# SPECTRUM

**Europe 1992: Breaking Down the Barriers.**

Winning the 90s. This is our challenge. This is our opportunity. Winning the 90s will require a clear, sharply focused business strategy—flawlessly executed.

As we move into the 90s, our mission remains constant: We will be a major force in the Global Information Services market by maintaining market dominance in Network Based Services, expanding into synergistic niches, and maintaining superior quality, cost, and delivery.

We will see no radical departure from our strategy of the late 80s. Rather we will see that strategy executed with intensity and passion. We will continue to refine our industry focus and gain the expertise in our niche markets that will distinguish us from our competitors. We will deliver the technology platform that our clients require in the dynamic decade ahead. And we will deliver our products and services through the smoothest, most efficient business processes—pricing that is competitive, billing that is simple and understandable, contracts that are clear and concise.

In this issue, SPECTRUM looks at a key element in our business strategy: the 1992 European market and its implications for the way GEIS does business in that part of the world. As seen through the eyes of Eric Vaes, GE/GEIS' man in Brussels, the implications of this new world market affect our approach to business whether our home base is Europe, Asia Pacific, or the United States.

Sharp client focus underlies the winning strategies of the other major stories in this issue. In Canada, with the Bank of Montreal, we courted and won with this client over a decade. GEIS Canada developed one banking application and then another, constantly refreshing the technology so that Bank of Montreal sees GEIS as a business partner to meet its ongoing business needs.

In Germany, our colleagues scored an important win in the automotive industry. For Webasto, GEIS developed an EDI-based application that cuts a full week from the order cycle for suppliers to this world-class supplier of sun roofs to such prestigious automobile manufacturers as Daimler-Benz and BMW.

In the U.S., GEIS scored a major victory with Sun Microsystems to develop a UNIX-based on-line information system for its independent software vendors. Why did we win? Because Sun was so impressed with the technology we had developed in the DOS environment, they were willing to gamble that we could do the same on a UNIX operating system.

All of these client relationships are ongoing business partnerships. Even as one application is being implemented, others are under discussion or on the drawing board. GEIS and its clients—partners competitively positioning for Winning the 90s.

Sincerely,

*Hellene*

Hellene S. Runtagh

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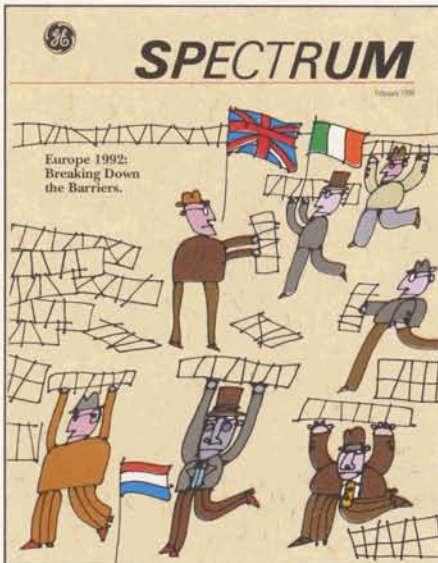
**About the cover**

Europe 1992, the date set for the deregulation of Europe to form a single market, will offer great opportunity for businesses that understand the implications of a barrier-free Europe and take steps now to be positioned to seize the opportunities the new market will offer.

**GE Information Services**

# EUROPE 1992

Eric Vaes, who heads GE's European Community
Affairs office in Brussels, talks about
the implications of 1992 for GE businesses.

**D**ecember 1992 is not just a deadline; it is an ongoing economic and political process through which the twelve member nations of the European Community (EC) are swiftly moving to break down trade barriers and effectively create the world's largest market. This effort, known as EC 1992, is good news for American businesses as well, who will benefit from this open market.

Looking at the European marketplace, Paolo Fresco, Senior Vice President, GE International, points out that "1992 is creating fewer but tougher competitors lined up against us and at the same time offers greater opportunities for us if we seize them."

In this context, GE International, headquartered in London, achieved significant advances in its primary role of identifying and implementing global alliances. Some GE businesses,

like Medical Systems, grew considerably through the successful acquisition and integration of the French CGR medical division. Others, such as GE Electrical Controls, Appliances, and Information Services (with INS in the U.K. and STET in Italy) plan to gain more from a "share to gain" strategy with strong local partners.

Each GE business needs to better assimilate the 1992 changes affecting its industry, distribution channels, and customers in order to find its own way to make Europe part of its global strategy. The recent acquisition by GE Lighting of Tungsram, the Hungarian manufacturer of lighting products, illustrates such a strategy. This joint venture is indeed a direct response to the EC's economic liberalization program.

### GE's Man in Brussels

In June of 1988, Jack Welch met

with Paolo Fresco in London to talk about the impact of 1992 on GE's businesses. Paolo persuaded the CEO that GE needed a European Community Affairs office in Brussels, nearer to the centre of the action. Since GE Information Services was already operating in Brussels, it seemed the logical business to produce a candidate for the Brussels EC Affairs office.

Since January 1989, Eric Vaes, former general manager for GEIS in Belgium, has been GE's man in Brussels, monitoring key 1992 decisions and advising GE and GEIS on strategies for positioning in Europe.

Eric's time is split 60/40 between GE and GEIS. He has a dual reporting role to Barry Simmonds, Paolo's International Human Resources Manager, and Eurfyl ap Gwilym, GEIS Manager of European Business Development.
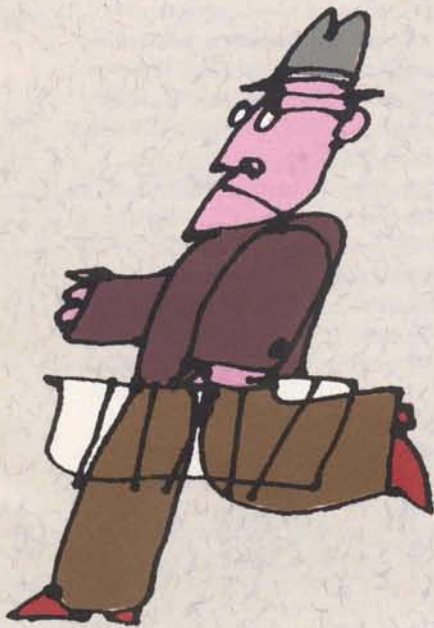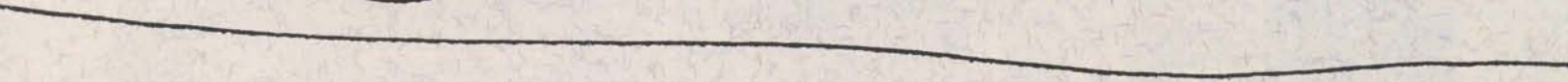
## The Deregulation Challenge

Deregulation in Europe will have direct impact on GEIS' business. It will be both a threat and an opportunity—a threat because deregulation will draw new competitors into the arena; an opportunity because the demand for network based services across Europe and throughout the world will see dramatic growth.

As Giuliano Venturi, Vice President of GEIS European Sales and Services, recently said: "In addition to the structural changes taking place in Europe, the deregulation of European telecommunications will open up new markets for information services. This will draw many new players—from all directions—into the arena. Against this growing competition, GEIS needs to maintain our focus on value added applications where we outdistance the competition."

The European Commission has indeed embarked on an ambitious crusade both to liberalize and harmonize Europe's telecommunications equipment and services infrastructure.

To remain proactive, GEIS' EC Affairs office has moved swiftly. Eric Vaes now chairs the 1992 Telecoms Committee of the American Chamber of Commerce. The committee is made up of major information technology players, including IBM, DEC, AT&T, and large end users, such as Citibank, American Express, and DHL. This group is assessing each month the impact of the European Commission's telecom deregulation program. It plays a major lobbying role by meeting EC officials and members of the

> **"The environment in Europe is so volatile, one has to be constantly vigilant to maintain competitive position. We have to build a good internal network of 1992 expertise and we need to have representation on key EC Committees whose policies affect our businesses."**
>
> *Eric Vaes, GEIS' EC Affairs office*

European Parliament involved in drafting new telecom legislation. The EC Affairs office maintains close liaison with GEIS telecom affairs gurus Warner Sinback and Ian Rutherford, who regularly come to Brussels.

"The environment in Europe is so volatile, one has to be constantly vigilant to maintain competitive position," says Eric Vaes. "We have to build a good internal network of 1992 expertise and we need to have representation on key EC Committees whose policies affect our businesses. This strategy is starting to work well for GE."

### GEIS Keeps Vigilant Eye

On a more operational front, GEIS has launched an EC 1992 task force comprised of Giuliano Venturi, Eurfyl ap Gwilym, Warner Sinback, and Eric Vaes. This task force meets quarterly to ensure that Europe 1992 and the telecom deregulation are key factors in GEIS strategic thinking. A number of issues are being tackled.

- The potential benefits of offering Euro-wide pricing in a single European currency unit (ECU) as competitors like Infonet are doing. Giuliano has asked pricing to assess the benefits of such a pricing move.

- Pan-European mergers/alliances of GEIS' major customers and prospects, representing both threats and opportunities for GEIS' vertical industry sectors.

- The future new "European Company Law Statute" and its financial, fiscal, and social advantages for GEIS Europe.

- Progress with European Community related sales opportunities and appointment of an account manager at EC level.

### Business Opportunities in the Changing Market

In today's European environment in which trade and communications walls are rapidly tumbling down, several network based computer applications and research programs are being launched by both the European Community and industry federations who want to expand their Pan-European business interests.

For example, the Federation of Stock Exchanges in the European Community is looking for a supplier of a Pan-European Market Information Network to connect the exchanges of London, Paris, Madrid, Milan, Brussels, and Frankfurt. The EC's Telecoms has several pilot programs, such as IMPACT in the area of Road Transport Information, which is of primary interest for GEIS

*Eric Vaes, head of GE's European Community Affairs Office in Brussels.*

worldwide Trade and Transportation business. The EC's TEDIS programme is investing around $6 million in EDI pilots within the Community.

Thanks to its industry focus and cross-border teamwork, GEIS is now better positioned to bid for such major opportunities.

### The Challenges Ahead

Europe 1992 will provide additional business opportunities in the telecommunications services market. GEIS ought to look forward to it and seek ways to take advantage of this change process. With the encouraging progress made by the Commission at the regulatory level, the challenges today are primarily of an economic nature.

Europe is now becoming the world's largest growth market (+3.5 percent in 1988) with several major cross-border partnerships taking shape in the telecommunications area (e.g. Alcatel, AT&T/STET, GEC/Siemens/Plessey). The European Community projects that the telecommunications industry will grow from about three percent of Europe's 1988 GDP of $4,749 billion to about seven percent by the year 2000.

Industry sources predict that spending on telecommunications equipment and services in Europe will rise from $75 billion in 1988 to $104 billion by 1992, or nine percent a year, representing more than double the rate of growth in the United States.

While the need for increased cross-border communication is still hampered by monopolistic Telecom administrations, simple-to-use electronic mail and EDI services are growing rapidly in volume and number of users in some deregulated markets (e.g. in the United Kingdom, France, and West Germany).

By further strengthening its industry expertise and technical superiority and by expanding its alliances, GEIS will be able to keep its competitive position in Europe's increasingly tougher marketplace.

### European Telecoms Liberalization In A Nutshell

- Opening of market for terminal equipment and telecommunications services.

- Full mutual recognition between member states of test results ("type approval" in telecom jargon).

- Opening of procurement procedures of telecom administrations to competition.

- Clear separation of reserved (voice telephony) and operational (value added network services) activities of telecom administrations in each member state.

- Definition of an agreed set of conditions for access to the public network, known in telecom jargon as "open network provision."

- Creation of the European Telecommunications Standards Institution (ETSI).

- Issuance of guidelines for the application of competition rules to the telecommunications sector to ensure fair market conditions for all participants.

- Opening of market for satellite receive-only antennas.

# PUSHING THE LIMITS

Through perseverance and banking know-how, GEIS Canada is winning with the Bank of Montreal.

GE Information Services in Canada has been courting the Bank of Montreal for close to a decade, longer if you count Suman Mukerji's early ties to the bank when he was a hardware vendor. Through patience, perseverance, and sheer banking know-how, GEIS has built up considerable business with Canada's first bank.

The Bank of Montreal was the first bank to be chartered after Canada's independence from Britain in 1867. The bank, which takes pride in the epithet "First Bank," is an aggressive innovator in the use of technology.

GEIS Canada has had a relationship with the Bank of Montreal since the late 70s, when we had a reporting system in place for MasterCard transactions as well as an automated teller machine usage analysis reporting system. Both moved in house by the mid-1980s.

Around 1980, GEIS Canada developed a batch reporting system for the Commercial Banking division's new Vehicle Wholesale and Leasing program. But the real opportunity to do some innovative things came along when Gerry McLean was appointed Vice President of Vehicle Financing. GEIS people worked with Gerry to understand his forward looking view of a market-oriented vehicle finance monitoring system. Gerry wanted a system that would give the bank's dealer clients critical information about their credit position and pertinent data on all vehicles outstanding. He predicted that such a system would enable the bank to double its vehicle finance credit volume every year for the next three years. The system delivered by GEIS helped his prediction become a reality.

The vehicle financing business has been growing ever since. Today it generates $1.5 billion in credit. GEIS has kept the system market-current by adding enhancements in response to user needs. With a 50 percent growth in system usage projected over the next 18 months, GEIS plans to continue enhancing the entire suite of systems, using new design to make them more efficient and cost effective.

Suman Mukerji (right) talks with Stephen Wateridge, Divisional Manager, Corporate Foreign Exchange, Bank of Montreal, in the bank's Dealing Room.

"GE's customer turnaround time has been nothing short of superb. GE recognizes the bank's need and responds to those needs," says Gerry McLean. "Because of that, our original business relationship has evolved into a true partnership between GE and the bank."

## Teaming Up To Win

In 1986, GE Information Services uncovered an opportunity to serve another division of the Bank of Montreal. GEIS learned that the Corporate and Government Banking division was looking for a system to offer balance and transaction reporting services to the Canadian middle market (companies with between $40 and $100 million in annual sales revenue). The bank was leaning toward a slightly updated version of its current system, provided by ADP,

but GEIS teamed with the U.S. firm BankLink to win the contract.

Using the BankLink software, data is loaded from the bank's accounting system in Toronto on to MARK III before dawn each weekday. The reliability and availability of MARK III is key to this process, because there is only a small window between this uploading and the time the bank's first clients start signing on in Newfoundland.

Bank of Montreal now has more than 800 clients using the system and is adding clients at a rate of 50 a month. It is the clear leader in providing this type of service in Canada.

## Staying The Course

A world class bank by any standard, Bank of Montreal derives a high share of its net income from offshore banking activities. When Bank of

Montreal's Treasury division selected IP Sharp in 1983 for a risk management system, the GEIS Canada team was not discouraged. They were convinced that because of the nature of the bank's business, GE Information Services would do big business with them one year or another. Periodically, International Banking people dropped by for philosophic discussions with treasury people on the theory of risk management. While at times these discussions seemed to be going nowhere, they, in fact, were building GEIS' credibility in the bank.

The big opportunity arose when a newly appointed Executive Vice President of the Credit and Lending Committee demanded a better risk management system. He wanted a highly functional system that would allow users to define new financial instruments without going back to the vendor, one that would handle new requirements and allow the bank to make competitive moves very quickly.

GE Information Services saw the opportunity for a classic high volume GLS application as the foundation for what promised to be a continuing relationship, much like the one GEIS has with Swiss Bank. The challenge was to persuade the bank that GE Information Services could provide a superior solution to their risk management needs.

## The Winning Strategy

After discussing strategy with International Banking people, the Canadian team gave the bank a very detailed and professional proposal. "As a result of this effort," says Trevor Williams, manager, Canada, "we got put on what I never knew existed—a short list of one. Great credit goes to Suman Mukerji for his sheer tenacity and persistence and for orchestrating all the right resources at the right time."

The International Banking people again lent their support by demonstrating the capabilities of our GLS. "We let them play with it for two weeks to see if they could break it," says Gavin Bell. "Ultimately they concluded that we could get them
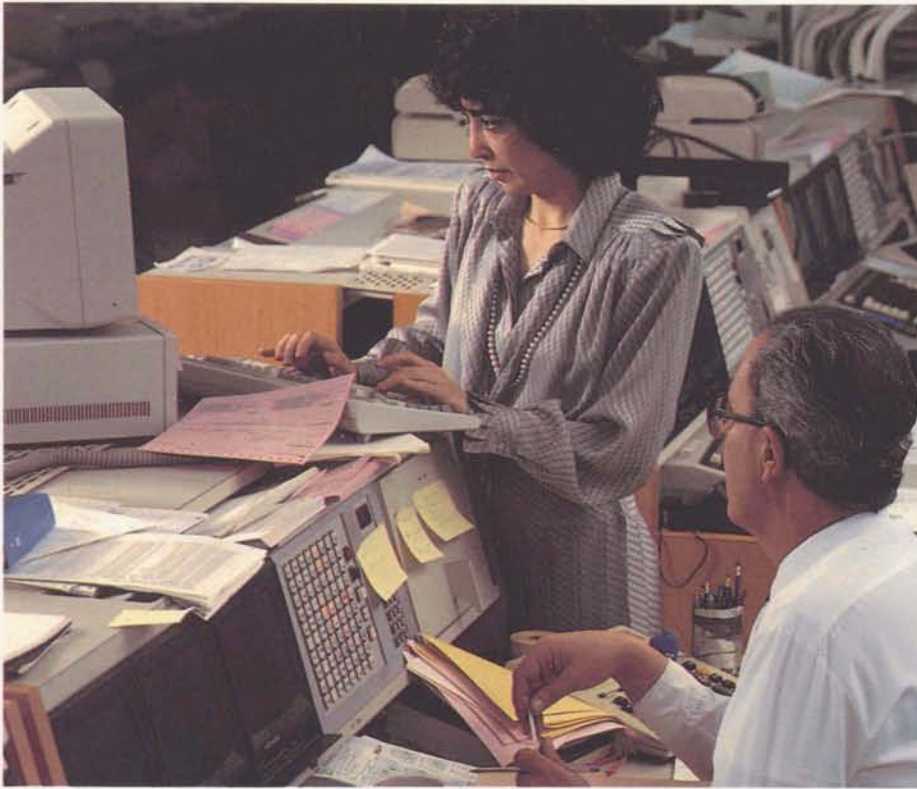
*Dealers at work in the high powered dealing room of the Bank of Montreal, where the GEIS-developed Global Limits Monitoring System has enabled the bank to make optimum use of its available credit dollars.*

where they needed to be faster and with less risk than any other alternative."

## How The System Works

Under the leadership of Mike Solomonides, the Canada SDC team developed a customized real-time limits monitoring system that enables the bank to calculate and track risks associated with dealing in the world market. The bank can track whatever types of transactions it feels make it vulnerable. When initially implemented, the Global Limits Monitoring System (GLMS) handled Foreign Exchange Spot and Forward transactions, Money Market loans and deposits, and Forward Rate Agreements.

Dealers and bank managers access the system using a PC front-end. Deals can be entered any time, from any bank location. When a deal is entered, GLMS adjusts the availability of certain lines of credit and updates

the exposure created by the new transaction. Weights per transaction type are predetermined by bank management and can be changed in real time.

Dealers can make inquiries in real time to learn whether there is any "room" to do a new deal. Management gets reports each morning on limits exceeded, transactions performed, and currency exposure. They can decide to change any system parameters of risk weighting or limit amounts, based on their assessment of the risks associated with products, customers, currencies, or countries.

In a nutshell, the system enables the bank to do more deals without increasing the risk exposure of the bank, thereby increasing profits from such transactions.

"The features of GLMS make the bank more flexible in the market," says Rick Mailloux, Manager, Credit Analysis, Treasury Services Group.

"The 'swingline' concept enables us to move money from one product to another to react to market opportunities, while staying within the bank's credit criteria. The system optimizes use of all available credit dollars."

Since the initial installation, GEIS has continually worked with the Bank of Montreal to expand the functionality of the system. Nicki Jones led development of Phase II of the system, which is now being installed. Modifications to the system change the way many of the bank's limits are processed, notably by adding a country limit concept for measuring risk. Phase II also adds a number of additional transactions to the system.

Even as Phase II is being installed in the bank's dealer locations in Montreal, Toronto, London, Singapore, New York, and Tokyo, GEIS and the Bank of Montreal are at the drawing board, mapping out the next series of enhancements to the system.

Bank of Montreal is also looking to grow its share of fee-based income, especially in the securities arena. The bank has recently decided to implement a Mark III-based Commercial Paper Note Issuance System. The system will be a heavily customized version of an application developed by the New York SDC banking group, who gave strong support to the Canada project. The system will be put into production in two phases during the first two quarters of 1990. The bank has also seen potential growth in other fee-based product opportunities. This interest is being stimulated by our brand new Tradewatch and MTS-PCA developments.

"Bank of Montreal and GE Information Services have been very good for each other," says Suman Mukerji. "Now, with a Master Services Agreement in place between the two, we look forward to a continued healthy growth in the relationship. With the First Bank, Bank of Montreal, as major clients of GEIS, we are well on our way to becoming the largest supplier of financial information services to the Canadian financial community."

# WEBASTO
## FINDS COMPETITIVE EDGE

By sending supply orders via EDI, Webasto cuts an entire week
from its delivery cycle, thereby saving time and money
and avoiding costly errors.

The German automotive industry faces the most dramatic change in its more than one hundred year history as it encounters more and more aggressive competition in the world markets. The internal European market is sure to create new challenges in the near future, intensifying the competitive pressures in the domestic market as well. Companies that want to remain competitive will need to find innovative solutions that ensure quality, performance, and cost containment.

Companies supplying components to the automotive industry will play an important role in meeting the competitive challenge. New concepts, such as Just-In-Time for supplies and reduced production depth on the part of manufacturers, tie components suppliers closer to the automobile manufacturers. Components suppliers themselves are in a complicated situation: they act as suppliers to the manufacturers but, on the other hand, rely on lower level components suppliers for the products they manufacture. All



*Webasto supplies sun roofs to some of the world's most prestigious automobile manufacturers. Here a worker puts final touches on an innovative front vent roof.*

these companies—manufacturers and first and second level suppliers—are integrated in an increasingly reciprocal flow of information. Many are recognizing that advanced means of communications are required to manage this information flow.

### Managing Information Flow

Webasto is one such company. Webasto is a worldwide leader in the manufacture of sunroofs for automobiles. In Germany, it is the exclusive supplier to Daimler-Benz, BMW, and Ford. Webasto has subsidiaries and associated companies in Europe, North America, and Asia. The company recognizes the absolute necessity of using data processing,

and especially data transfer worldwide, in the years to come. According to Wilfried Goetz, manager of Webasto's logistics headquarters, the company sees great potential for rationalization in the industry—a rationalization that will ripple through the entire industry, affecting suppliers as well as manufacturers. To prepare for this market reality, Webasto decided to do away with paper-based communications and to persuade its suppliers to do so as well.

Webasto determines its materials requirements on a weekly basis and forwards these requirements to the appropriate suppliers. Under the paper-based operation, Webasto ran a production planning program on its central data processing facility over the weekend. On Monday, supply orders were printed out and prepared for mailing to the suppliers, a process that consumed the entire day. The notices usually reached the suppliers on Wednesday. They were then processed and finally reentered into the receiver's data processing system. So an entire week could pass before the supply order was acted upon.

"It's mere nonsense to reenter data already stored elsewhere," says Wilfried Goetz. "It involves the risk of error, slows the process, and definitely pushes up costs."

## Elegant Worldwide Solution

At first Webasto was going to set up its own network but soon found the barriers of different configurations, operating systems, network protocols, and data structures more than it wanted to tackle. It turned to GE Information Services as a proven network services provider to adapt the various systems to the network and maintain the system. The GEIS solution, which uses Discus*Express (Data Interchange System for Communication with Universal Support), enables worldwide information exchange. Discus*Express is a special adaptation of EDI*EXPRESS for the automotive industry in Germany, Austria, and Switzerland. This open system was developed by GEIS and the software house Actis in cooperation with major users such as Bosch, FAG Kugelfischer, Freudenberg, Philips, and Stihl.

"This trend setting cooperation emerged from new business requirements associated with the Just-In-Time principle," says Walter Franke, manager, South Germany. "Just-In-Time requires a fast, reliable, and flexible system accessible to all involved in the production chain. Discus*Express provides such a system."

Each subscriber may use the Discus services regardless of its own data processing environment. Instead of the multitude of point-to-point connections generally required, Discus needs only a single line to the clearing system on the MARK III network. Discus*Express supports any standard communication protocol and message standard. In the case of the automotive industry and its suppliers, this means that both the standard VDA (Association of German Automotive Manufacturers) data record formats and other formats, such as VDA's file transfer programs, can be implemented. Other standards, such as Odette or EDIFACT, are also supported.

"Considerable effort is required to match and tune all the different hardware and software systems in the information chain," says Helmut Schaedlich, who supported imple-

mentation of the project along with Ralph Werbnik. "Some companies—especially those on the remote production level—are not in a position to face the requirements from both an organizational and financial view. MARK III offers an efficient and cost effective solution."

### Suppliers As Partners

Webasto, which has always thought of its suppliers as partners, is taking a very active role in implementing the system. In cooperation with GEIS, the company organizes special information sessions for 10 to 15 suppliers at a time. Webasto values

the benefits from the system so highly that it assumes the cost for the first year of use for each company willing to subscribe.

Wilfried Goetz is confident about future prospects. "In two or three years, electronic data interchange among producers and suppliers will be as matter of course as the telefacsimile is today," he says. "Considering how many people are entering into a computer information that is already stored in another one, the trend cannot be stopped."

As their next step, Webasto wants to send delivery notes, transportation data, invoices, detailed supply orders, and purchase orders by telecommunications.

"In GE Information Services, we have found a reliable and responsible partner who speaks our language and understands our concerns," says Wilfried Goetz. Our expectations have come true and we are going to follow this path together. Webasto wants to concentrate on our business of manufacturing the best sunroofs, stationary heating, and air-conditioning units for automobiles, busses, and commercial vehicles. We expect the same quality from our communications—and we have found it with GEIS."

# GEIS FINDS A PLACE IN THE SUN

G E Information Services has broken new ground with the development of NeWSware, an on-line support and information system running on a Sun UNIX workstation. Developed in partnership with Sun Microsystems Inc., a leading supplier of distributed computing systems, NeWSware is based on Sun's Network-extensible Window System (NeWS) and uses OPEN LOOK, a graphical, user friendly interface jointly developed by Sun and AT&T. For GEIS, the partnership with Sun offered the first opportunity to work in the UNIX world. For Sun, the new system, which it describes as one of the richest in the industry, provides a powerful tool to support its software vendors.

In the competitive market of workstation manufacture and sale, attracting and supporting independent software vendors to create applications for one's product is a key to success. Such alliances allow a hardware manufacturer to stay in front of the competition, break into new markets, and prolong the life cycle of the workstation. When courting the limited number of premier developers, providing strong technical support and good lines of communication help cement the relationship.

Through its Catalyst program, Sun offers its 1,500 vendors worldwide a variety of support services. To enhance that support, Sun decided to replace its print and telephone approach to problem resolution and information sharing with an on-line system. Sun began to search the market for a vendor to help them develop a UNIX-based system that would meet their requirements for security, worldwide expansibility, and ease of use. Sun was looking to build a long-term strategic partnership. The opportunity played to GEIS' strengths and offered an ideal opportunity to enter the UNIX world with a partner recognized for innovation.



*Stacy Watson, account manager, shakes hands with Mike Zadig, director of marketing for Sun's Catalyst program. Mike was the driving force behind developing an on-line information system to support Sun's independent software vendors worldwide. With them is David Page, manager, Computer Industry.*
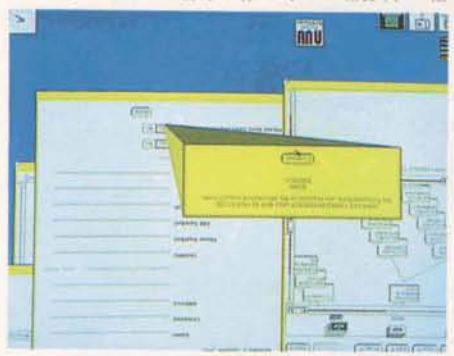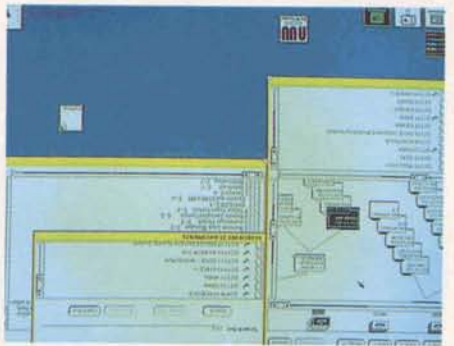
## Pulling Out All The Stops

After ruling out software vendors in favor of network services providers, Sun narrowed the search to three network providers.

The GEIS team pulled out all the stops to persuade Sun that GEIS had the technical expertise as well as the network reach to serve its needs. What clinched the contract was Art Lee's demonstration of the capabilities of QuikView, a text search/bulletin board database developed by Jim Harvey of the Technical Center East. Sun was so impressed with the capabilities of QuikView that it chose GEIS to deliver a similar system in a UNIX environment.

The system Sun envisioned would have full text search capabilities within a window environment, offer UNIX-based electronic mail, and allow users to access data resident on both the vendor's and Sun's host computers.

The project offered considerable challenge to the GEIS technical team, pulled together from the San Francisco SDC group and people from both the East and West Coast Technical Centers. As project manager, Joe Jones worked very closely with Sun to define the client's requirements. Mellie Schirmer designed the NeWSware user interface. Scott Byrns ported EFX routines to the UNIX environment. Jim Harvey developed a database server on MARK III. Robert Metcalfe linked UNIX mail to a customized QUIK-COMM Basic application. Fred Eisenmann enhanced QUIK-COMM Basic to act as an E-mail server. Colin Bonn worked with Sun to set up the QuikView databases for maximum productivity.

containing a row of file cabinets. Each cabinet represents a view of a QuikView database. These databases combine hierarchical bulletin boards with text searching capabilities comparable to the separate bulletin boards and databases in BusinessTalk. When a user clicks on a file cabinet, NeWSware displays a tree-like representation of the contents of that file. This tree structure makes traversing the file's contents surprisingly simple. QuikView is "Quik" because information is stored locally on the workstation. Users need to access MARK III only when they want to retrieve documents. QuikView allows multiple "views" of data. While each view appears to the user as a complete database, Sun controls access to data by determining which users have access to various views of data. Sun's graphical user interface, OPEN LOOK, makes NeWSware very easy to access and use. Using icons and pull down menus, Sun's world-

When users log on to the system, they are presented a small window

## Yes, GEIS Does Windows

While based on BusinessTalk technology, NeWSware only faintly resembles its DOS and Macintosh cousins.

"This was a project of firsts," says Stacy Watson, account manager. "It was GEIS' first time developing an application that uses windows. It was our first foray into the UNIX environment. It was the first use of QUIK-COMM Basic. It was even the first time we've handled all end user billing."

During development of the application, GEIS and Sun people have melded into a close working team. Dave Turo, Technical Center East, spent nearly two months at Sun working on the system development. Dave's technical expertise and can do attitude helped cement the business partnership.

*Top, NeWSware handles different types of PostScript documents easily. Here, a multi-colored tiger springs to life in a PostScript view window. Note the QV database tree and the file cabinet "views" to the left of the tiger.*

*Middle, NeWSware has the capability to search the database either globally or restricted to a sub-folder hierarchy. Here, the folders containing matching documents are marked in the database tree and in the list below.*

*Bottom, The 3-D-like capabilities of the display screen bring important messages to the user's attention.*

*Dave Turo, Technical Center East, has greatly contributed to the success of the development of NeWSware and continues to support its implementation. Here he demonstrates some of the capabilities of the system.*

*During the development of NeWSware, Sun and GEIS people working on the project have become a close working team. Shown here seated left to right are Colin Bonn and Joe Jones, San Francisco SDC; Andy Bensky and Robb Wall, Sun; standing left to right are Stacy Watson, Sun account manager, Mary Jane Kingery, Sun, David Page, manager, Computer Industry, Mike Zadig, director, Sun Catalyst program, and Arvind Deogirikar, Sun.*

wide vendors can access valuable sales, marketing, and technical support data that will help them develop, market, and sell software applications running on a Sun workstation.

"The system is very efficient," says Stacy Watson, account manager. "A user can process the database, perform a file transfer, view a document, and perform other UNIX tasks at the same time. So the client is getting maximum productivity from the system during every NeWSware session."

### An Integrated E-mail Approach

While Sun wanted GEIS' electronic mail as part of the NeWSware package because of its speed and security, they didn't want their E-mail users to have to learn anything new. The

GEIS solution uses a customized version of QUIK-COMM Basic on MARK III with a program running in the background on the Sun workstation. This program plugs into the local UNIX mail system and relays messages to and from QUIK-COMM Basic.

As a result, Sun users employ the familiar UNIX tools to compose, send, and read mail. To use the QUIK-COMM system, they simply add the word "Sunmail" to the address. In this way, users can choose between UNIX mail's post office approach (waiting for the mailman to pick up and deliver mail) or GEIS mail's more dynamic send and deliver features.

For GEIS development of

NeWSware is a major milestone in our endeavors to establish GEIS in the UNIX world. It also gives us a powerful tool that can be adapted for other clients who use Sun workstations.

"The UNIX environment's capabilities for simpler communications and multitasking, combined with Sun's superb graphic interface, strategically fit the needs of Sun's developers," says David Page, manager, Computer Industry. "We now have an application that should be attractive to our clients in the financial, automotive, and petroleum markets who have large installed bases of Sun workstations. And we have a partnership with Sun that could take us into other groundbreaking technologies."

# BusinessClips

## Expert System Shortens EDI*PC Testing Cycle

EDI Product Development and Technology Development have developed an expert system called EDI*Expert to assist in testing new releases of EDI*PC. An expert system is an artificial intelligence program that emulates human performance in a skilled task.

EDI*PC supports multiple EDI standards, each comprising as many as 200 documents. Each document, in turn, is composed of hundreds of data fields. Prior to the development of EDI*Expert, quality assurance staff spent thousands of hours each year manually creating and modifying these documents to ensure that they conform to industry standard. EDI*Expert generates the documents automatically, saving hundreds of hours of skilled resources.

EDI*Expert was prototyped using the ANSI 2002 standard and implemented for the TDCC 2/7 standard. The system imports EDI*PC document tables and builds an object-oriented representation of each document. It then applies low-level knowledge about each document segment and field (e.g., data type, maximum length, number of repetitions allowed) to populate the document with data. In addition to generating legitimate document input, EDI*Expert also creates deliberately erroneous input to test EDI*PC's error-trapping capabilities. The data is then converted into keystroke files and fed in EDI*PC, using a keystroke emulator.

EDI*Expert is the first fielded artificial intelligence application at GEIS—but certainly not the last. Among other prototype systems under development are a Client Services help disk, a VSAT monitoring system, a cable configurator, and a natural language wire service monitor.



Howard Wilkens, U.S. Ambassador to the Netherlands, at right with Donna Valtri, visited the GEIS exhibit at EuroComm '89. He is shown here talking with GEIS people who supported the exhibit (left to right) Steve Daily, Liz Litkowski, and Saul Summerall.

## GEIS Exhibits at EuroComm '89

On December 12 to 15, GE Information Services participated in EuroComm '89, a European telecommunications exhibit and conference, held in Amsterdam. The exhibit demonstrated GEIS' capabilities in Core Systems, Business Communications, EDI Services, and the Telco industry. During the three-day exhibit, GEIS people from across Europe as well as from the U.S. performed a total of 143 demonstrations. Twenty-one journalists from throughout Europe attended a GEIS press luncheon. Donna Valtri, manager, Core Systems, hosted a visit to the GEIS exhibit by the U.S. Ambassador to the Netherlands, Howard Wilkens.

## QUIK-COMM to LAN Connectivity

GE Information Services has released a QUIK-COMM to LAN (local area network) connector that will enable users of 3Com and Novell LANS electronic mail systems to send messages to and receive messages from the QUIK-COMM System. Users of 3Com's 3+Mail and Novell's cc:Mail LAN systems will just have to use unique addressing techniques to identify messages to be sent to recipients on the LAN and anywhere in the QUIK-COMM System. Establishing connectivity to LAN communities is a major step in GEIS' overall plan for E-Mail connectivity. GEIS already offers connectors to IBM PROFS and DISOSS, DEC ALL-IN-ONE, VMSMail, and Wang OFFICE.

## Lower Cost EDI Option

GE Information Services can now offer EDI clients a lower cost alternative to its Document Level service. The new Interchange Level service enables customers to select a level of service commensurate with the requirements of their applications. The new service performs control verifications and provides tracking reports for inter-changes. This is the equivalent of placing a document in an envelope and sending it to a single recipient. Interchange Level service does not read information within the envelope.

## BPS*Central for U.S. Banks

B PS*Central, a mainframe software system offering banks the flexibility to handle the electronic payment instruction needs of their corporate clients, is now available in the U.S. Using BPS* Central, a bank can accept electronic payment and order remittance advisements from EDI users, reformat them into a Automated Clearing House (ACH) payment instruction format, and forward them through the ACH network to a third party's bank for settlement. Incoming ACH instructions can be reformatted to American National Standards Institute (ANSI) 820 or 823 formats and Bank Administration Institute (BAI) lock box formats. Banks can also use the BPS*Central system for internal EDI processing with their customers and suppliers. The first two banks to use BPS*Central are First Interstate Bank in Los Angeles and SEAFIRST Bank in Seattle.

# INDUSTRYBRIEFS

E urope's 12 stock exchanges are laying the foundation for what could become a Pan-European financial trading system when they sign an agreement to build a jointly owned communications network. The Price and Information Project for Europe (PIPE) will be designed initially to disseminate regulated share price and company information among the European exchanges. It is likely to be based on digital satellite links and could be the first step toward unification of the now separate European financial markets. The Brussels-based Federation of Stock Exchanges considers PIPE to be crucial if Europe is to retain its share of the global securities market.



I nfonet has announced that it will provide electronic data interchange (EDI) in conjunction with a number of national organizations that already offer EDI in their own countries. These include Cable and Wireless Hong Kong, Telecom Australia, and two U.S. service providers. The Infonet service will go into direct competition with GE Information Services, currently the only company offering EDI on an international scale. The Pan-European market post 1992 is also likely to be a key target for Infonet whose shareholders include the Deutsche Bundespost, France Telecom's Transpac, and Spain's Telefonica.

N YNEX Information Solutions Group has acquired LeRoux, Pitts and Associates, Inc., a company specializing in point-of-sale application systems for banking, retail, and government customers. According to NYNEX Information Solutions Group's president, LPA's electronic software capabilities are a key fit to NYNEX's long-term EFT marketing strategies and goals.

J apanese telecommunications giant KDD has acquired a five percent stake in Infonet. This sale reduces U.S. Computer Sciences Corporation's holdings to 30 percent. The rest is held by European PTTs.

I nfonet has unveiled its NOTICE 400 set of products and services based on the CCITT electronic message handling standard X400. NOTICE 400 is a modular offering aimed at multinational companies needing cohesive global electronic messaging capabilities. Customers will be able to pick and choose

among the products and services to establish an international X400-based messaging resource tailored to their present and future needs.

Eastman Kodak Co., Rochester, NY, has announced it will turn over management and operation of its telecommunications and data networks to Digital Equipment Corp and IBM. According to Katherine Hudson, director of Kodak's corporate information system, the agreements represent another significant step Kodak is taking to strengthen its position as a world-class competitor. Probe Research group in New Jersey points to a growing trend among U.S. businesses to turn over their in-house telecommunications operations to experts in the field as their business becomes global. Digital will operate all aspects of Kodak's tele-communications systems not related to development of a new data center and network which will be handled by IBM.

British Telecom is investing heavily to improve dial-up access to its Packet Switchstream service. The company is issuing passwords for the new service, called PSS Plus, which offers faster transmission, wider availability, standard error correction, and simple pricing. By the end of January, BT says it will have effectively doubled the port capacity for dial-up access, enabling 90 percent of businesses to dial into PSS on a local basis.

NEC will be the first Japanese firm to establish local offices in Hungary and Poland, according to Newsbytes Japan. NEC has already been marketing data communications equipment in those countries, but until now, NEC's Austria office has been responsible for its Eastern European operations.

The X400 standard for data transmission is due to experience unprecedented success from 1990 to 1994, according to Elaine Jason-Henry of the London-based Ovum Ltd. information technology consultancy. She estimates that 150,000 computers and 500,000 PCs will be using X400 to communicate. That prediction is based on a predicated growth of electronic mail by a factor of three and volume of EDI increasing by more than seven times in the same period.

US Sprint has won a three-year $25 million contract from Data Communications Corp. of Korea (Dacom) to build a public data communications network in South Korea. Under the terms of the contract, US Sprint will also provide Dacom with expertise and training in marketing and network management. The new network, called Dacom Network Services, will enable

Dacom to offer Korean businesses and government agencies a variety of advanced data communications services.

Dealer Digest, Inc. is launching a new publication dealing exclusively with the use of voice and data communications technologies in the financial services industry. The inaugural issue of the new magazine, called Communications in Finance, is scheduled for March 1990. It will be published quarterly as a pull out supplement in Computers in Banking and Wall Street Computer Review, both leaders in the coverage of financial technology.

# New&Revised Documentation

Documents newly published or revised during Fourth Quarter 1989 and January 1990. Copies of these publications can be secured using the On-Line Ordering System (OLOS).

| Pub. No. | Publication Title | Date Pub'd | Pub. No. | Publication Title | Date Pub'd |
|---|---|---|---|---|---|
| 902.82 | Reprinted from Lloyd's List October 10, 1989 (GEM) | New, 10/89 | 5070.106 | The EDI*EXPRESS System ODETTE File Transfer Protocol (FTP) Interface User's Reference Guide | Rev., 8952 |
| 902.83 | Reprinted from COMPUTERWORLD: Gillette Slips Takeover Tries with Razor-Sharp Systems Edge | New, 9/89 | 5070.107 | The EDI*EXPRESS System X.400 Interface User's Reference Guide | Rev., 8949 |
| 902.91 | Reprinted from INDUSTRY WEEK November 6, 1989 – NETWORKS: THE FASTER WAY | New, 8943 | 5070.110 | SNA NJE Access to the EDI*EXPRESS System Product Profile | New, 8952 |
| 1401.01R | International Access Directory January-March, 1990 | Rev., 8952 | 5070.114 | Electronic Data Interchange: Your Competitive Edge in Managing Today's Business Cycle (brochure) | New, 11/89 |
| 3410.72-11 | Your Guide to Office Communications – Change Pages October 1989 | New, 10/89 | 5073.02.B | The EDI*CENTRAL System Version 2.0 MVS User's Guide | Rev., 11/89 |
| 3410.73-10 | Your Guide to Office Communications for Administrators – Change Pages October 1989 | New, 10/89 | 5073.13 | The EDI*CENTRAL System Version 2.0 DOS User's Guide | New, 11/89 |
| 3410.98H | QUIK*NET Handbook January 1990 | Rev., 8943 | 5073.14 | The EDI*CENTRAL System Installation Utility User's Guide DOS | New, 8948 |
| 3410.125B | QUIK-COMM to ALL-IN-1 Service Product Profile | Rev., 8943 | 5075.13A | The BANCOR*EXPRESS System (brochure) | Rev., 8/89 |
| 3410.139A | QUIK-COMM Basic Developer's Guide | Rev., 8945 | 5075.22 | FUNDSNET Balance & Transaction Reporting System (brochure) | New, 8/89 |
| 3410.153 | QUIK-COMM Addressing Guide | New, 12/89 | | | |
| 3410.155 | Servicing the World NTSC (Short) Video | New, 1/90 | 5076.04A | FUNDSNET Money Transfer Instruction System (brochure) | New, 8/89 |
| 3410.156 | Servicing the World PAL (Short) Video | New, 1/90 | 5075.26 | The BANCOR*EXPRESS System Financial Data Transmission Product Description | New, 8947 |
| 3412.09-1A | 3+Mail LAN Connector User's Guide | New, 8943 | | | |
| 3412.09-2A | 3+Mail LAN Connector Installation and Administration Guide | Rev., 10/89 | 5076.04A | UPC*EXPRESS Catalog Supplement to Agreement for Teleprocessing Services | Rev., 8952 |
| 3412.11-1A | cc:Mail LAN Connector User's Guide | Rev., 8943 | 5078.08 | TRADEWATCH Settlement Instruction and Reporting System Supplement to Agreement for Teleprocessing Services | New, 8943 |
| 3412.11-2A | cc:Mail LAN Connector Installation and Administration Guide | Rev., 8943 | | | |
| 3501.52 | MARK III 3770 Emulator Profile | Rev., 8944 | 5078.09 | TRADEWATCH Settlement Instruction and Reporting System Price Schedule | New, 8943 |
| 3501.53 | MARK III Service 3770 Emulator Advance Release User's Guide | New, 8945 | 5078.13 | TRADEWATCH Settlement Instruction and Reporting System (brochure) | New, 8/89 |
| 3917.02-1 | OSI Access User's Guide Supplement | New, 12/89 | 5081.11 | FUNDSNET Money Transfer Instruction System Client Guide MTS PCA Version | New, 11/89 |
| 3918.09Q | MARK*NET Service Access Directory November 1989 – February 1990 | Rev., 8944 | | | |
| 3920.04A | Managed Network Services Product Profile | Rev., 8948 | 5081.12 | FUNDSNET Money Transfer Instruction System Bank Administration Guide MTS PCA Version | New, 11/89 |
| 3920.09A | Managed Network Services Session Manager X.25 Access Management Reporting Product Profile | Rev., 8944 | 5081.13 | FUNDSNET Money Transfer Instruction System Bank Delivery Point MTS PCA Version | New, 11/89 |
| 3920.10 | Managed Network Services MARK III Service Session Manager Control User's Guide | New, 8945 | 5081.14 | FUNDSNET Money Transfer Instruction System Version PCA Product Description | New, 8950 |
| 3920.12 | Managed Network Services MARK III Service MNS Session Manager End User's Guide | New, 8945 | 5845.01 | Managing Hotel Reservations Worldwide (brochure) | New, 10/89 |
| 3920.15 | Managed Network Services for the Global Business Community (brochure in Spanish) | New, 11/89 | 5099.19 | GLS Global Risk Management System (brochure) | New, 8/89 |
| 3920.16 | Managed Network Services for the Global Business Community (brochure in French) | New, 11/89 | 5099.23 | GE Financial Information Services Folder | New, 8/89 |
| 3920.16 | Managed Network Services for the Global Business Community (brochure in German) | New, 11/89 | 5099.24 | LEAPP Leveraged EDI and Payments Program (brochure) | New, 11/89 |
| 3920.16 | Managed Network Services for the Global Business Community (brochure in Italian) | New, 11/89 | 5099.26 | GLS PCI User's Guide | New, 8950 |
| 5070.74A | EDI*EXPRESS User's Guide | Rev., 8941 | 5099.27 | GLS PCI Administration Guide | New, 8950 |
| 5070.75A | EDI*EXPRESS High-Speed Service User's Guide | Rev., 8941 | 5099.28 | GLS Front Office Interface | New, 8950 |
| 5070.76A | EDI*EXPRESS Low-Speed Service User's Guide | Rev., 8941 | 6214.09 | Petroleum Data Exchange Services CODE*PC Program License Agreement | New, 9003 |
| 5070.101A | The EDI*CENTRAL System Installation Utility User's Guide – MVS | Rev., 8749 | 6214.10 | Petroleum Data Exchange Services Price Schedule | New, 9003 |
| 5070.105 | The EDI*EXPRESS System SNA NJE Interface User's Reference Guide | Rev., 8950 | | | |

# MILESTONES

Congratulations to the following employees who have celebrated service anniversaries with GE in September, October, November and December, 1989.

## YEARS 35

Robert Kellar, US
Jack Mulford, US

## YEARS 30

Lee Anderson, US
David Clark, US
Marvin Lewis, US
Larry Singleton, US
John Wallis, US

## YEARS 25

Frank Beal, US
Edward Buchanan, US
P. Descamps, Belgium
Harold Moore, US
T. v.d. Nes, the Netherlands
Becky Terry, US

## YEARS 20

Elizabeth Clingan, US
Anthony Crisafulli, US
James Goff, US
Andy Harris, UK
Albert Levy, US
James Lyons, US
Timothy Madison, US
Robert Simmons, US
Patricia Stafford, US
Eliot Sutherland, US
Dennis Thomson, US
David Votta, US
Mike Wallis, UK

## YEARS 15

J. Beall, US
Tahia Herd, US
Anthony Marcin, US
Richard Osten, US

Leslie Rice, US
Marit Rogne, Norway
Tom Singletary, UK
R. Schutz, Sweden

## YEARS 10

David Assmus, US
Rudolph Becker, US
Malthaus Blake, US
David Bombyk, US
David Bryant, US
David Burgbacher, US
Warren Carr, US
J. Chapman, UK
Perfecto Cobian, US
Stephen Dangler, US
Margaret Donovan, US
John Dudas, US
Patricia Dunn, US
Genevieve Fab-Abbas, France
Stephen Felder, US
Mach Flinn, US

Craig Gilly, US
Charlene Gomez, US
Paul Grady, US
Larry Greene, US
Marianne Hedberg, Sweden
Michael Higgins, US
Kathleen Hopkins, US
Finley Hubbard, US
Mary Ingalls, US
Melvin Key, US
Jan Komen, the Netherlands
Lawrence Larkin, US
S. Lunter, the Netherlands
Michael McGinn, US
Robert Metcalfe, US
Jacqueline Miller, US
Judith Myers, US
Steven Moore, US
Gregory Nagy, US
E.C. Rijnenberg, the Netherlands
Paula Rodriguez, US

Frances Rothenberg, US
Norman Silverman, US
Jim Starr, Australia
Leonard Stumpf, US
Daniel Wecker, US
Janet Whitcomb, US
Vincent Wong, US
MY Yeow, Singapore

## YEARS 5

Tomothy Barchanowicz, US
William Beckley, US
Annie Bonnemaison, France
Michael Bradshaw, US
Karen Brown, US
Richard Champ, US
Emma Davis, US
Donna Farver, US
James Harvey, US

Vincent Iuzzolino, US
Barbara Johnson, US
Diana Kattar, US
Peggy Kenyon, US
Nelly Kim, US
Craig Leadbeter, US
R. van Lent, the Netherlands
Sidney Lewis, US
Joseph Marchese, US
Niels Nielsen, UK
R. Nordahl, Norway
Paul Olsen, Norway
John Orland, US
David Pecnik, US
M. Russell, UK
Michaiki Sano, Japan
John Simon, Australia
Katherine Voigt, US
R.P.M Wijgh, the Netherlands
Ben Wong, Hong Kong

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