfer capabilities. This development will utilize the same simplified interface designed by Visiocom and Metalink for the Videoconferencer II and the Grouper II members of the Visiocom IVT family.

STRATEGIC RELATIONSHIPS:

- CANARIE Inc. - member
- Government of Quebec - economic partner

Visiocom is also in partnership discussions with several telecommunications companies, regarding both product support and sales/marketing initiatives.

INTERNATIONAL PARTNERING INTERESTS:

Visiocom is interested in locating additional partners internationally including:

- distributors and resellers - interested in selling Visiocom's IVT products
- hardware manufacturers - interested in licensing or OEM agreements with Visiocom

- multimedia developers - interested in using Visiocom's equipment as part of their multimedia delivery systems
- telecommunications service providers - interested in using Visiocom's products as part of their service offerings

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

Visiocom is expanding its office locations across Canada and is completing a distribution agreement in Switzerland. Visiocom is interested in locating additional partners such as:

- distributors and resellers - interested in selling Visiocom's IVT products
- hardware manufacturers - interested in licensing or OEM agreements with Visiocom
- multimedia developers - interested in using Visiocom's equipment as part of their multimedia delivery systems
- telecommunications service providers - interested in using Visiocom's products as part of their service offerings

VISTAR TELECOMMUNICATIONS INC.

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KEY PERSONNEL:

Dr. Michael Zuliani - President and CEO
Dr. Robert Breithaupt - Vice President
Mr. David Ellis - Chief Financial & Administrative Officer
Mrs. Tina Lachance - Executive Assistant

NATURE OF BUSINESS:

VISTAR Telecommunications Inc. is a Canadian research and development company established as a world class center of excellence for advanced systems and applications development in the field of satellite communications with particular emphasis on opportunities that arise through the integration of satellite and terrestrial technologies.

COMPANY PROFILE:

Year Established: 1993
Private Company
Number of Employees: 25

Offices: VISTAR Telecommunications is located in Ottawa, Ontario.

Key Customers:

- BCE Mobile
- Bell Canada International
- Canadian Space Agency
- European Space Agency
- Industry Canada
- Spar Aerospace
- Stentor
- Teleglobe
- Telesat
- TMI Communications

COMPANY BACKGROUND AND HISTORY:

VISTAR is solely owned by the Stentor Alliance of Canadian Telephone Companies. VISTAR was founded to bring a focus and integration to research and development activities involving satellite and terrestrial

communications systems.

BUSINESS AND PRODUCT DESCRIPTION:

VISTAR performs and invests in targeted research and development that will improve the overall telecommunications infrastructure and generate new opportunities for its shareholders and clients.

VISTAR has initiated projects in several areas including seamless satellite/terrestrial networks, broadband multimedia services, advanced mobile and personal communications, future satellite and ground systems, and custom application development. VISTAR is a participant in OCRInet (Ottawa-Carleton Research Institute network) and CANARIE initiatives that will lead to the establishment of a Canadian electronic information highway.

VISTAR's activities centre on three broad areas:

- Wireless access for narrow and wideband communications - activities related to this area include assessment of existing and planned satellite systems, multimedia entertainment and information services, and wideband and narrowband technologies. Related applications are personal office/telecommuting, direct broadcast satellite, and wideband (ATM) VSAT.

- Mobile satellite systems and applications - this activity involves examination of existing and planned satellite systems, applications development, ground technologies and systems design. Examples of mobile satellite systems that could support these kinds of applications include MSAT, Inmarsat and Orbcom.

- Future satellite systems - activities here examine emerging systems, space and ground technologies, market assessment, system design, and feasibility analysis. Satellite systems that could support future systems include Spaceway, Teledesic, Federal Advanced Satcom, Odyssey and Iridium.

VISTAR has established a strong working relationship with a broad range of high technology companies with common interests in communications development and future trends.

Some of the projects which VISTAR has recently completed or is presently undertaking include:

- Future Satellite Communications Systems - a global market study to determine the potential future market for satellite access to wideband service in the 1995-2015 timeframe.
- Global Competitive Analysis - analysis of multimedia and future satellite systems worldwide.
- Community Access Opportunity Assessment
- Several active proposals for mobile communication system development.

INFORMATION HIGHWAY

VISTAR Telecommunications Inc. is a Canadian research and development company established as a world class center of excellence for advanced systems and applications development in the field of satellite communications with particular emphasis on opportunities that arise through the integration of satellite and terrestrial technologies.

VISTAR is currently pursuing a project to develop critical satellite terminal components to be utilized in new multimedia applications using satellite transmission. Through the use of ATM in a new satellite earth station, an integrated multimedia service may be provided.

Targeted applications are currently being assessed through extensive market studies. Key applications that

have been identified include interface products for work-related purposes and selected distance education, training and health care products.

DEVELOPMENT ACTIVITIES:

The development of two key components of a satellite ATM terminal - Burst (MF) TDMA Modem and the ATM Satellite Adapter and Network Manager - will provide an extension to terrestrial multimedia networks as well as for private multimedia networks.

STRATEGIC RELATIONSHIPS:

VISTAR has strategic links to each of the following organizations in the subject areas shown:

- BCE Mobile - mobile satcom systems
- Bell Canada International - telecom investments worldwide
- Bell Northern Research - networks, PCN advanced technology switching
- CANARIE Inc.
- Communications Research Center - satcom R&D applications facilities
- Canadian Space Agency - advanced satcom studies
- MPR Teltech - network management, ATM, VSAT

- TMI Communications - mobile satcom systems, services applications
- Telesat - fixed satcom systems, broadcast facilities
- Telecommunications Research Institute of Ontario (TRIO)

INTERNATIONAL PARTNERING INTERESTS:

VISTAR is looking for the following kinds of partners:

- Business, government or institutional organizations who require technical advice concerning multimedia communications solutions - satellite or terrestrial-based.
- Content providers and applications developers who have new multimedia applications to market which would take advantage of satellite transmission capability to reach a larger base of users.
- International service providers to join the project funding consortium and eventually include multimedia over satellite in a service offering.

GEOGRAPHIC MARKET ACTIVITIES AND INTERESTS:

VISTAR solicits opportunities from worldwide clients wherein the work content is consistent with VISTAR's core development, competencies and overall strategic direction. VISTAR also works globally with links into world class manufacturers.

VISTAR is looking for the following kinds of partners:

- Content providers and applications developers who have new multimedia applications to market which would take advantage of satellite transmission capability to reach a larger base of users.
- International service providers to join the project funding consortium and eventually include multimedia over satellite in a service offering.
- Multinational corporations who require technical advice concerning communications technologies - satellite and terrestrial-based.

VITAL INNOVATIONS INC.

224 Dick Street
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Colin Smith - Vice President Product Development
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NATURE OF BUSINESS:

Designing, developing and marketing physical damage management software to the insurance and repair industries. Quoting, auditing and remote imaging of automobile windshield damage, as well as priority management software.

COMPANY PROFILE:

Private
Year Established: 1988
Number of Employees: 4
Annual Revenues: $200,000 (Cdn)
Strategic Alliances: IBM, ADP
Key Customers: CIBC; Cooperators Insurance General Accident Assurance Co.; Apple Auto Glass

COMPANY HISTORY:

Vital was founded in 1988 by Colin Smith and Doug Erickson. Both had extensive experience in insurance claims and software development. Vital initially sold software to body shops, but soon began developing and marketing insurance software. A third partner has since joined Vital and the company is now owned by the three partners.

INFORMATION HIGHWAY

RemoteView is a remote imaging insurance software package capable of capturing high resolution still images and transmitting the images to a predetermined location for review by an insurance specialist. Additional data created through other means, can either be attached to the photographs and returned to the insurance company or can be created by the insurance company and transmitted to the remote participant.

INTERNATIONAL PARTNERING INTERESTS:

Geographic Markets: Canada, United States
Potential Partners: distributors
Type of Alliance Sought: joint marketing/sales alliance and/or a distributor to sell and distribute technology.

Vital is particularly interested in forming partnerships with large windshield repair shops; value-added resellers of hardware and software to sell product lines; and software companies that have a specific product that would be interested in adding remote imaging with communications capabilities such as over the Internet or point to point communications.

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