MARCH 1985

SPECTRUM

FOR THE EMPLOYEES OF GE INFORMATION SERVICES COMPANY

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INFORMATION SERVICES

General Electric Information Services Company, U.S.A.

cover story

ANNOUNCEMENTS, PAPERS IMPRESSIVE BOOTH: MAKING A SPLASH AT INTERFACE '85

Four new GE Information Services offerings were unveiled at INTERFACE '85, March 4-7 in Atlanta. At the March 5 press breakfast, Mike Emmi, senior vice president, Marketing & U.S. Sales Operations, and Bob McCalley, manager, Enhanced Communications Venture, introduced QUIK*WARE™ Service, the DealerTalk™ System, MARK*NET™ 3270 Bisynchronous Service, and agreements with three International Record Carriers (IRC) to provide new access to MARK*NET Service from nearly 60 countries and to expand MARK III® Service and MARK 3000™ Service to almost 30 additional countries.

The occasion for the announcements was the 13th annual conference and exposition for data communication and information processing, INTERFACE '85. Held at the Georgia World Congress Center and sponsored by *BusinessWeek* and *Data Communications*, the show featured booths from providers of information processing and data communications, including GE Information Services' impressive offering. (See photos, pages 2 and 3.) GE Information Services participated in INTERFACE '85 as part of the efforts begun last month to increase the level of awareness of the company's product and service offerings and to prepare the marketplace for a major enhancement to be announced in the third quarter of this year. (See the second ad in the campaign announced last month, page 4.) INTERFACE '85 also featured seminars and formal paper presentations.

Mike Emmi

Art Hyder, manager, Enhanced Communications market planning, (see page 5) and Donna Valtri, senior project manager, Enhanced Communications Venture, both presented papers on March 4. Donna's paper, "Regulatory Issues Affecting Enhanced Telecommunications Networks," describes the complexity and confusion that has resulted from three separate governmental agencies' attempts to introduce a greater level of competition into the telecommunication industry. Art's paper traces the five generations of networks.

Booth Features Demos

The GE Information Services booth, which used the theme, "Prepare Yourself for a Higher Level of Intelligence" with the associated Einstein figure, featured live demonstrations of the newly announced QUIK*WARE Service and DealerTalk System, as well as the micro integration packages.

The QUIK*WARE Service, which is slated to be available in the third quarter, is designed to help a company automate and manage its software ordering and distribution process through an IBM PC or compatible terminal.

For many organizations, managing a wide array of new software products is a major task, and QUIK*

Making sure the laser works.

WARE Service is designed to help deal with some of the problems, such as: making sure that the right software package goes to the right person, ensuring that everyone in the organization uses the same software for a common purpose, prompt and reliable physical delivery of software, and consistent and competitive prices for all user locations.

All a user needs to do to order software on the service is point and select what he wants. In addition, the software can be electronically distributed to an IBM PC or compatible device immediately with the printed documentation shipped. The user also has the choice of having a complete hard copy package, with the software on a diskette, delivered to one or more addresses.

The DealerTalk System, which is based on the recently announced AppleLink, consists of three basic modules: a text data base for fast access to in-

Norm Harvey checks out his demo before the show opens.

Bob McCalley at the press breakfast.

formation, a bulletin board for sharing information, and an electronic mail service for instant communication. Access to Gannett's USA Today Update electronic information service, a computer conferencing facility, an order service module, and an electronic software distribution capability are other available options.

3270 Bisynchronous Service Added

The announcement of 3270 Bysynchronous Service is an important milestone for MARK*NET Service. "The 3270 BSC connection allows 3270 Information Display System station clusters to communicate with 3270-compatible hosts through MARK*NET Service," Bob McCalley explained to the press. "The IBM 3270 Display Stations connected to the GE Information Services network can access 3270 applications on one or several hosts, which eliminates the need for duplicate equipment, communication facilities, and network management."

The Display System Connection offers the following features: connectivity through dedicated leased-line, single and multi-drop connections via full-duplex communications facilities, or public dial (switched) connections via half-duplex, two-wire switched facilities; transmission speeds of 2400 to 9600 bps for dedicated connections and 2400 to 4800 bps for dial connections; MARK*NET Access at 62 major U.S. locations for dedicated connections, and 200 major U.S. locations for public dial connections; and complete network management capabilities.

The 3270 Bisynchronous host connection has the following features: dedicated connections via full-duplex communications facilities; transmission speeds of 2400, 4800, 9600, and 19,200 bps for dedicated connections; MARK*NET Access connections at 10 major U.S. locations providing nationwide coverage for dedicated host connections; and host connection configuration parameters which offer preconnection assistance to accomplish the client's host configuration.

IRC Agreements Expand International Access

The announcement of the GE Information Services agreements with ITT Worldcom, RCA Globcom, and TRT Telecommunications nearly doubles the number

Mike Chamberlain (left) and Bob McCalley.

Michael Porvaznik (left), Dr. Philip Enslow, Bob McCalley, and Mike Chamberlain talk before the press breakfast.

of countries covered by MARK*NET Service to 59.

Outside the U.S., Public Data Networks are usually operated by each country's government, which holds a monopoly on communications services within a country's borders. IRCs are private companies licensed by the Federal Communications Commission to transmit data and message traffic between the U.S. and other countries. They maintain agreements with the Public Data Networks to provide this interconnection service to the country's users.

Bob explained that as a result of these agreements, a local phone call from almost anywhere in the world can provide clients with access to their own computer resources located in the U.S. The three agreements add access from countries in Africa, Central and South America, and Asia.

*Bob McCalley's announcements held the attendees' rapt attention. Mike Emmi (foreground) with (clockwise) Mike Chamberlain, Dex Nilsson, Dave Shepherd, David Axner (*Data Decisions*), and Dwight Davis (*High Technology*).*

The second in the series of ads in the 1985 advertising campaign.

ART HYDER: DEFINING THE FIFTH GENERATION

The following paper was presented at INTERFACE '85 in Atlanta this month by Art Hyder, manager, Enhanced Communications market planning, Enhanced Communications Venture.

The First Three Generations Described

The first generation of networks can best be visualized as locally attached terminals talking to a central mainframe through a communications front end. This form of network best describes the network technology which accompanied the development of timesharing in the mid to late 1960s. This technology was closely related to the development in the mainframe world of multiple users sharing the same mainframe. In the first generation, it is difficult to distinguish network technology from host technology, since the two are so closely linked.

The second generation of networks appeared shortly after with the use of time division multiplexing. This technology allowed users to access mainframes from remote locations. This development was driven by user convenience, security, and economics. Economic considerations, however, were the major driver. Basically, it is cheaper to multiplex multiple telephone calls from a remote location and share one circuit to the host than to make many long distance telephone calls. Under time division multiplexing, multiple calls are handled concurrently, leading to considerable cost savings. Economics has indeed been the major driver for the development of networking services over the past 15 years.

The third generation of networks introduced the concept of packet networks which allowed data to be formatted into small chunks (packets) which were then routed through the network. Two major types of packet networks have evolved: distributed, which provide local switching and routing; and centralized, which provide central switching and routing. One school of thought is that the centralized approach is more suitable for very large networks because, in such cases, centralized networks are easier to maintain and make secure and may provide economic advantages. Many of the large implementations of packet sets are evolving toward technologies which combine both distributed and centralized characters.

The Fourth Generation—VANs

The fourth generation packet networks gave rise to the Value Added Network services, which provide advantages and economies over leased line and WATS solutions. The VAN providers purchased leased lines and added value through protocol and speed conversion, security, and administrative and billing features. The VAN optimizes the use of circuits through routing and packet switching techniques and offers the client a less expensive and more robust service than he would otherwise have.

VAN services provide widespread and inexpensive access via asynchronous dial services or an X.25 interface. A significant characteristic of the VAN industry is its advocacy of X.25 services. The driver here is the ability to provide a common interface to the multitude of terminal and host protocol devices which exist in the market. Ultimately, the requirements placed on protocol converters could be reduced to translation of a native protocol to an X.25 standard. This would allow essentially any terminal to have access to any public network.

Recent years have seen the birth of a protocol conversion industry which provides translation services. This trend will continue and accelerate through the end of the decade, especially with the announcement of AT&T's Accunet service, which is planned to provide widespread accessibility through X.25 with service from 25 U.S. cities in 1985.

The features of the packet network normally fall into the following general types:

- Widespread Access—The largest asynchronous network has more than 600 access locations; billing capabilities provide flexibility in setting up internal accounting systems for traffic monitoring.
- Network Management—The VAN provides complete or partial network management for the customer.
- Security—VANs provide varying levels of security; those with a history in the remote computing services business have typically had greater security requirements than those networks without such a history.

The foundation of VANs, the relative economics of providing shared services vs. leased line or WATS service, may change due to changes in underlying regulatory structures. For example, the Bell Operating Companies (BOC) may be allowed to enter the VAN business on a local basis within their operating areas. This could provide advantages to certain users who are not VAN users by providing a more widespread service at perhaps a lower cost. On the other hand, it may increase the public VAN market, since the BOC may provide access in areas not cur-

rently covered by the public VANs, and the public VANs can then use the BOCs for local coverage and become an inter-BOC carrier. The latter is the most likely outcome, since traditional VAN customers require national access rather than only localized service.

There are many twists and turns in the direction that deregulation may take. The important point is not to anticipate the change too far in advance, but to monitor events closely and have several courses of action prepared.

VAN services will evolve in the near future to provide extensions of basic asynchronous service, protocol conversions, and new and additional synchronous services to provide support for IBM protocols.

In the asynchronous world, 2400 BPS service will become more widely available, driven by the decline in price of 2400 BPS modems and the increased prevalence of personal computers. Error-correcting asynchronous protocols will become available and, over the next several years, will dominate the market for asynchronous service.

Protocol conversion—asynchronous to bisynchronous (making asynchronous terminal screens look like a 3270 cluster controller)—will be provided to ease the use of asynchronous devices with services that are provided on IBM mainframes. These services will be provided through software packages that run on the host and corresponding software that runs on a PC:

- a hardware protocol converter which actually sits in front of the user's communications front end and transforms asynchronous streams into either bisynchronous or SNA or
- providing the capability in the VAN itself in a way that is transparent to the user.

Art Hyder

IBM 3270 synchronous services will be the major new offering of the VAN providers. These services currently are in an embryonic state, with only IBM Information Network and Cylix offering them extensively. The rationale for offering IBM services is that the terminals available in the U.S. are predominantly synchronous, with IBM 3270 BSC/SNA holding, by a wide margin, the dominant share.

IBM synchronous services have traditionally been provided via point-to-point or leased connections and take two principal forms: interactive services provided by 3270 BSC/SNA terminals and remote batch services characterized by 2780/3780 services. VANs will attempt to address this market by widening the options available to MIS and communications managers through offering widespread dial-in services which support these types of terminals. This will allow the in-house managers either single-protocol hybrid applications using shared VAN services and in-house facilities, or single-source solutions from a single vendor. This dial-in solution is especially attractive for VAN suppliers, since it allows them to capitalize on shared services in a similar manner to dial-in asynchronous service.

The widespread availability of dial-in synchronous service will affect the design of applications and cause the dominance of IBM 3270 devices to become even greater. The availability of low-cost PC boards, which allow PCs to function as IBM 3270 or 2780/3780 devices, accompanied by the decline in price of synchronous modems will enable vendors to offer services that compete with 2400 BPS asynchronous services. It is safe to assume that asynchronous service will continue to dominate the VAN marketplace for existing applications, but for new applications, the VAN dial synchronous solution will receive wider consideration.

The staple product of the VAN industry has been X.25 in two flavors—"fancy" and "plain vanilla." The first provides asynchronous services over X.25 circuits to customer hosts. Over the coming years, similar technology will provide service for

3270/BSC and 2780/3780 service. "Plain vanilla" service allows an X.25 connection to come in one side of the VAN network and present itself on the other side as an X.25 stream. A factor which should serve to expand the use of dial X.25 is the development of a dial-in standard that will allow X.25 to take advantage of the inherent shared capabilities of the VAN providers. The X.25 capabilities available today are provided over leased or dedicated connections and do not provide the shared capabilities inherent in dial-in connections. The availability of a dial-in X.25 capability, coupled with personal computers, will provide significant opportunities to develop new applications.

The Fifth Generation Offers New Capabilities

The next generation of network services is broadly classified as the *Fifth Generation*, in which the network will become much more closely aligned with processing services. In this sense, the fifth generation resembles the first generation network. The closer coupling of processing and networks will allow new capabilities to users.

The remote computing services industry developed parallel with the VAN industry during the 1970s and early 1980s. As remote computing applications have grown more sophisticated, the amount of communications used in the applications has increased significantly.

The basic technology which will be used for these applications in the future is a switching technology which will allow terminal traffic to come in under any protocol the end user requires and allow it to be processed, if necessary, and transported to a host which may support another type of protocol. This in essence provides "anything" to "anything" capability in the network. This technology will be coupled with the strengths of the "C" language and the ability to develop software on a local machine and then run it on another device not necessarily in the same family. The result will be transportability between applications and devices that opens significant opportunities for the development of software.

Applications of these capabilities fall into the following classes:

- Switching Systems—The classic example, in the insurance industry, it allows an insurance agent to access a central system using any major protocol and then, based on his transaction request, be routed to various company hosts which again support numerous protocols. This type of application abounds in retail/distribution function across many industries. In these applications, widespread terminal support is key.
- Data Base Application—This addresses the need for support of many types of terminals and hosts. The user has the capability to access a central system using a common syntax and access to any data base type he desires.
- Software Distribution—That the location of host and terminal software is transparent to the user is key. The user can access a central data base to submit his order for software, and the software is sent downline to him almost immediately.
- Electronic Mail—This exemplifies the classic problem of providing "anything" to "anything" communication, so that any type of device can communicate with any other type of device. Protocol, speed, and word processing format conversions are transparent to the user and are essentially built into the network.

The common capabilities of these applications are integrated communications and processing capabilities.

Conclusion—Increased Options

The regulatory and technical changes which are taking place in the VAN services market will have an impact on the types of offerings which VAN service providers will make in the marketplace over the next three to five years. These new offerings will increase the options available to system developers in building new and creative solutions to serve their client base.

The most significant changes will come in two areas:

- Protocols supported—Dial-in 3270 BSC/SNA and dial-in X.25 services will combine the technical advantages of synchronous protocols with the widespread availability of asynchronous protocols.
- Blurring of processing and communications services provide a means of addressing the "anything" to "anything" terminal compatibility problem and will allow users to develop communications-intensive applications without consideration of processing location.

The implications of these developments will allow data processing managers better to address the expectations of their users with technically advanced communications solutions which keep pace with the rapid changes taking place in the hardware arena.

FAST-FAX

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QUIK-COMM™ SYSTEM

JOE SCARCELLA
CLEVELAND

I spent a lot of time tracking down this problem, and I don't want others to go through the same mess. Can you pass this along to your readers, please?

Yes. Thanks Joe – this will undoubtedly save others time, too. Here's the problem and the solution as Joe found it and solved it.

The client had ADM powers, and he cancelled a U#. He thought the billing would go away for that U#, but he continued to get a $40.00 invoice for the U# for several months after the U# was cancelled by ADM action. The problem was that the client had used the number for the QUIK-COMM System, and had an address associated with the U#. The client did not delete the address. The system was continuing to bill him $1 for the address each month. Although the U# was cancelled, it did not delete the inactive billing record. That record stays until the catalog disappears. If there is no billable activity, there is no bill generated. Having an address associated with that U# was still there. The $1 was bumped up to $40 for the minimum invoice.

The moral of the story is: Be sure any QUIK-COMM System addresses are deleted before you delete the U#.

MARCUS STUTZ
ZURICH

Why is our client getting a February invoice for the QUIK-COMM address he cancelled in January?

For the same reason his September invoice didn't bill him for the new address he added in September—there's a one-month lag. Here's why. The end-of-month billing run happens at 0000, and it charges for those addresses it has on record at that moment. The housekeeping program that writes the new addresses to the billing record information file does not run until 0055. So the billing run at 0000 hasn't received data about the deleted (or newly added) addresses until the housekeeping program runs at 0055. Addresses lag a month in getting billed when they start up, and lag a month in getting cancelled. Remember if an address exists for a portion of a month it gets counted as a whole month, and it gets billed at 100 ABUs.

EDEN GOLDEN
LOS ANGELES

With the simplification of the sign-up procedure for new QUIK-COMM System clients, is there an informational file that defines the new procedures?

Yes. It's QCFACTS on DY28. It gives the entire procedure—tells you which forms have to be signed – which countries have direct QUIK-COMM System access, etc. One of the documents that require a signature is 3410.59, and if you don't happen to have a copy of it, it's a part of this file. It defines the procedure to sign up existing resource priced clients, and new QUIK-COMM only catalogs.

MARK 3000™ SERVICE

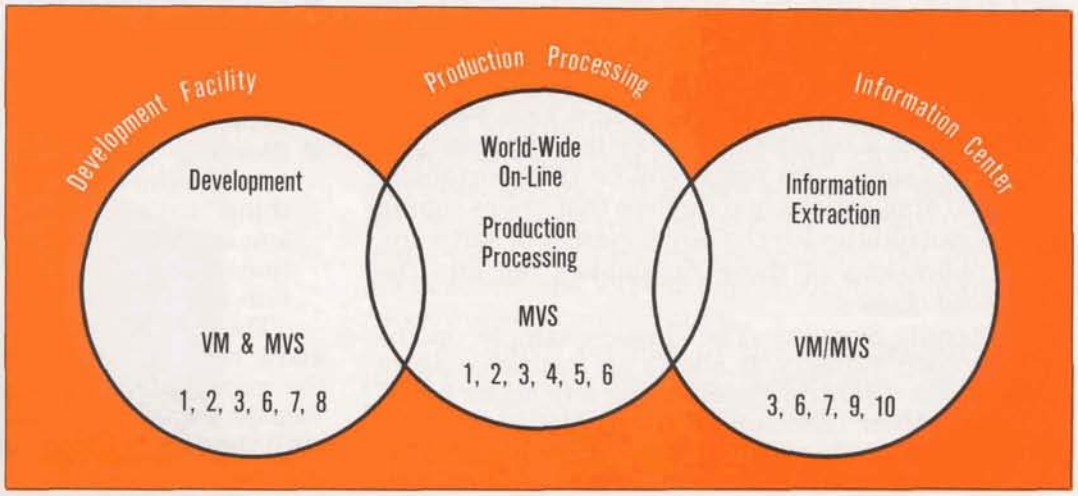
Is the three-center concept we're hearing about in MARK 3000 Service related to having processors at three separate computer centers?

No, it shows that MARK 3000 Service "appears to be" three computer centers because of the three vital functions it performs all within the same mainframe.

There are a number of important releases scheduled for April 5th that will be helpful in sales. The overlapping circles shown here is the "three-center" concept. The numbers in the circles indicate the elements of the new release and where they fit in the three-center concept.

Development Facility

1. A bulk CRU plan for clients with high peak usage on single applications, for whom VSS is not an effective alternative.
2. VSS Enhancements – new user commands to increase the user's control of the batch workload: improved reporting tools that let the user identify system, batch and TSO use: improved guidelines for relating VSS Resource Units (VRU's) to IBM service units.
3. Shared application feature – users with applications operating in an SNA network environment can have their application communicate with applications operating in the MARK 3000 SNA environment. The users' 3270s dedicated to his host can communicate with MARK 3000 Service in an easy-to-use mode that is transparent to the end user.
4. Bulk Data Transfer (BDT) – an SNA hookup that lets the user move high volumes of data between his host and MARK 3000 Service. It has complete re-start/recovery features.
5. Production Scheduling – a



fully automated job submission capability.

6. SNA Dial in – ideal for clients with low-volume application requirements using SNA devices.

Production Processing

7. VM/SP – Virtual Machine/System Product is an operating system that manages the resources of an IBM mainframe so that multiple users have the functional equivalent of a computing system (a virtual machine) at their disposal.
8. Accolade – the application development tool for CICS. Clients may use it on the service, or secure a license arrangement through GE Information Services Company.

Information Center

9. A new error-free transmission technique (MARK 3000 *SIM/PC) lets the client transmit and receive error-free data at 1200 baud between his IBM PC and MARK 3000 Service.
10. Simplified Log on – a single CRT menu on the PC screen lets the user depress a single control key to access MARK 3000 MVS, VM, or an application within each of these systems.

NADINE ADAMO
DALLAS

How can I get a MARK 3000 Service U# to be on Class 1 status instead of Class 2?

There is no Class 1 or 2 in MARK 3000 Service. User numbers in MARK 3000 Service for internal users have a budget control on storage through an immediate run program. The processing turnaround is governed by a VSS technique which can throttle response time on internal numbers, in favor of external users. If you need to improve the processing turnaround, you must contact Victor Lee, in MARK 3000 Planning to get the catalog removed from VSS control.

SOL KOPPEL
NEW YORK

Are there any guidelines to help pick the best storage plan option for a MARK 3000 Service client query?

Yes. Kate Hill in RCS marketing put together an informative QK11 file named MK3K-STOR. Thanks, Kate.

BOB WALLACE
CHICAGO

What happened to my MARK 3000 Service U#? I can't get in from a dumb terminal, or from the auto log-on with the PC?

The procedure has been changed for internal users—and will soon be changed for clients as well. All internal users with user numbers starting with 1, 3, J, and Q that were NIP validated to go to MK3A or MK3B are now coming through a host gateway.

Terminals operating at 110 to 1200 baud no longer enter MARK 3000 through the NIP process, but are brought through the host gateway. However, internals using 3270SIM, or 2780/3780 HSS are still coming through the NIP.

For months the system has been asking internal users to list a file named SYS8.NIP.INFO but apparently it was not listed as evidenced by those who are not able to connect. The full details are contained in that file, or it is stored on QK11 under the name NEWPROC.

FAST·FAX

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NSS

DON'T SELL NON-EXISTENT SOFTWARE!!

Get out your NSS Author Index (6104.03I)—it's the blue and white book. Put a big "X" through the pages that describe these listings, because they are no longer on the service.

PAGE	AUTHOR	CATALOG
1	HIS-Tren	BQ61
3	Merlin Systems	EQ51
4	N. Car. Natl Bank	DQ96
12	Kanre Reinsurance	EQ37
16	MIMIC's NetSim	DQ46
16	Contel Inf Sys	DQ77
19	Cammell's TOPCAT	DQ76
22	Orr's Const Cost Est	DQ24
23	Jobtrac	DQ83
24	BASIS by Battelle	AQ69
26	Pansophic EZtreve	DQ48
28	Distr. Sched. Sys.	CQ37
29	Gen Inst PIC Xassm	DQ78
31	Nippon Elec Com 80	BQ24
32	BGas Therm/heat	BQ34
35	Filsyn Elec Ckt	EQ27
36	GE NED Cable router	AQ42
39	K & E Sprinkler	BQ92
43	Phillips Heat Exch	CQ85
44	PSDI STrudl	DQ14
47	Orpheus	AQ23
50	Trace, TEQSEL	CQ23
53	Am. Product Ctr.	DQ75
55	Sibyl Runner	CQ23
63	Cohn Tax Planning	AQ75
79	Financial Models	BQ67
86	Corp Tacs	EQ42
90	TRAC Finl Acctg	DQ83
101	Precision Visuals	DSSL
111	Tailog by Logistics	EQ17
113	Machine Tool Repl.	EQ16
115	Repmain	EQ30
116	Elke's Eqpt. Maint.	DQ49
119	OIR	EQ41
120	TMC plastics	CQ62
122	SITE II by CACI	DQ99
129	Lab Data Systems	BQ32
129	MediCap 80	BQ50
133	Hospital Forecast	BQ05
140	APT post processors	AQ08
141	N/C cross assembler	BQ22
146	Moore's Planpak	DQ90
155	Robinson Engineering	CQ96
159	ELF Aquataine	AQ34
161	Petrol. Argus	DQ44
166	EPICS	CQ66
186	Prime Rating	EQ13
187	Prime Rating	EQ13
187	Foremost Research	CQ42

ENHANCED TELECOMMUNICATIONS

MARK III SERVICE INTERNATIONAL ACCESS EXPANDED

MARK III Service is now commercially available on a broader international basis. Clients may reach MARK III Service through distributor arrangements in 23 countries, and there are now 29 other countries (who have no GE Information Services distributors) where MARK III Service is available. GE Information Services now has agreements in place with Public Data Network distributors in these 29 countries who can offer access through three international carriers. If you have a client who wants access in one of these 29 countries, here's the procedure:

- Have your client contact the PDN distributor in the country where we do not have a distributor.
- The client will be required to sign an agreement with the distributor for a monthly fee, KC's, and TCH's. The distributor may also be a source for terminal leasing.
- The client dials the local phone number, types in GE Information Services' Data Network Identification (DNIC), and he will receive the U# = from the system.
- The client can use the same user number that he used back home. If he is from the UK, he uses a UK U#. If he's from West Germany, he

uses a West Germany U#, and he will be billed for the MARK III Services at his home office at the same rates just as though he had not left home.

- The PDN distributor will bill the user at the end of the month for the TCH's, KC's and the monthly fee (if the fee is applicable). The distributor will expect to be paid in the local currency by the user there in his country.
- The user's home office will receive a GE Information Services invoice in the normal way. No GE Information Services office can send an invoice to a country where there is no distributor, and thus no contract for services.

Here are the additional countries where users can reach MARK III Service: Argentina, Bahamas, Barbados, Brazil, Chile, China (People's Republic), Colombia, Costa Rica, Dominican Republic, French Guyana, Gabon, Greece, Guadeloupe, Guam, Guatemala, Honduras, Hungary, Indonesia, Israel, Jamaica, Ivory Coast, Korea, Martinique, New Zealand, Panama, Portugal, Reunion, South Africa and Thailand.

CRAIG YAMAMOTO
SAN FRANCISCO

I'm looking for some data on how to order an Apple Macintosh for my group. Can you help?

Yes, list a DY28 file named MACORDER.

QUIK*WARE™ SERVICE IN THE NEWS

The front cover of *PCWEEK* dated February 26 had a cover story about GE Information Services new QUIK*WARE Service offering. The article was the result of an interview held with Steve Korn and Marty Reese by a *PCWEEK* reporter. The article relates the features/functions/benefits of the service, and how it downloads files, updates existing files etc. QUIK*WARE is a venture marketing service, and is not expected to bill sufficiently to warrant field follow up at this early stage. It is

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best handled by the Telemarketing Group in Rockville. If you get calls and questions about the article, please redirect the caller to Telemarketing on 800 638-9636 Ext 45. If you need to ask questions about the product, direct your QUIK–COMM System messages to Steve Korn (KORN) or Marty Reese (REES).

JACK GOLDBERG
STAMFORD

What has happened to 1375. 01-4—the form that we used to order PC software? How can I order TSI 2.0 if we don't have it?

It was inadvertently "culled" from the OLOS System, and will be a little while before it gets back in again. In the meantime, make yourself some copies of pages 133 and 134 in the Terminal Sales Guide OLOS #1000.010, it's a copy of the OLOS form 1375.01-4.

MIKE CHAMBERLAIN
ROCKVILLE

Why does the output of Symphony on the PC show data shifted to the right about 40 columns?

Symphony has a built-in translation table that converts control characters to user specified replacements. The rubout character (decimal 127, hex 7F) causes Symphony to do this shift. If you change the value as described in the QK11 /DY28 file named SYMFI*X, you can get the details.

MARK*NET SERVICE

MARGIE FRIEDMAN
DENVER

Is there an on-line listing which indicates high-medium-low density for cities available on MARK*NET Service?

Yes, enter the U# JAR11555 (no comma, no password) – when it asks you if you want MARK III data or MARK*NET data, indicate that you want MARK*NET data. You can specify the state or area code of interest.

QK11 FILE MARKY* TELLS A LOT

An informative QK11 file provides a lot of good data that you should have available. It starts out with info about the announcement at the Atlanta Trade Show, then it recaps the banner message and the three-star file that users were asked to list. Next it describes the sign-on procedure required. It defines some other benefits that users will get. The file is approximately four pages long, and the file name is MARKY*.

PC WEEK **FEBRUARY 26, 1985**
VOL. 2 NO. 8 $2.95

THE NATIONAL NEWSPAPER OF IBM STANDARD MICROCOMPUTING

GE to Sell Software On Line: Scheme Faces Uphill Battle

By Matt Kramer

ROCKVILLE, MD—Despite widespread resistance to electronic-software distribution, General Electric plans to become the first major player in the field when its QUIK*WARE service is announced next month.

GE's Information Services Co. will sell the service to corporate customers and individual PC users who want fast delivery of PC applications packages and product updates, according to a General Electric representative.

Starting April 1, the GE spokesman said the firm will take orders on line and distribute software via its Mark*Net worldwide network. The software will be electronically delivered, error-free, straight to a user's PC, the spokesman said. Individuals will be able to pay for the software with credit cards. The software will be offered at both retail price

(Continued on Page 5)

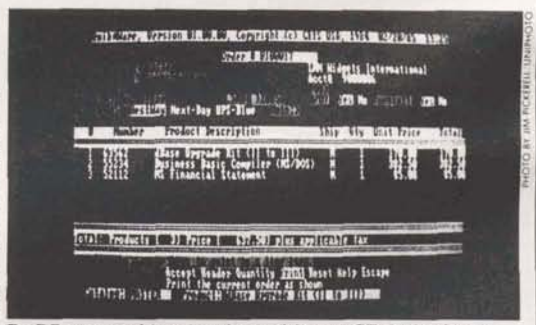


PHOTO BY JIM PICKERELL, UNIPHOTO

Do PC users need instant software delivery? GE thinks they do.

This is the issue of **PCWEEK** *with the QUIK *WARE story.*

DEALERTALK! RENAME THAT PRODUCT AND WIN A MAC FOR YOUR OFFICE!

If you've ever used a Macintosh micro, you know it's as easy as pushing a button!

In last month's *SPECTRUM*, you read about AppleLink—a dealer support system which provides dealer-to-Apple communications and consistent answers to frequently asked questions from Apple dealers. You may know that this same capability will be remarketed to other clients as a product that's currently called DealerTalk. But the market goes far beyond supporting just dealers or retailers. So, consider the following information about "DealerTalk" and see if you can think of an even better name. We'll definitely choose and publicize the winner although we may stay with "DealerTalk" for some applications since it's already had good exposure in the trade press. Submit your entries by April 15 to Karen Giventer (QC = KARE). In case of duplicates, the first entry will be selected. Your office may win a 512K Mac, external disk drive, modem, and printer for use at the office. Consider working in groups to fine tune your ideas and submitting the best ones as a group entry.

Here's some thought stimulators to get you started:

Product capabilities

The product consists of three basic components—(1) electronic mail, (2) electronic bulletin board, and (3) text databases. The text database allows you to search a database for information based on a keyword. By using the database you can find the information you need without having to call a central support organization.

Target Markets

- Manufacturers with dealer distribution channels
- Organizations with distributed sales offices
- Associations
- Information providers
- Capital equipment manufacturers
- Education
- Accounting firms, government contractors, and other companies where standards must be communicated.

Prospect Qualifiers:

- Installed base of Macintoshes
- Geographically dispersed
- Frequent communication
- High level of central support (i.e., support organization in place)
- Evolving product or service
- Dynamic marketing strategy
- Information intensive
- Information from many sources
- Economies from central storage
- Urgency of information
- Repetitive questions asked of support organization
- Applied standards (changeable)

For more information about DealerTalk list "DTALK" on DY28 or order the feature profile from OLOS (1385.00).

FAST·FAX

8*274-6517 QK: FAST

MARK III® SERVICE

SPELLING PROBLEM?

If you don't have a PC with WORDSTAR, you can use the MARK III System to check your spelling. For a description of the program, its capabilities and operation, list SPELINFO on DY28.

HERB LEISER
NEW YORK

I have a home computer which successfully connects to the network into MARK III Service and MARK 3000 Service. Is there a way to get it into MARK 3000 Service looking like a 3270?

You can bring it on an asynchronous line with the same data set you used before, but you must be able to emulate one of these four terminals with your home computer: VT100, VT52, TELEVIDEO 950 or the IBM 3101. With the emulation software in your home computer you can enter through the SIM3270 technique, substituting the letter X in place of the first letter of your user number, after you have had the user number validated (via Mailbox) for SIM3270. If you have any questions, you can call Client Services, and ask for John Towles.

ADMINISTRATION

COMPUTERIZED HELP FOR M N A's

There is now an on-line system to handle the Multinational Access agreements from input to follow-on reports. Your user number is JPO67NNN (where NNN is your cost center). Passwords will be sent to you by a separate QUIK-COMM System message. This is an on-line interactive system to take your input about the particular client, and to send it via QUIK-COMM to the appropriate approving Country Manager. Approvals for participating clients within a country will no longer be given via QUIK-COMM, but through accessing the system, and entering the appropriate approval code.

The requestor will be able to get an updated status of how the approvals are going through an on-line reporting system. The system is called **M**ulti **C**ountry **A**greements **T**racking **S**ystem or MCATS. Documentation has been printed and is being sent out to appropriate field and country managers. The announcement of the availability of the system was made through message 0582957 sent by D. J. Crane on March 1st. DY28 documentation is MCAT.DOC. If you have questions about the system, you may call Gladys Appel on 8*273-4728 (MNAV) or Zahir Usmani 8*273-4522.

BILL GAVIN
NEW YORK CITY

Is there any way to tell how much our cost center is charged for MARK III® Service that we use.

Yes. List a file named

INTRATES – available on QK11 and DY28.

MARY JANE LOW
ALBANY

Is the blue/grey price list dated April 1, 1983 still effective?

Yes, with two exceptions, and there are two OLOS supplements you should have. Section 41.1 describing the FG CRU is changed from .16¢ to .18¢. Section 51.1 on GCOS CRUs should be changed from $450 to $515. The two OLOS supplements that you should have are:

2001.01AI-3 – describing 3270 BSC dial-in network access to MARK 3000 Service.

2001.01AI-4 – describing 3270 BSC dial-in Network access to FG service; eliminating some seldom-used microfiche options, and new pricing for the Data Transmission Unit (DTU).

If your client did not receive the official November 19, 1984 letter from Mike Emmi, we can send you a duplicate.

LAURA GOMEZ
LOS ANGELES

Our client received an RMS bill with no CRU's showing. How can we tell the client how many CRU's were consumed in the RMS run?

Send a QC to Debbie Tolbert in Billing Systems on BLLG. Provide the Work Order Number and the data of the RMS job, and she can provide you the CRU's consumed. The dollars and cents for the RMS run are manually added to the invoice under miscellaneous charges, and Debbie does the conversion from CRU's to dollars and cents. If you need the data, Debbie will respond to your request.

FAST·FAX

8*274-6517 QK: FAST

From Left: Ann Simi, Gerri Hylla, and Beth Tucker. Karen Sheltra is not shown.

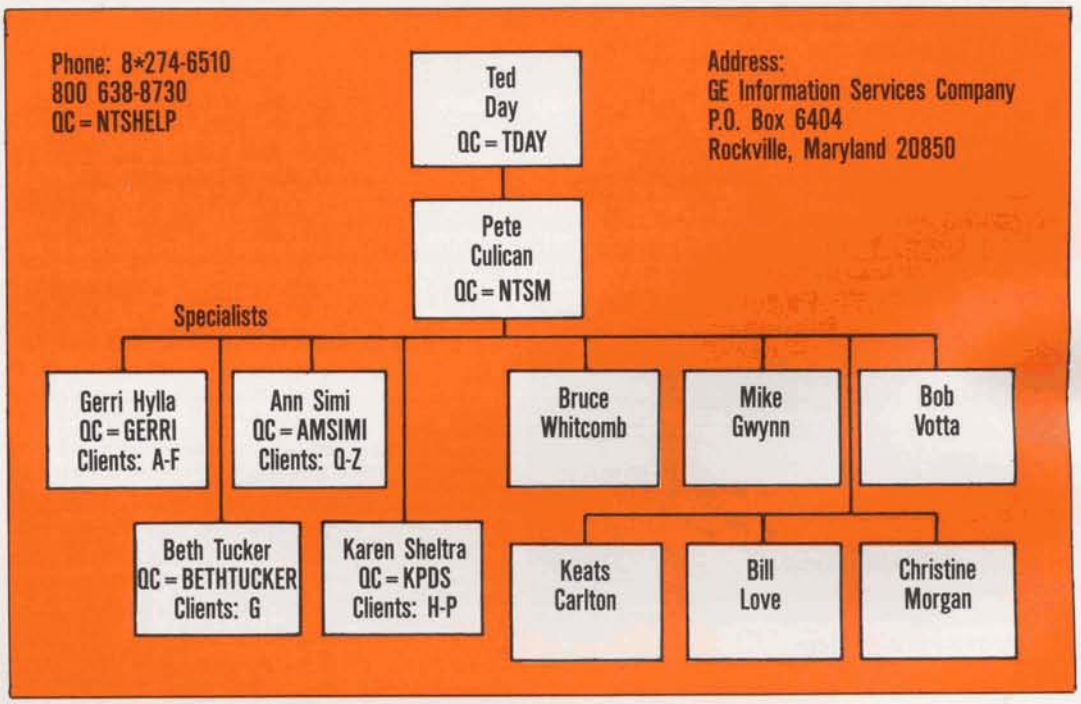
BEV STAMPER
CLEVELAND

I received a letter from a client we transferred to NTS, and it has to have a mailbox done quickly. How can I get it there fastest?

Send it via the telecopier on 8*274-6421 (301 251-6421). If it can be mailed, send it to the specialist's attention at the NTS address shown. Here's the organization taking care of the clients now handled by NTS and the prospects that you refer to the 800 number.

The four specialists (see picture, left) are doing what field office administrators do: file recoveries, mailboxes, OLOS ordering, billing/credit problems, etc. From the letter designation indicated you can see that each specialist handles a portion of the alphabet. To contact one of these specialists, call the NTS via 8*274-6510 and you'll be transferred to the proper specialist, who handles the account in question.

The other six individuals on the chart are senior technical personnel, supporting clients who call in.



SOFTWARE POLICY PAYS OFF

"There are three paths you can take with the Employee Software Development Policy," said Vaughn Rockney, systems consulting specialist, client services. "If GE Information Services owns the software, you may be eligible for a management award. If you own the software, you can market it either through the company or on your own. The policy clearly outlines rules for ownership and the steps to follow."

Vaughn wrote the MARK III® Professional Work Station for the IBM PC, which is now a GE Information Services product offering. He also wrote Rockney Disk Utilities for the Commodore 64, which he is marketing himself. His latest project, Rockney Work Station for the Commodore 64, is just completed and is slated to be an NSS offering. He is now hard at work writing the MARK III MacWork Station for the Macintosh, which he hopes will become another GE Information Services product.

The MARK III Professional Work Station grew out of coincidence and encouragement. "In my job, I had been using a MARKLINK™ Terminal for about three years when we got our first IBM PC. The only good terminal program available at the time was TSI 1.0, but I couldn't do without the type-ahead feature of the MARKLINK Terminal. I tried the PC for two days and then went back to using the MARKLINK Terminal.

"About a month later, Ralph Specht came by with a Fortran Compiler for the PC, and Essie Horton, who was doing the quality assurance testing for the GELIB Fortran Libraries, gave me a copy of the libraries and a sample program she was using to test the communications routines. Using the GELIB subroutines, I wrote the Professional Work Station, Version 1.00 in one weekend. The first version had full screen editing and type-ahead, but nothing else. Walt Crowley and Jim Cudjoe in information systems were my first field testers and supplied many ideas for improvements.

"Then came the real break. By chance, I shared the same building with Norm Harvey, who was then in MARK III Programs. I showed the program to Norm. He liked it and provided a spec full of ideas for the program. He started an internal field test with a group address on the QUIK-COMM™ System. The program grew in functionality and popularity day by day. Virtually everyone in the company who had an IBM PC at the time contributed an idea to the Professional Work Station. Norm and Mike Olfe wrote the downloader programs used to distribute the Professional Work Station for MARK III Service. Then Jane Byrne and Kathy Stevenson put together the documentation and the product was born."

Vaughn Rockney

Right afterwards, the Employee Software Development Policy came out. "I read the policy, and that night I went out and bought a Commodore 64 and started work on the Disk Utilities," Vaughn said. In the process, he learned 6510 Assembly language and developed a set of subroutines that he used for the Rockney Work Station. Both Commodore programs have gone through the Employee Software Development Policy and are now on the market. Vaughn hopes to become an NSS author on the system, marketing the Work Station.

Vaughn's current project is the MARK III MacWork Station for the Apple Macintosh. Version 1.04 is finished and is in test internally. Once again, Norm Harvey is supplying plenty of encouragement and ideas, and QUIK-COMM messages are arriving daily with new ideas from all corners of the company. Vaughn hopes this will become a GE Information Services' offering this summer.

Selling the Rockney Disk Utilities and the Rockney Work Station has meant a lot of work for Vaughn. "It is like a Junior Achievement project for me. I have silk-screened the covers for the software and paid for all the advertisements. And I have made a little money with them. But more than that, I have had a lot of fun."

NEW AND REVISED DOCUMENTATION

ENHANCED TELECOMMUNICATIONS OVERVIEW BROCHURE AVAILABLE

MARK*NET™ Applied Telecommunications, the service comprised of the Value Added Network, Micro Integration products, and Intelligent Networking products, is explained in the *Enhanced Telecommunications Overview Brochure* (Publication 3918.18).

The brochure helps readers understand some complex concepts by providing not only general information about each MARK*NET Applied Telecommunications component, but also in-depth explanations and hypothetical business situations.

NUMEROUS PRODUCT PROFILES PUBLISHED

Several product profiles—short, descriptive summaries of company products—have been published recently:

- *IBM* 3270 BSC Information Display* (3918.00A) outlines the uses and benefits of the MARK*NET 3270 BSC Service.

  The 3270 BSC connection allows 3270 Information Display System station clusters to communicate with compatible hosts, without the need for duplicate equipment, communications facilities, and network management.

  The profile lists specifications, including connectivity information, transmission speeds, and hardware and peripherals that can be used with the service.
- To help automate the process of acquiring personal computer software, GE Information Services offers *QUIK*WARE™*.

  Personal computer users will be able to use QUIK*WARE to order electronically a wide range of today's most popular software, including word processing and spreadsheet packages, at a competitive price. Using QUIK*WARE, a user can either download microcomputer software, or have it shipped to a specific address.

  The product profile is 1375.33.
- For individuals in search of a mechanism to distribute software to many users in a distributed information systems environment, there's *SOFTRAN™ Services.*

  SOFTRAN uses GE Information Services' mainframes as a repository and delivery device for IBM PC software, data files, and documentation. SOFTRAN was designed to assure quick distribution to dispersed locations, distribution tracking and reporting capabilities, and more.

  For a description of SOFTRAN, see product profile 1375.19A.
- A product profile (1385.00) describes a new GE Information Services' intelligent networking capability called *DealerTalk™*, which is designed to operate on the Apple** Macintosh and uses the MARK*NET Service as a communications link between a company's headquarters and its remote offices.

  The basic DealerTalk System contains three capabilities: electronic mail for quick communication, a bulletin board for sharing information, and a text data base for storing information.

  Other available options include: a computer conferencing facility, an order service module, an electronic software distribution capability, and access to the Gannet news data base.
- *C Programming Language* (3200.19) discusses a software tool designed to provide greater flexibility in building various types of software systems: from operating systems or communications packages, to data base management systems and application software.

  "C" is designed to be independent of any particular machine architecture, making it a highly portable language. The same "C" application, written to run on a personal computer, can be transferred to operate on MARK III Foreground Service with a minimum of effort or modification.
- *SureNet™ Processing Services* are designed to support an automated clearinghouse's (ACH) function of providing means to transmit and clear electroncally transactions among depository financial institutions.

  The profile (5075.00) explains that the system complies with NACHA (National Automated Clearinghouse Association) and applicable government regulations. Significant service features include: extensive direct data transmission capabilities; continuous flow processing, making output available to receivers within minutes following receipt of input; and support of same-day settlement.
- *WYLBUR*, an interactive text editor available to MARK 3000 Service users, is reviewed in product profile 2053.05. Based on the WYLBUR developed at Stanford University, its capabilities are fully integrated into the MVS/TSO environment. The integration allows clients a potential cost-effective alternative to QED/Edit, SPF, and TSO CLISTs.

  WYLBUR can be used to create, edit, display, or search through files for specific texts. Up to ten files can be edited simultaneously. File formats can be customized. Plus, output from WYLBUR can be stored in files for further editing or processing.

PERSONAL COMPUTER MAILBOX VERSION 2.0 DOCUMENTED

The QUIK-COMM™ System Personal Computer Mailbox (PC Mailbox) is software designed to allow IBM or compatible PC users the benefits of using GE Information Services electronic mail capability.

An enhanced software version (2.0) is now available and documented in *The QUIK-COMM System Personal Computer Mailbox User's Guide* (3410.29A). Instructions for using basic and advanced system capabilities are given. Plus, new features: the command MERGMSG, used to move the contents from one PC Mailbox copy to another; accessing Public Data Networks; and more.

Persons holding Version 1.0 may exchange the software diskette for Version 2.0 and a

free copy of the revised user's guide by mailing Version 1.0 to GE Information Services Document Center, ATTN: PC Mailbox Update, 15700 Crabbs Branch Way, Rockville, Maryland 20855 by March 31.

WPXchange™ USER'S GUIDE COMPLETED

WPXchange is a system designed to translate format codes for dissimilar devices (WANG OIS, WANG VS, IBM PC using MultiMate***, and IBM Displaywriter) with virtually no manual intervention, to allow easier information transferral. The system is also designed to allow users to store and retrieve documents.

The product is supported by three installation guides, four user's guides, and an administrator's guide, all except the last being device dependent. For starting point details, ask for the *Post-Sales and Implementation Guidelines* (3410.67)

*IBM is a registered trademark of International Business Machines Corp.

**Apple is a registered trademark of Apple Computer, Inc.

***MultiMate is a trademark of MultiMate International Corp.

MILESTONES

Congratulations to the following employees who celebrate service anniversaries in March:

45 years

Albany
Ann Vischer

25 years

Schenectady
Mike Pustelnyk

20 years

Rockville
Eileen Cahill
James Cahill
James Grogan

15 years

Rockville
Stephen Knowles

10 years

Rockville
Mary Howard
Kerry Jones
Alexander Martin
Tulsa
Ross Millard

5 years

Atlanta
Ed Seyller
Los Angeles
Thomas Caporello
Morristown
Franca Musto
Oak Brook
Lawrence Domeracki
Thomas Fraser
Piscataway
William Stack
Rockville
Stephen Allen
William Daniluk
Mary Detuerk
Alice Gordon
Stephen Hals
Michael Katzaman
Duane Ryder
George Samwell
Valana Shields
Saddle Brook
Reginald Sykes
San Francisco
Frederick LaPlante
Tulsa
Clifford Allen

WORTH NOTING

ORGANIZATION DIRECTORY DISTRIBUTED THIS MONTH

During March, the GE Information Services Organization Directory will be distributed to all employees. The 46-page binder lists all operations, departments, and sections in the company with all the people in each section down to subsection managers.

You can keep the Directory current by checking the online directory for changes. The Directory also has a key word index to help find the organization you are looking for.

EDUCATIONAL BENEFITS REGAIN UNTAXED STATUS

As of January 1, 1984, Congress restored the nontaxable status of most employer provided educational assistance.

All reimbursements of educational expenses under the company's tuition refund program qualify for the exclusion up to a limit of $5,000 paid to an employee during the taxable year.

10.94 PERCENT IS CURRENT SAVINGS BOND RATE

U.S. Savings Bonds have undergone some changes that make them worth a second look. Bond rates now change every six months, with owners receiving an average of the rates for the periods the bonds are held. Each six-month period is calculated at 85 percent of the average return on five-year Treasury securities.

Tying U.S. Savings Bonds to Treasury security rates allows bond interest to go as high as the market dictates. At the same time, the government guarantees a rate of 7.5 percent, even if the market should fall below that level.

Bonds must be held at least five years from the date of purchase to earn the market-based rate. Bonds cashed before the five-hear holding period ends receive interest on a fixed, graduated scale beginning at 5.8 percent.

Bonds can be purchased with an investment as small as $25, half the price of a $50 bond. Payroll savings is an effective way to build the savings habit, but bonds also can be purchased through banks and other savings institutions, Federal Reserve banks, and by mail from the Bureau of Public Debt, Washington, D.C. 20226.

S&SP INSURANCE REFUNDS $4.5 MILLION

All 1984 participants in the Savings & Security Program's life insurance option are now sharing in $4.5 million of premium refunds. Distribution of the refund was scheduled to begin in late February.

More than 29,000 GE people will be receiving refund checks. The refund amounts to 40 percent of 1984 premiums. It is the result of favorable experience under the insurance option last year.

Under terms of the S&SP life insurance option, a portion of contributions by participants may be refunded when the financial experience of the insurance option is favorable.

The refund will apply to everyone who made payments for S&SP insurance coverage during 1984 whether or not they are still on the payroll.

Anyone eligible for a refund can determine the amount of the refund by taking 40 percent of the 1984 insurance contribution figure shown on the S&SP Annual Statement sent recently to employees.

Here's how the insurance

WORTH NOTING

continued

option works: A participant in S&SP can earmark 1 percent of pay for this special life insurance coverage as part of his or her program investment, providing eligibility requirements are met. A participant's program-investment dollars—up to 6 percent or 7 percent of earnings—are eligible for a company-matching payment of $1 for every $2 invested.

JUST PERFECT

Matt McIrvin is only 16 and has already achieved perfection. He is one of only 12 students in the country to achieve a perfect score on the Preliminary Scholastic Aptitude Test (PSAT), which was taken by nearly 1.5 million high school students.

Matt, the son of Gary McIrvin, manager, MARK III® Systems, Engineering Department, said he was extremely surprised that he received a perfect score on the 100-minute test, which is also a qualifier for the National Merit Scholarships.

Matt attends Chantilly High School in Fairfax County and took the Scholastic Aptitude Test (SAT) twice before and the PSAT in the fall of 1983 for practice. Each time he took the test his score went up.

It just shows that practice makes perfect.

FOUR RECOGNIZED FOR BUILDING SYSTEM

Four Finance employees were recently given management awards by Mike Emmi, senior vice president, Marketing & U.S. Sales Operations for their outstanding efforts in putting together an informative system for the new Marketing & U.S. Sales structure. The system they built took 35 man-weeks, which they did in less than two weeks.

They are: Dave Lloyd, manager, marketing, sales, and financial information systems; Susan Sharp, manager, marketing and sales information systems; Robert Niemann, senior consultant; and Rudy Forrest, manager, marketing information systems. (See photo below.)

An outstanding effort: (Standing) Rudy Forrest, left, Mike Emmi, John Clouse, manager, information systems, Finance; (Seated) Dave Lloyd, Robert Niemann, and Susan Sharp.

JANUARY S&SP PRICES

Here is the report on the prices for GE Stock, Mutual Fund, and Holding Period Interest Fund used under the Savings and Security Program to credit participants' accounts.

The Long Term Interest Fund price for the last day of the month is also shown, as well as year-to-date annual income rates for both the HP and LT Funds.

			Holding Period Fund					Long Term Fund	
				YTD Annual Income Rate (a)					
Month	Stock Price	Mutual Fund Price	Price	1982	1983	1984	1985	Price	YTD Annual Reinvestment Income Rate
January	$ 60.364	$33.181	$10.00	16.5%	13.6%	13.2%	12.6%	$11.03	10.9%

(a) The "announced" HP Fund Rate was 16.25% for 1982, 13.25% for 1983, 12.75% for 1984, and 12.50% for 1985.

COMPETITIVE INSIGHT

ELECTRONIC DATA SYSTEMS (EDS)/ GENERAL MOTORS THE INDUSTRY IS WATCHING . . .

The question of the moment is: "Now that EDS is in the arms of General Motors, what changes will occur?"

Some analysts had forecast that EDS would get bogged down satisfying GM's internal data processing and communication requirements and effectively be removed from serious competition in the external marketplace. But, only time will tell.

Another question relates to the marriage of differing personalities. H. Ross Perot, a former IBM salesman, started the company in 1962 with a $1,000 investment. The entrepreneurial EDS culture may be at odds with GM's more conservative environment. As a result, EDS could lose some key employees and some flexibility in making acquisitions.

On the other side of the ledger, GM's experience in manufacturing is a plus for EDS. Morton H. Myerson, president and CEO of EDS, was recently interviewed about the merger, commenting on the areas of robotics and advanced manufacturing systems.

"Two things will be different (as a result of the merger). We will invest more money in strategic ideas and we will be more selective in the kind of business we take . . . . We're not dropping out of any of the areas that we're currently in . . . . The merger will give us entry into robotics, the software side of robotics. It will give us entry into the practical uses of artificial intelligence, advanced manufacturing, which are the manufacturing systems to come . . . .

"I still believe our traditional businesses will be significant growth areas because we have selected the financial world, the insurance and health care world, and the government world as the main areas that we concentrate on and I don't see any slackening of the demand in those areas . . . ."

Because of long-term government and private sector contracts, EDS has stability not found in some competing companies. EDS has been extremely successful in winning facilities management services contracts. Invariably, the company appears on a list of major U.S. government electronics contractors as a provider of "data center" services.

In May 1984 GE Information Services lost to EDS a remote facilities management (RFM) contract with Vista Chemical Company. Although Vista management said awarding the contract was a difficult decision, EDS's experience in this area won out.

In addition to facilities management, EDS offers an IBM-based remote computing service out of its regional data centers, provides systems development and consulting services (often tied to an RFM contract), and acts as a fiscal agent in providing a complete service to insurance agencies.

Its subsidiaries include National Heritage Insurance Company, which underwrites claims benefits for the Texas Medicaid program, and EDS Financial Corporation which is involved in financial and leasing activities.

EDS is headquartered in Dallas, with major regional data centers there and in Richardson, Texas; Grand Rapids, Michigan; Hollywood, Florida; Sacramento, California; and Camp Hill, Pennsylvania. Its Optimum Systems Division, acquired in September 1982, is located in Rockville and provides remote computing services to the U.S. government and commercial clients. The company is presently providing facilities management at more than 65 locations in 17 states and abroad. It employs 13,000.

It generated $786 million in revenue and $71 million in net income during its fiscal year which ended June 30, 1984. Over the last several years, EDS has achieved an earnings growth rate in the 23 - 26 percent range, with 25 percent coming from acquisitions.

Apparently EDS's technology direction is driven by its RFM activities. And most of the RFM contracts involve state-of-the-art IBM or IBM-compatible hardware and software. A look at some of EDS's recent wins illustrates the diversity in the technologies in which they operate.

A ten-year, $656 million Army VIABLE contract involves the installation and operation of about 20 Amdahl 470 Series V/7s and V/7As (IBM 3083E or B performance), 40 minicomputers, and 45 communications controllers. When completed, the system will support more than 18,000 Raytheon terminals and printers.

A recently awarded U.S. Postal Service contract will have EDS implementing a network of DEC minicomputers (PDP 11/24s) and microcomputers as well as the installation of material handling and process control equipment.

An eight-year, $350 million Navy inventory control system contract calls for the installation and operation of 15 IBM 3081s, more than 50 small systems, and up to 7,000 remote terminals.

EDS announced the establishment of its own private satellite network in February of this year with the installation of Vitalink earth stations at three of its regional data centers—Dallas, Camp Hill, and Sacramento. EDSNET, as the service is called, uses a combination of Vitalink earth stations for the backbone of its network and terrestrial tail circuits to connect customer sites. At the heart of the network is the intelligent, microprocessor-driven, integrated modular earth station.

EDS's major strengths center on its success with multi-year RFM contracts. It is estimated that EDS has a current contract base in the $3 - 3.5 billion range. The company has a very strong and solid record of financial performance and an excellent management team.

The culture and approach to business, exemplified by founder H. Ross Perot, is another strength. This culture demands fierce loyalty from EDS employees and pays well for people who can become very productive in an almost paramilitary environment.

Certainly EDS will continue as one of the top five service firms and a major competitor of GE Information Services.

***Bob Chaput**, operations manager*
Disaster Recovery Services
Schenectady, New York

parting shot

GET READY, GET SET, SHOW!

It took months of preparation to get the GE Information Services' booth ready for INTERFACE '85. In fact, more than 60 employees manned the booth, showed clients around, demonstrated software, and worked on the press breakfast. INTERFACE '85 also drew GE Information Services President Walt Williams as well as most of the Marketing & U.S. Sales Operations staff. (see story, page 1.)