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"It was the wildest roller coaster ride of a sale I've ever seen," said Matthew Leek, Silicon Valley district manager, northwest region.

Matt was referring to the contract GE Information Services Company has with Apple Computer, Inc. to provide data communications to support Apple dealers worldwide. The system, which Apple will call "AppleLink," consists of electronic mail, bulletin boards, and information libraries.

The ups and downs of the budding business relationship saw new heights in a meeting with Apple's top management and GE Information Services' Mike Emmi, senior vice president, Marketing and U.S. Sales Operations, Bob Hench, vice president, Engineering Department, and Ron Fellows, enhanced communications and applications marketing manager.

"It was Bob Hench's eleventh-hour presentation that convinced them we could do the job from an engineering standpoint," Ron said. "It was also at this meeting that they became convinced that we at GE Information Services have a quality they refer to as 'vision,' that creative view of what the future can hold."

Because Apple's management style values minimal business structure, Steve Korn, enhanced communications product marketing manager, said meetings were usually off-site, informal discussions rather than formal presentations.

"One of the things we learned," Steve said, "is that you don't need a cast of thousands—just a dedicated few. We also learned how creative pricing can make the difference."

Traditional pricing by resources consumed was thrown out and major opportunities accepted the challenge to create a pricing scheme to make the service attractive and affordable to the client.

"What we came up with," said Paul Inserra, manager, major opportunities, "is a pricing plan that gives the client flexibility in terms of cost and quality of service."

Apple pays a fixed rate for the number of ports available into the network, rather than by how many CRUs are consumed. Too few ports could mean frequent busy signals and frustrated dealers attempting to dial up AppleLink, so more ports can be added if needed.

AppleLink ties together communication programs running on the Macintosh and MARK III[®] Service. The user interface running on the Mac uses GE Information Services error-free protocol to pass transactions to the QUIK-COMM[™] System for electronic mail and posting to the QUIK-COMM Bulletin Board, as well as to access text libraries.

A unique key word search capability will allow Apple dealers to search large technical and sales support libraries to retrieve current Apple information.

In Apple's view, it's a cost-effective means of providing client services support. Apple strategists saw that costs for traditional client services to their dealers were skyrocketing. The AppleLink solution is expected to reduce support costs significantly and improve the quality of information to the dealer. It's scheduled to be up and running for Apple's 2,000 domestic dealers and worldwide support organization in June. Apple's international dealers will have access to AppleLink later in 1985.

"AppleLink is an innovative product that we believe will be in high demand by corporate America so we're working to make it commercially available early in the second quarter of 1985," said Jack Griffin, northwest region manager.

The commercial version will be similar to Apple-Link, but will be called DealerTalk. Karen Giventer, the new product manager for DealerTalk, said typical customers for this service will include auto parts and appliance manufacturers and any other suppliers of products sold through dealers.

While it's GE Information Services' first big step into the world of consumer retailing, there likely will be additional consumer and corporate-driven joint enhanced communications services ventures with Apple. Michael Henesey, sales planning and development manager, Western Area, has an office at Apple's Cupertino, California, headquarters, while serving as GE Information Services' liaison with that company.

For additional information about the project, contact Matthew Leek, Kevin McDonald, or Carolyn Len, technical representative, at QUIK-COMM: PALO.



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APPLELINK: HERE'S HOW IT FUNCTIONS

AppleLink is a true distributed application. Part of the code is in real-time execution on the Apple Macintosh; part is running as a time-sharing application on MARK III foreground service. In reality, the MARK III component of the system appears to be a transaction processing executive; the program is "passive," in a read state, waiting for the Macintosh to issue a transaction requesting work to be done. Furthermore, the MARK III program maintains little linkage between transactions-each request for work is viewed independently from its predecessors. This independence permits the Macintosh to appear to be doing several tasks on the "desktop" simultaneously. The Mac user may be looking through the technical database, not see what he is looking for, and open a window to send a piece of mail to his Apple support organization, without ever appearing to leave the database structure.

As can be seen in the diagram, the MARK III Server program depends upon the services provided by QUIK-COMM, Bulletin Board, and the Arachnae textual retrieval database system. Each of these subsystems, in their own overlay, has been made available to the server in subroutine form; future enhancements to the system necessitate making such callable routines available to bind into the server to provide the desired services.

Of considerable interest is the fact that all communications, following network sign-on and password validation, are conducted between the Macintosh and MARK III using GE Information Services' blocked Async transport layer protocol, developed by Robert Metcalfe of the Berkeley Engineering organization. Apple was provided with a subset of the overall protocol for implementation on the Macintosh and, as can be seen in the diagram, is contained as a part of the operating system. The protocol services are bound into the application code on MARK III; while such end-to-end protocol coverage duplicates the functionality of much of the secure links in the network, it does provide error-free communications independent of world-wide location, and the ability to ship any type of data (MacDraw, MacPaint, executable code, etc.) between the Mac and MARK III via 8-to-6 bit conversion.

Kent Schwab, manager District Systems Oakland, California

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SHARING THE FRUITS OF THE APPLE VICTORY

When Matthew Leek, district manager, and Kevin McDonald, account manager, received their bonus checks for closing the AppleLink deal, they decided to share the fruits of their victory with the other GE Information Services' employees who played a role in the win.

"A lot of people burned the midnight oil," Kevin said. "People like Ralph Bice, Joey 'G,' Mark Bloomquist, Kent Schwab, and many others did exceptional work. We wanted to say 'thank you' in a way that would show our appreciation for the work they did."

Kevin and Matt took a large part of their bonus check and divided it up among the fifteen or more GE Information Services' employees who were involved in the deal. Recipients were east and west coast employees in Marketing and U.S. Sales, major opportunities, Systems Development and Consulting, Engineering, and other areas.

While Kevin and Matthew asked that the extent of their generosity not be published, it can be said that the total given was in the five-figure area.

MARK III SERVICE: TOWARD THE INFORMATION MANAGER

It is appropriate that the following article by John Watson, manager, Information Manager project, Engineering Department, should appear at this time. The theme of National Engineers Week, February 17-23, is "Engineers: Turning ideas into reality." In that tradition, John describes how the Engineering Department is remodelling MARK III® Service to support new services such as the Information Manager.

GE Information Services and the MARK III® Foreground system are faced with their biggest challenge: can the MARK III system, designed in the late 60s for large scale classical time-sharing, evolve and compete successfully in the information services business of the 80s? Overcoming this challenge requires that we understand our market, identify both its requirements and our shortcomings, and develop the needed systems and products. This is a report on our progress in all those areas.

Our market is well understood and has been described in a number of ways that reflect the different perspectives of individual MARK III product organizations. One term is "MARK III—the Information Manager" which indicates the potential for MARK III Foreground to become an intelligent host in a distributed information world.

MARK III Service has also been described as "The Integrator" in Shared Applications in which a customer's remotely located users access GE Information Services' world-wide network, enter data that is consolidated in a Shared Application executing in MARK III Foreground, and then the integrated data is forwarded via the network to the customer's host that provides the other piece of the "Shared Application."

GEMINI, General Electric Mail Interface and Network Integration Package is an internal code name that was used to describe the concept of a universal PC-to-MARK III interface. And, MARK III has also been described as a "Smart Switch," in which a customer's users access our network for routing to and through a value-added MARK III application program, which concentrates the messages and forwards them to the customer's host that thinks it is communicating directly with the terminals. In this case, MARK III appears to be part of a network to both the customer's host and the customer's remotely dispersed terminals.

All of these terms are consistent with our GE In-

formation Services gameboard where our strengths are greatest in multi-site applications, and the big payoff comes from winning multi-site production applications.

So the key issue is what new characteristics and capabilities are required of MARK III in these roles, and how are we going to develop them?

The major characteristics are:

- Multiple users, often using micro processors, and demanding high transmission speeds
- MARK III in the role of a concentrator, valueadded communication switch, or store and forward processor
- The customer's host computer systems either sharing or doing most of the processing
- Movement and storage of a wide variety of digital data for graphics, imaging, digitized voice, etc.
- Communications that require format and protocol conversion
- Many batch processing-like requirements such as file movements, pre-programmed JCL (Job Control Language). command file scripts, etc.

However, MARK III was not originally designed to have or support these capabilities. In order to succeed in the information services business of the 80s, MARK III must be changed to perform them and do them well. To understand the fundamental nature of the required changes, we need to reduce the problem to basics.

The "model" user for the MARK I and MARK II systems used a 110 baud teletype device to implement analytic problem-solving applications in BASIC. This user was probably a "hunt-and-peck" typist who needed a lot of "think time" (see below).

But, the "model" user of today manages an input/output station of a production application. That remote station might be a 1200 baud terminal, a microcomputer, or a host computer. There is not any "think time" because the input was prepared offline and the commands being executed by both the station and MARK III Service have been pre-programmed. Frequently the remote station is prepared to send input faster than a fully loaded MARK





III can accept it and the station can accept output faster than MARK III can send it. Actually, the "model" user with which MARK III must communicate is no longer a person at a teletype but instead a computer—probably a microcomputer, such as the IBM Personal Computer or the Apple Macintosh.

Many of our current largest customers already fit this model. The Shared Applications Student's Guide, available through OLOS (3506.02) shows in diagram form the relationship of MARK III, the Network, and the customer's host for a number of applications. These include Levi Strauss where the customer's host is an IBM 3033/4341, Parson with a Prime (see chart below), and Michigan Bell with an IBM 3083.

How Must MARK III Be Changed?

If our model user is really a computer, we must change MARK III Service to support:

■ Communications at 9600 baud and higher speeds

PARSONS

GE INFORMATION SERVICES SOLUTION

- In-house Prime is connected to MARK III Service
- All participants access MARK III Service to enter transactions
- A data base of transactions is maintained showing who is ordering, what was ordered, date of order and the date of arrival
- Some summary and detailed reports are handled by MARK III Service



- Applications that have hundreds of terminals connected and need to provide services to multiple terminals concurrently
- MARK III acting in the role of a terminal, e.g., a 3270 or 3780, to a customer's host
- Communications in today's protocols: SNA, X.25, etc. with the ability to establish protocols, error correction techniques, and transmission speed
- Many new features in the areas of JCL, Independent Run, concurrent tasks, etc.

Are These Changes Possible?

Yes, and we have already started. In some ways the task is made more difficult by having to introduce change and new capabilities while also maintaining compatibility with old features, products, and interfaces. But MARK III Service is also a system that has been continually upgraded over the years and many of its components can be used as building blocks to create new and entirely different products. Most important, we built MARK III, we know how it works and how to change it, and because of our size can bring the necessary resources to bear. So let's cover what has been done already, what we are working on, and what must still be done.

What's Been Done?

Over the past two years we have made a series of major positioning releases. First, New System Architecture (NSA) was completely deployed in 1983. NSA has made possible the use of large memories on the Honeywell DPS-8 computers used in Foreground. Those systems now have two megawords (MW) of memory and some have been upgraded to 4MW. Then DATA*MARK (the Data Consistency Manager [DCM]) was released in 1983 and is now commercial. DATA*MARK provides a completely new set of capabilities in the areas of database access, contention management, and security. Currently, we are finishing up the More File Systems project which will eliminate the restriction of 36 file systems (A-Z, 0-9) and Catalog Entry Expansion which will permit a large list of capabilities to be implemented that had previously been roadblocked by lack of space in the catalog entry. In addition, this spring we will begin the deployment of the Honeywell DPS-90 processor which is several times more powerful than the DPS-8 that we now use commercially.

None of those projects directly addressed our communication needs but they provided much needed improvement in the basic MARK III system environment. However, another series of projects were completed that do address MARK III's needs in the communication area. These include:

 High Speed Dialout was deployed in 1984 and is now commercial. This project enables a High

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John Watson

Speed Service session to be initiated by a MARK III Foreground application.

- In April 1984, Engineering released the HSS Wait Option Timeout so that a HSS session can be set to terminate automatically after waiting a predetermined time for output to be queued.
- Two projects relating to international usage were completed. International Access Restriction that prevents unintended use of the VAN by non-U.S. users was released in January 1984, and then in April, Engineering released the Public Data Network (PDN) Accounting project that provides Foreground support for tracking the PDN origin of users.
- High Speed Service input was improved with the deployment in May of the Inbound Flow Control changes. With these changes, when Foreground has brief periods when it cannot process input fast enough, it will request that the network hold up input temporarily rather than defensively disconnecting the user. Defensive disconnects have been a serious problem on 4800 and 9600 baud input.
- In 1984 we deployed the Large Block Input feature that enables the transmission and receipt of a CRT screen of upwards of 10,000 characters.
- Two projects are underway to improve the Independent Run capabilities. The first piece provides improved job status display and will be deployed commercially in first quarter 1985. The second project provides improvements in the job starting and scheduling algorithms and is currently scheduled for design release in second quarter 1985.

In addition to the changes that have been made to the MARK III system itself, there are a whole series of projects in other areas designed to permit MARK III to be used more effectively and in completely new ways. Some examples include:

- Micro Integration Software and Services
 - MARK III Connector, a commercial product that

enables the PC user to transfer files between the PC and Foreground, using Visi-Calc and Lotus 1-2-3 on the PC and DMS in Foreground.

- Professional Work Station, a commercial PC product that provides very powerful screen editing capabilities in addition to a Foreground time-sharing/file transfer interface.
- The System Interface (TSI) 2.0, an upgrade providing new capabilities such as auto-dialing, TSI execution options, and on-line command file processing.
- Softran, a service that permits distribution of a client's IBM PC programs, data, and text files to the client's IBM PCs via MARK III.
- QUIK*WARE, a system for the distribution of micro software that will be released this spring for limited commercial use and gets GE Information Services into a totally new business as a distributor of popular micro software packages.
- Foreground Applications and Development Tools
 - The 3270 Emulator and enhancements through which a Foreground application can support up to eight 3270 CRTs.
 - The PC Menu and Form capabilities which facilitate the development of menu-driven applications in which the terminal is an IBM PC.
 - XFER***, which provides file transfer from Foreground to Foreground anywhere in the world. The network is also being continually enhanced

in ways that increase the effectiveness and capabilities of MARK III applications. Some examples include the support for new SET commands to adapt to special terminal protocols and current projects that provide network and MARK III support for the X.25 and SNA communication protocols, thus opening up opportunities that we cannot address now.

That's Just the Beginning

However, the items just mentioned should be viewed as just transitional enhancements that lay the groundwork for the major enhancements that will permit MARK III to become the Information Manager of the 80s. The repositioning of our product to meet the emerging market in this area will enable us to capture significant new business to replace the traditional remote computer service business which is now at the end of its life cycle.

How Else Must MARK III Evolve?

The business and technology issues that should drive the MARK III evolution are understood and are being addressed by several different groups of people from Engineering and Marketing. The primary organizations involved have been MARK III Systems, Systems Engineering, and Enhanced Communications, working on the Engineering Department Five-Year Technology Plan, the MARK III Blueprint, the Information Manager Requirement Document, and other plans and proposals. The result of the coordinated efforts by these groups during the latter half of 1984 was the publication of the Engineering Department 1985-1989 Five Year Plan, the GE Information Services two-year Marketing Technology Integrated Plan, and the 1985 Engineering Operating Plan.

The MARK III plans are intended to support four major development areas:

1. Higher Foreground Communication Bandwidth

In simple terms the Foreground-Network interface must be upgraded to support all user "terminal" communications at 9600 bits per second and probably 19.2 kilobits per second. This may require both changing the Foreground/Network protocol and introducing new hardware to replace the current Foreground Communication Controller. In addition, increased block sizes and wider use of flow control mechanisms must be supported because high transmission speeds require that data be "streamed" to the receiver without waiting for positive acknowledgements.

2. Support for New Communication Protocols

MARK III Service must be able to communicate with other hosts. Local Area Networks, and terminals in their native communication protocols. Our objective is to enable a MARK III Foreground program to establish communications under X.25 and SNA (System Network Architecture, an IBM standard) protocols. In addition, we want to be able to create MARK III programs that can easily do screen formatting for Videotex and 3270 terminals. Restated, MARK III Foreground and the network should enable a program to look exactly like a 3270 or 3780 terminal, or possibly even an IBM mainframe. MARK III must talk their language. Actually, there are many applications that need a MARK III program to emulate only a 1200 baud asynchronous terminal, and we are working on the changes to make that possible.

Satisfying these requirements may require implementations that follow the ISO (International Standards Organization) model for open system architecture that describes a protocol with seven layers: (1) physical, (2) link, (3) network, (4) transport, (5) session, (6) presentation and (7) application. Support of layers one through four will help Foreground communicate with X.25 and SNA. Layers five through seven provide application-oriented communication functions that are needed for MARK III applications to communicate with any of the emerging message transfer standards such as EDI (Electronic Data Interchange), ANSI X12, CCITT X.400, and others.

3. Better, Easier Connectability

Once MARK III Service can act as a terminal to

other hosts, we will need to connect to those hosts easily and automatically. Just as the PC user has a Hayes Smartmodem[®] and software that can connect to one of several services through software that completely handles telephone numbers, protocol conventions, and user number strings, the MARK III service must provide those functions when an application needs to "dial" a remote host and establish a communication path.

The capability that enables an application or network node to obtain the address, characteristics, and necessary protocol of a remote terminal or computer has been termed a "network directory." The current DIALOUT product provided the prototype for this function and the Network Monitor (NMON), the Central Concentrators, and the Foreground ADM system already provide bits and pieces of a function that may have to be considerably extended. Potential uses of this directory include:

- A MARK III or MARK 3000 application that emulates an RJE (Remote Job Entry) terminal and dials up a customer's host to input "cards" and receive "print line" output.
- Local Area Network (LAN) services so that a user in one LAN can establish a communication link to a named party that is a member of the same LAN, another LAN, or a host on either our network or one we are connected to.
- An application that provides a software distribution service by automatically "calling" and then down-loading software revisions to a set of subscribers.
- A MARK III application that establishes connection to Local Area Network devices through the LAN's communication interface.

Credit card entry is a related capability that further illustrates the need for a network directory function. In order to handle credit card applications it is necessary to validate, process, and bill the transaction in a few seconds with little or no user input. Some of these problems can be solved by using a directory so that by knowing the name or the number of the calling party, the network can pre-assign the user number and terminal characteristics and then automatically route the call to the supporting host.

The users of our new products in the office automation area such as QUIK-XC and the Electronic Data Interchange (EDI) will also need the capability to logon quickly and easily and be able to send information to one or more destinations using addressing mechanisms that are as easily understood and used as name, address, zip code, or a ten digit telephone number.

4. Transaction Processing Support

A number of new features are required to make MARK III a more effective host system for Transaction Processing applications. For example, we must



implement capabilities that enable people to create programs that can communicate with multiple terminals with less complexity than our current Multi-Terminal Fortran 77 (MTF77) product. In practice, the high level EVENT processing statements in MTF77 seem to have made it extremely difficult to implement the control logic of multi-terminal applications. This may be partially achieved through extensions to the TP1 product, but we are also defining three completely new capabilities. The Streamlined Transaction Processing applications (TPAPS) in place of today's large, complex, multi-stream TP applications. The "C" language and the New Foreground User project will provide the C programmer with multi-terminal and "Dialout" capabilities that are programmed in a way that is both natural to the C programmer and just like reading and writing files.

More importantly, we will be integrating the time-sharing and transaction processing terminal communications so that it will be easier to create applications that call up and communicate with unattended terminals, other MARK III programs, or programs in other hosts.

MARK III also requires better capabilities for applications in which many users run the same program. For example, on the next generation DPS-90 (i.e., the NEC S-1000) class machines we may need to support a thousand users and there may be sets of a hundred users running the same copy of a program. The Shared Application Memory project allows all of the users of a given slave program on a processor to share a single copy of the program's pure procedure. The Segmented Slave project will allow part or all of the run-time package to be shared by multiple programs. Finally, the Information Manager product will generate customized communication applications on the basis of input specifications that define a particular application and its terminal, host, and user interfaces. This is a major development effort by application systems in Engineering that is being supported by a number of communication oriented projects in both MARK III systems and communication systems Engineering. As shown above, the Information Manager will require the extensions to communication protocols and connectivity that were described earlier. Many of these support projects will result in generic communication capabilities that can be used outside of the Information Manager.

In Summary

These capabilities are just a few of the features that are currently planned for completion in the next couple of years. I have emphasized communicationoriented features. Naturally, many other MARK III features are needed and will be developed. As these features become available they will be the building blocks for new applications that can open entirely new markets, because in many cases, a new feature is the catalyst for conceiving a new system or application. In that sense the computing industry in general, and our business in particular, is driven by both marketing and technology because leading-edge technology helps create new businesses. MARK III provides us with a unique opportunity to assume technological leadership in the new world of Information Management Services-an opportunity we don't intend to miss.

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ADMINISTRATION

HOWARD FORER NEW JERSEY

Who do we talk to about changes in our DY28 U#? The administrator for the DY28 catalog is addressable via the QUIK-COMM System with the address DY28. Administrative needs for QK11 are addressed to CTRL. Remember that you don't need administrative action to change your password—you do that yourself by issuing the command PASS. The system will prompt you for the old and new passwords.

CAROLYN BRADFIELD DALLAS

We have the results of an audit of a client's activity, but we're having difficulty interpreting what we see. Is there an explanation file? Yes. On DY28 two files will help: TASKAUD to explain the task audit, and .SCAN explains the Session Audit.

ROSEMARY LAVERE-CHASSEY BOSTON

We're doing a proposal for a prospect, and need some generalized words about the GE Information Services worldwide network. Is there any file that summarizes things?

Yes. Terry Reed, a Communications Consultant in the UK has written a great summary in a DY28 file named OVER-NET. Thanks Terry.

RONNIE GENSER ATLANTA

Are there FREE PASSES available to the INTERFACE '85 conference in Atlanta on March 4-7?

Yes, and it's a great chance to have your prospects or clients see what GE Information Services is doing in the Enhanced Telecommunications arena. In addition to a large booth with an exciting laser display, there will be a hospitality suite with live music and hors d'oeuvres, and invitations to this event





March 4th Speaker

are being sent to your office. New products will be announced to the press at a breakfast press conference on March 5th. Want more details? List a QK11 file named INTERF85.

Speakers at the conference representing GE Information Services will be Art Hyder, who will speak on "The Fifth Generation Network," and Donna Valtri who will speak on "Regulatory Issues Affecting Enhanced Telecommunications."



Donna Valtri March 4th Speaker

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NETWORK ACCESS

DENNIS KAUSE ORANGE COUNTY, CALIFORNIA

Has anyone accumulated data on the rental fees for 300/1200 modems in the various countries around the world?

Yes, Don Verplank in Rochester got the data together for a proposal, and it was put into a Bulletin Board on QK11 by Clive Akerman. The Board name is QUIKNEW\$, and the item is number 32. It lists 16 countries, the modem model numbers, Autodial (yes or no), and the rental fee.

MIKE McCARTIN NEW YORK

What is the access method into our service from Indonesia?

It used to be necessary for clients to call International Direct Dial (IDD) to reach Singapore or HongKong. Now, there is a public data network available there that can be used to reach our service. List a DY28 file named INDON * for more details.

ANDERS HENRIQUES SWEDEN

Aclient asked in which countries we have Micom error controllers at our access

points. I know we have them in Norway, and Italy, but do we have them anywhere else? What function do they perform?

The Micom 512 Error Controller is deployed in several European countries on the 1200 baud rotaries. The user also has to have one (between his terminal and modem) to provide end-to-end error free transmission. In the UK the device is installed with a privacy option which provides a very basic encryption facility to guard against accidental telephone exchange problems such as cross switching, crosstalk, etc. The deployment in Europe is in Norway, Brussels, Madrid, Italy (selected access points, Holland and Switzerland by special request). These are all on 1200 baud FDX service, but some sets are being installed on 300 baud ports for "chronic noise" problems in the UK. The encryption firmware is not to DES standards.

DISTRIBUTORS

ROLAND WIMMER AUSTRIA

Ihave a number of questions about South Korea because we have some business opportunities there. Can you help with these?

Yes, here are the questions, with answers supplied by David Rolls, Office Manager in Hong Kong. (cost center 918).

- Q. What is client experience with the PDN in Korea?
- A. The PDN is operated by DACOM in Korea, and several users use it. 300 and 1200 baud service is available, and it seems to be reasonably reliable. Prices are: US\$ 14.7/TCH US\$ 0.7/KC, US\$ 200 monthly service charge. MARK III Service charges are at Hong Kong rates, which are approximately 20 percent less than U.S. list.
- Q. Are there any legal re-

strictions or special agreements a client has to consider?

- A. There are no restrictions that I am aware of. In addition to a MARK III Service agreement (either MNA or HK agreement), the client must contract with DACOM for the PDN.
- Q. Can IBM PCs be imported or bought in South Korea?
- A. IBM PCs cannot be imported into Korea, or bought there. There may be some PC look-alikes available, but I'm not aware of them.
- Q. Is it possible (and legal) to use The QUIK-COMM System in South Korea?
- A. We have not put up a test case yet, but believe that if a client applied for PDN access, then DACOM could not prohibit them from using it.
- Q. How long does a client have to wait to get PDN access?
- A. It takes approximately 4 weeks after the application is submitted.
- Q. Where do users in South Korea get technical support?
- A. They will be supported from the Hong Kong office provided the U# is validated for CC918—The Hong Kong office.



ADRIENNE KUSNIRAK PITTSBURGH

Which of the many changes announced to improve QUIK-COMM System implementation in the file QCFACTS on DY28 has the most significance for field people?

Undoubtedly it's the new procedure for getting QUIK-COMM Service started in multiple countries. Now, if a USA field person gets an MNA contract signed by the USA user, the service can begin in multiple countries immediately. The distributor countries have 90 days in which to get the credit



approved or decline service for the user there.

GINA SUSEK NEW JERSEY

Is it true that clients using the service ONLY for QUIK-COMM Service will not incur a catalog minimum? And not even an invoice minimum? That's right—it's all spelled out in the DY28 file named QCFACTS.

TIM LEE SAN FRANCISCO Is there anything documented that will tell how to connect a WANG OIS System to The QUIK-COMM System using the 3780 protocol?

Yes, Gary Cannon, the VAN Specialist in New York has made a DY28 file available called WANGB*SC. This 5pagergives details including requirements, preparation, execution and retrieval. Thanks Gary.

Fast Fax has had several questions about QUIK-COMM Telex Access, so we want to document them here in print.

- Q. What's the advantage of going to a Telex machine instead of using the QUIK-COMM System all the way?
- A. Sending it to a Telex machine forces delivery. The connection sends the message out to a Telex terminal even if it's unattended after business hours. It does not require the receiver to check into the system and inquire if there are

messages waiting. Another reason is the receiving party may be in a country where QUIK-COMM is not directly available, or the receiving party may not have a U# in the sender's catalog.

Q. How much does it cost?

A. It's a function of message length, and the destination country. GE Information Services Company does not "mark up" the Telex tariffs filed with the FCC. No charges are made for MARK III Service associated with processing the message.

- Q. How long does it take for a message to be delivered?
- A. Several factors must be considered. For example, (a) Is the receiving terminal busy? (b) Is it operational? (c) Is the Telex system in that country working OK?

The International Record Carrier (TRT Telecommunications) generally picks up messages within 15 minutes of your *S command. In recent tests, delivery times of two to ten minutes have been experienced.

- Q. Does a user have to establish a specific address for each Telex device to which he wants to send a message?
- **A.** No. The system recognizes a numeric address at the TO: and CC: prompts. The familiar numeric address for the receiving station does not need to change.
- Q. How does a Telex user in



Here's a 1-page, 4-color handout that describes the service OLOS 3410.03C

Istanbul get a message to a QUIK-COMM System address?

- A. When a catalog is validated for Telex access, a numeric Telex address is assigned to that catalog, for example, 915426. The sender must know this number. If the user wants the message to go to a specific address, the first line of the text must say QC:ADDR. If a receiving party does not want to burden the sender with having to know specific addresses, he can request the GE Information Services Company establish a 9-digit personal Telex number which will map to his QUIK-COMM System address.
- Q. Is there anything available as a literature handout for the product?
- A. Yes, it's 3410.03C—available from OLOS. The reverse side of this flyer offers a free Telex Usage analysis.

BOB FOSTER MIAMI

Are there any on-line files about the availability of the *PC Mailbox enhancements?* Yes. List a DY28 file named PCMUPGRD. It tells how you get your client the new version in exchange for his diskette with Version 1.0. The documentation is on QK11 under the file name MAILB*.

ARMANDO GARCIA NEW YORK

Why do we have different "function" numbers being assigned to addresses in The QUIK-COMM^M System? What do they do for a client?

The function is a very "saleable" feature that you can use to advantage when you're selling the system. For example, within a company, one level of management may not want to be addressable by other levels (or departments) of management. If you segregate the levels of management by function code when you set up the addresses, the Admin User may choose to use these powers at a later date. Another example: Users in Country A may be restricted



from sending to Country B, but if a message IS sent, it forces an automatic carbon copy to a third address, informing the third party that these two are communicating. You will find it helpful to see pages 24-25 of the QUIKM Admin Users Guide (3410.24) which explains the COPY and RESTRICT commands.

BRUCE WALLACE ARLINGTON, VA I need some additional information about PC Mailbox—who can I ask?

You can address your questions to QC address QUIKINFO —it's the OCO equivalent of the GE Answer Center.



DEE JONES GREENSBORO

The last time I ordered a copy of DSXMIT2 through the DECKS * program on QK11, it took almost a month to get the tape to the client. How can we speed that up for the next client? When you order it, include your cost center and a note that you want the tape shipped by courier, and it will get to the USA destination within 1 to 2 days. It will cost your cost center about \$15 or \$20, but it gets the revenue flowing faster. There is a place in the

DECKS* program for comments or remarks, and that's where you should include your CC#. The same is true for distributors' requests from outside the USA, except that the delivery time to Europe is 3 to 4 days, with Airborne shipment costs of approximately \$40, and delivery time to the Far East and Australia is 6 to 8 days and approximately \$40.

DAN WECKER CHICAGO

Is the FAPRS data base still on our service?

No, it has been discontinued. Insufficient access.

RICH OKRASINSKI NEW YORK

Is there an on-line data file that provides information about DATA*MARK? Yes, on DY28, list DMARK.

JOE SCARCELLA CLEVELAND

Is the XFER capability documented somewhere other than the New Capabilities booklet of June 1983? Yes, XFER was added to the Command System Manual (3501.01Q) in late '83. You'll find it on page 48. It's in the index under File Transfer Utility, and not under XFER.

RANDY GOBLECK ARLINGTON, VA

Have there been any updates recently to DSXMIT-OS? Which version should the client be using?

Yes, there have been two important improvements, and you should use DECKS* on

QK11 to order Version 1.3J. Improvement #1: Users can now specify (on the LTID card) print options of 256 and 512. The default length is 132. but users may now specify record lengths of anything from 1 to 2000. The use of specific record lengths of 256 and 512 caused problems previously). Improvement #2: The receiving terminal need not receive the DLE EOT signal to successfully complete a session. If all the output has been received, the session will conclude successfully even if the DLE EOT is not sent from the MRC to the receiving terminal.

SZE WAI LEUNG HONG KONG

How are the session files prepared and data handled in High Speed Service? Are they in EBCDIC, or ASCII? Standard sequential files with no special character set mentioned or specified will be ASCII character set files. When the file is transmitted via HSS, there is an ASCII to EBCDIC to ASCII conversion, and the EBCDIC portion is the transmission code only. If you want the file to be printed as an EBCDIC file, you can so specify, and the conversion back to ASCII won't take place.

MARK BALAWEJDER PHILADELPHIA

Is there an on-line summary of the synchronous protocols supported by High Speed Service at 2400/4800 baud into MARK III Service and MARK 3000 Service? Yes, list CONN2737 on DY28.

In addition, we have support for RPS III and G-115. We do not support the Honeywell VIP protocol.

DAN WECKER CHICAGO

There was a lot of activity when USA TODAY first announced, but we have heard little since. Can we demonstrate it?

Yes, there's an IR demo in REK10130,USA but the data is not current. There will be a "live" demo capability from February 25th through March 1st on KEQ86006,SERVICE.

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It's available internationally, and should be a super seller just as soon as it goes transaction priced. It's going over very well in the states (where radio/TV/newspapers/magazines provide plenty of data) and it seems that it should be extremely valuable in countries that do not get current news about world events.

Transaction pricing will REALLY make it attractive. It's not bad now at resource pricing. For example, with 1200 baud a 2-page "decision line" story on an industry specific subject costs about \$2.00 to \$3.00. Or, if your client gets an hourly update bulletin, plus an industry specific report, it's about \$3.80 to \$4.50. Don't miss the opportunity to test it with current data during FW 09 on KEQ86006, SERVICE.

MILO GARGOL DETROIT

Do we support Multileaving Remote Job Entry (MRJE)? No. We only support RJE 2780 or 3780, which are not multileaving protocols. If you have achoice to use the 2780 or 3780 protocol in a programmable device choose the 3780. The blank suppression feature speeds up the file transfer, and decreases the client's connect time slightly.

JOE RIZZI STAMFORD

A client wants to know if we have forecasts of overall economic activity for countries outside the USA. Are there any available?

Yes. QMOD can provide access to two data bases: (1) Business International's BIDATA with annual forecasts for 34 countries, extending out 1 to 5 years depending on the data series. These are updated quarterly. (2) The Conference Board Data Base (CBDATA), contains annual forecasts for 14 European countries through 1987. These are updated annually, during the Spring.

SOL KOPPEL NEW YORK

A client called and said the daily rates showing in the Currency Exchange Database (CRNC * * *) showed a zero. Was it a file error?



No, it was probably because of a holiday. Updates are received daily from Marine Midland Bank in New York City, but on Marine Midland Bank holidays no rates will be supplied, and a zero will appear. The holidays for the supplying bank are as follows for the remainder of 1985: January 21, February 12 & 18, May 27, July 4, September 2, October 14, November 11 & 28, December 25

NANCY JAMISON ROCKVILLE Is there anything new happening in the area of data bases?

You may not be aware of the EQ67 catalog that has the Oil and Gas Journal Energy Database. It uses the QMOD programs to search and analyze data. In addition to users in the oil basin areas of the USA, there are users accessing from the UK. There's a brochure available that describes the offering, but it's not on the OLOS System. Send a message to Fast Fax and ask for your copy(s). The account is handled by Leah Schwarz in Tulsa.

VICKI BAILYN CHICAGO

The subadministrator can't get PAR data for his domain. Does he need a different PAR Password? Does he need to pay another fee for PAR in his domain?

No to both questions. The PAR password will work for the entire catalog. The fee for PAR

access (\$50/month) is for an entire catalog-no additional fees need to be paid. I suspect the problem is that the Chief Administrator hasn't delegated the PAR right to the subadmin. The chief has that power by default. A display of the subadmin's status entries might reveal that the subadmin hasn't been given the PAR capability. The chief Admin must tell the subadmin the PAR keyword. The keyword should be placed in a filename variable within the program accessing PAR.

MIGUEL RODRIGUEZ BARCELONA IsthereaMARKIII program to estimate foreground

costs? Yes. On DY28 there is a program named FOCAS. It requires that you enter your U# and a project ID when you sign in. The program was originally written for and used extensively by Systems Development and Consulting Specialists to estimate running costs. The results are given in CRU, KC and TCH, but you may have to do a currency conversion when it provides USA dollar amounts.

J. P. RUBIO MEXICO CITY

We're looking for information on how to get access to civil engineering programs named ANSYS, STRESS and STRUDL. Do we have them available?

These three MARK 3000 Service programs were offered by NSS authors, but have been taken off the system. There is a STRESS*** available on foreground service but it has limited support. BQ72 has SUPERB from SDRC, but support is non-existent here in the states.



This brochure may help you sell the EQ67 (FG) database. Request copy via Fast Fax.

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FOR A NEW ADVERTISING CAMPAIGN

"We have three objectives for the campaign," said Russ Ryan, manager, marketing communications, about the recently begun GE Information Services Company advertising campaign. "First, we intend to establish a presence for GE in the enhanced communications marketplace. Second is building credibility for our enhanced communication capability at both the technology and application level. And third is generating awareness and credibility in this arena so that we can prepare the marketplace for a major network enhancement in the third quarter of this year."

The campaign, which began on February 8, will be running in three levels of publications: general business such as *Forbes*, *Fortune* and *Business Week*; the MIS and communication publications; and selected vertical market publications. (See box below for schedule.)

"We are expecting to reach close to 70 percent of our main target-the senior functional and MIS managers in the Fortune 1000 companies-seven and one-half times with this series of four main ads. The first is an introductory ad (at right): the second is an overview of the whole business logistics area, showing how GE Information Services can apply telecommunications technology to business problems. The third will be an expansion of our telecommunications capabilities and their implications on the marketplace, especially with respect to helping clients optimize existing systems. And the fourth will be more oriented to the value of telecommunications in the international arena. The MIS/communications books will carry ads of a more technical nature. And the verticles will hone in on specific markets under the business logistics banner.

Russ noted that the advertising campaign is part of a broad program to develop more presence in the marketplace. "We are going to be at Interface '85 in March. We have speakers on the program and we're

Prepare yourself for A Higher Form Of Intelligence.

Imagine being a superior being. Imagine being so omniscient that you not only perceive what on God's earth is really going on in your own corporation, but you can also do semething about it.

Unfortunately you don't have the know it all to know it all And you won't as long as there's a failure to communicate. Because if you can communicate, well then, you can't act intelligently.

the matter. In this age of so-called advanced technology and highfalutin gizmoscomputers, word processors, communication networks and all kinds of abstract software – your business world is in a state of confusion.

All those brilliant computers ar ompatible. They don't talk to eac ther or speak the same language iteract in any meaningful way s short, they don't communicate. Which is why you're not getting

Or this trickling in ever so a too wely. Or worse, it's completely wrong. Or it's in Chinese and that's Greek to you. Now we're not going to suggest that you replace all your systems with ones that are compatible. What we are going to suggest is something much more appropriate and reasonable.

se fiercely intelligent

the fact that we ha initials. Or that we business for 20 yes to Or simply becau aren't satisfied wit

They want to move up

INFORMATION SERVICES

munications of a higher form

It consists of the largest and most

having a press breakfast, in addition to a large booth. And we are also evaluating some other major communications industry tradeshows for later in the year."

"This increased level of activity is evidence of the company's commitment to enhanced telecommunications, and goes hand-in-hand with the investment in technology that GE Information Services is making."

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|-------------------|---|------|------|------|---|----|-----|------|---|-----|------|----|----|----|----|----|----|-----|----|----|----|---|---|------|----|----|---|-----|-----|----|
| WEEK OF MONDAY | | FEBR | UARY | | | MA | RCH | | | | APRI | | | | M | AY | | | JU | NE | | | | JULY | | | | AUG | UST | |
| | 4 | 11 | 18 | 25 | 4 | 11 | 18 | 25 | 1 | 8 | 15 | 22 | 29 | 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 |
| Business Week | | | Х | | | | Х | | | | Х | | | | Х | | | | Х | | | | | Х | | | Х | | | |
| Economist | | | Х | | | | | Х | | | | Х | | | | Х | | | | | х | | | | | | | | | |
| Forbes | | | | Х | | х | | | | Х | | | | Х | | | | х | | | | Х | | | | | | | | |
| Fortune | | | | 1.71 | Х | | | huit | Х | | Х | | Х | | | | Х | | Х | | | | | | | | | | | |

ALL EMPLOYEE MEETING LOOKS AT FINANCIALS, ANSWERS QUESTIONS

Nearly every employee at GE Information Services headquarters in Rockville attended the January all employee meetings. President Walt Williams introduced each session with a detailed review of the 1984 financials.

"If we take the net of \$41.1 and take out all of the unusual items—the items that were not directly related to our business operations—we had a real world "income from operations" of \$28.3 million. While this is still almost a 4 percent ROS for a business in transition, which is pretty good, it does establish a tough but realistic base for us to look at as we consider our 1985 targets," he said.

He went on to describe the 1985 targets of \$770 million in revenue and \$45 million in net income as making for another tough year.

Walt closed his remarks with a description of some elements he believes belong in the GE Information Services culture:

"Strong ownership for our individual businesses and jobs.



Walt Williams



From left: Ray Marshall, Mike Emmi, Bob Healing, Jack Mulford, Jim McNerney, Alan Crites, Ed Stewart, and Bob Agans.

"Application of leading edge technologies that may be owned or sourced or shared.

"Dedication to leanness and agility that makes us thirst to identify major productivity hits.

"An openness that lets us ask questions and discuss our problems that productively facilitates actions and makes this a more comfortable atmosphere to work in.

"An organization of people that is dedicated to excellence in execution, and is as decisive about not doing things as it is doing things.

"And, overall, a 'win culture'—a culture and atmosphere that turns us and our families on, and makes the whole thing worthwhile."

Qs & As: A SAMPLE

Prior to the all-employee meeting last month, nearly 100 questions were submitted to GE Information Services President Walt Williams and his staff. Following are the most commonly asked questions and answers.

Q: Will we be sold to AT&T or Sears?

A: As far as anyone can determine now, no.

Q: Is it true that Jack Welch is running out of patience with us?

A: No. He was pleased with our '84 results, though he would like to see us break out of our revenue doldrums. We will be positioned in the GE Annual Report as one of the 15 key businesses of the company reporting directly to the CEC.

Q: Do we anticipate more reorganizations and layoffs, particularly if we are not making our numbers this year?

A: We hope that we are now more in control of our businesses and we can avoid the holiday season layoff phenomenon, but I can't swear to that. If we

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The meeting content was thought provoking.

are blowing our numbers, we can't sit back and just accept lower results.

Q: Why do we have so many vice president titles in this business? Wouldn't we be better off spending this money on engineering development?

A: We are taking a look at organization layers that are unnecessary, and that, if removed, would free up resources and make us a more agile organization. The use of titles is more important to our posture with clients and the outside world than it is to internal requirements.

Q: What is the status of our facilities plans?

A: Though we may make some minor adjustments in our current facilities, we are not planning a move to the Gaithersburg property.

Q: How and when will ICSO be fully integrated?

A: There is no plan for a major integration of ICSO. They are a free-standing business and may stay that way forever.

Q: Instead of annual layoffs, why not weed out poor performers on an ongoing basis.

A: We have been going through a skill mix change from timesharing to telecommunications, with corresponding changes in our work force. Other companies in our industry have been experiencing similar layoffs.

Layoffs do not take the place of managing people, and we do perform that function. In fact, last year 100 poor performers were removed from the payroll.

There is a strong commitment to people by this company and we will keep working to demonstrate that. **Q:** In light of the recent reductions in force, how can Employee Relations expect us to refer new employees as suggested by the brochure sent to our homes?

A: Employee referrals are our highest quality, lowest cost recruiting source. Since we have a need for new employees because of turnover and because of the changing skills needed by the business, we are looking for even more hires through employee referrals in 1985.

As far as building job security, a profitable, viable business that wins new business and keeps cost in line provides job security.

Q: Is there some copyrighted software we shouldn't buy because of all the legalese on the package?

A: Buy what you need, but don't be guilty of software piracy. Once you've opened the product package, you, and GE Information Services, are responsible for complying with all the terms and conditions of the software license.

Q: Are we doing anything to get 'site-licensing' of software?

A: We are looking into it. It is an intelligent way to address a difficult topic.

Q: In reference to "In Search of Excellence," what do you do to motivate and grow your managers?

A: Three things: Separate responsibilities down to identifiable chunks; get aggressive win-oriented managers and turn them loose; and let them ask for help when they need it.



The meetings featured lively Q&A sessions.

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Telecommunications Pursuit was played each day throughout the course. Correctly answering questions on telecommunications technology moved the teams of players around the gameboard to the winner's circle.

MANAGERS MAKE TELECOMMUNICATIONS SWITCH

Last month nearly 60 managers from Marketing and U.S. Sales Operations spent a week at the International Training Center learning how to make the "Telecommunications Switch." The five-day course



The computer fair gave the meeting participants a chance to observe demonstrations of a host of new packages and capabilities including WPXchange, computer conferencing, AppleLink, and SOFTRAN I.

totally immersed the participants in the technology, the regulatory environment, marketing, the capabilities, and the possibilities of telecommunications at GE Information Services. Speakers during the sessions were drawn from all areas of the company as well as clients and industry experts.



Preparing for Apple Night: One of the highlights was Apple Night, during which the attendees had an opportunity to learn about the capabilities of Apple's line of computers. Apple President William Campbell introduced the evening with some Apple insights.

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MacLion, a relational database from Computer Software Design, Inc., of Anaheim, California, was one of the demonstrations at Apple Night.

TELECOMMUNICATION MARKETS AND CAPABILITIES BLITZ COMING

Educational Services is now engaged in developing a three-day overview course of the fiveday "Making the Telecommunication Switch" course presented to managers, last month. The pilot will be in mid-March, and two teams will blitz the major field locations in March, April, and May. It will be aimed at all field Marketing & U.S. Sales Operations people—sales, technical representatives, and SDC.

HE DID IT: Eleven Night Years Yields Degree

It took perseverance on his part—and patience from his family—but after 11 years of night school a Rockville employee has just received his Bachelor of Science degree.

L.W. "Skip" Hyre, data communications techniques specialist, was presented the degree in Information Systems Management from the University of Maryland in January.

A 35-year-old father of three and a cub scout den leader, Skip says his wife Kathy was "awfully patient with me" during the 11 years of after-hours college courses, usually two nights a week. "I've had a lot of support from my managers, too," he says.

Skip graduates with a 3.6 grade point average after making the Dean's List the last three semesters. Now he has other plans for nights and weekends. Plans for graduate school are on the back burner for the time being.

"I'm glad it's over," he says. "I'm going to get to know my family again . . . spend more time with them. But I'd do it again, and I'd encourage other people to do it."

Skip says his first taste of higher education in 1969 at Montgomery College was interrupted by a three-year stint in the Army. After being discharged in 1973 he ac-

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cepted an offer from GE Information Services Company to be a computer operator on the strength of one year of computer tech school and a pilot program in computer science he had completed in high school.

After less than a year with GE Information Services, he began working toward an Associate degree in computer science from Montgomery College, which he received in 1980. After taking a semester off, he enrolled at University College, the University of Maryland, where, with the financial assistance of the GI Bill and GE Information Services' Tuition Refund Program, he was graduated.

During that time, Skip's hard work earned him a promotion to test coordinator and later to his current job, a techniques position which supports network development—both hardware and software—''anything that has to do with communication links,'' he says.

His career objectives include either project management or consulting work in systems planning, facilities operations, and communication analysis. Graduate school, using GE Information Services' Tuition Refund Program, is on hold at this point. For now, it's time to savor the sweetness of reaching a long-range goal, and doing it with honors.



Skip Hyre

WELCH ON '84: \$2.5 BILLION IMPROVES COMPETITIVENESS

Investment of \$2.5 billion in new plant and equipment—almost \$800 million more than 1983—with a heavy emphasis on productivity-oriented investments aimed at improving long term worldwide competitiveness.

That was one of 1984's highlights for General Electric reported by GE Chairman Jack Welch in announcing the company's *preliminary and unaudited* financial results for the year.

In his January 16 announcement, Welch also cited other highlights of 1984 including total Research and Development expenditures of about \$2.3 billion, up 9 percent from 1983, the previous high, with the company funded portion being up about 13 percent.

Welch said that preliminary, unaudited results indicate that sales for 1984 were about \$27.95 billion, compared to last year's \$26.80 billion. Sales for the 1984 fourth quarter were about \$7.98 billion, compared to the \$7.43 billion for the final quarter of 1983.

Net earnings of General Electric for the total year 1984 were approximately \$2.280 billion. This compared with the \$2.024 billion reported for 1983. Earnings for the fourth quarter of 1984 were about \$652 million, while last year's were \$579 million.

To put GE's 1984 sales in perspective, Welch said that they must be adjusted to reflect the dispositions of Utah International and the Housewares business in the second quarter of 1984. Adjusting for these dispositions, sales were up 14 percent in the fourth quarter, and up 10 percent for all of 1984, compared with prior periods.

Other '84 Highlights

Commenting on the results, Welch listed some other highlights of 1984:

- An increase in operating margin to 10.2 percent of sales, up from 1983's strong 9.5 percent.
- Continued solid earnings growth. This came from tight cost controls and continuing emphasis on productivity improvements, as well as generally good domestic economic conditions.
- Successful completion of several business dispositions (Utah International, small household appliances, cablevision operations) as an integral part of our overall business restructuring strategy. Also as part of the restructuring programs, reserves and asset revaluations of about three quarters of a billion dollars were provided to support a variety of plans to improve GE's long-term competitive position. There was no impact on 1984 after-tax earnings from restructuring activities.
- Implementation of a number of new business development activities. The principal one was the \$1.1 billion acquisition of Employers Reinsurance Corporation to augment our already wide spectrum of financial services.
- Continued sound financial condition. Cash, marketable securities, and highly liquid investments held for future business development were about \$3.2 billion at year end. The ratio of total debt to capital was reduced again and is now at 12.4 percent, two full points lower than a year ago.

Key Businesses Contribute

Chairman Welch said that, "Most of our key businesses contributed to the increased sales and earnings. Consumer related businesses such as major appliances, lighting, and plastics had excellent productivity gains and experienced good demand, although the rate of sales increase slowed in some markets as the year progressed. Strong sales and earnings growth continued in high technology businesses such as aerospace and aircraft engines. Similarly, financial services affiliates had a very good year. On the other hand, GE's total export sales from the U.S. were down about 10 percent in 1984, and international markets for construction projects, especially in Latin America, remain spotty or stagnant.

He added that, "With respect to the outlook, we are assuming a healthy, but slower, rate of U.S. economic growth in 1985 than in 1984. Federal budget deficit reduction is still far from a reality. The dollar remains strong, thus dampening orders for exports from the U.S. and making it easier for imported products to compete with U.S.-made products. Uncertainty about U.S. tax reform may cause indecision and delay by customers in making major investment decisions. While most of GE's businesses expect to have increases in real volume during 1985, improved earnings will mainly come from continued productivity improvements.'

MILESTONES

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

30 years Rockville James Porter 25 years Rockville Adella Waddell

20 years Schenectady Thomas Smith

15 years Rockville

Gwen DeLacy 10 years Dallas

Joan Miller Morristown Eileen Reidinger Philadelphia Beverly Powell Rockville

Paul Bogen Roger Dyer

5 years Burlington

Paul Hamel

Chicago James Shaner

Denver Lynette Griffin

Houston

Judy Vorwerk

Lakewood Tamila MacPherson-Hill

Lyndhurst George Burke

New York

Beth Ann Bauman Oak Brook

Shelley Schwartz

Rockville Lydia Chang Robert Green Joyce Johnson David McIntosh

Mamie Yee

COMPETITIVE INSIGHT

Editor's note: The following is one of a series of reports on GE Information Services' competitors made by managers from Technology Operations. The remaining reports will appear in future issues.



Don Deutsch

IBM, AT&T: A TALE OF TWO DISSIMILAR GIANTS

This report might be called a tale of two giants just starting out in U.S. teleprocessing services. Size, however, is about all the two have in common.

In the land of data processing, the IBM's Domestic Information Network Organization seems to be a sleeping giant, while AT&T Information Systems Net 1000 (value added network service) appears to be a giant in critical condition.

IBM (in the U.S. only) re-entered the network services business in 1982, in support of in-house hardware sales. It had first ventured into the field nine years earlier but had to discontinue as part of an anti-trust settlement.

The company scored a big win in selling its value-added network to the insurance industry soon after re-entering the marketplace. Building on that win, it formed Information Exchange in 1984, a generic version of the store-andforward service IBM had provided the insurance industry.

The network has a single processing center in Tampa, with 10 mainframes and some 308X upgrades, serving about 70 hosts, 7,000 terminals, and 9,000 users with direct access in 16 major U.S. cities. It provides service to an additional 250 cities with asynchronous access via GTE Telenet. The IBM Data Center Services in the Netherlands is a gateway to 10 European countries and Japan. In addition to insurance, IBM also provides services to a sizeable medical and health care industry clientele.

Both the Insurance Agency Value-Added Network Service (IVANS) and the Information Exchange provide protocol conversion to IBM's SNA/ SDLC. X.25 is neither available nor planned. Under the two flagship operating systems, VM and MVS, the information network offers a complete complement of programming languages and database management systems.

The focus of the IBM Information Network Operation is not the network itself, but rather the extensive collection of IBM system software products and easy-to-use program development aids. The underlying goal is for the network to complement IBM hardware and software sales, establishing the company as a single-source vendor for data communications and data processing products and services.

With 772 technical and 458 non-technical employees, the IBM Information Network Operation had sales of \$40 million in 1983, and anticipates \$48 million in 1984. It's growing in strength because of a strong base, an aura of stability, a marketplace based on IBM software as the standard, and the company's inhouse sales contacts. One possible weakness, the network's dependence on IMS and related DBMS products, will be transformed into a marketplace advantage by the promised fourth quarter 1984 availability of the SQL/DS and DB2 relational data base management system products.

AT&T Information Services (ATTIS) Net 1000 is another story altogether.

The network has been in the development stage for 10 years to the tune of \$1 billion. Yet, it's still barely off the ground with a poorly defined product and a complicated pricing scheme. A sales force dedicated to the network was disbanded. Critics say it's a regulated age offering in a deregulated world.

It does however, offer widerange device support, 85 percent of the installed base, focused on big applications in Fortune 500 companies. Currently ATTIS has about 50 customers including the Bell Operating Companies. It has a partnership with Dow Jones and prototype applications with Transamerica and Roadway Express, but the amount of revenue generated from these pilot applications, if any, is unknown.

Technologically, the packet switching network is limited. It offers no protocol conversion, the X.25 1980 standard, and nodes in only six cities (international networking is the company goal). ATTIS offers no software and its customer programming language is a COBOL 74 subset. Furthermore, there is no support for AT&T processors and PBXs.

While ATTIS might drop Net 1000 and focus on ACCUNET, its VAN offering, AT&T has the resources to preclude failure. Whether it's willing to pump in more money on top of the \$1 billion investment is the big question. **Don Deutsch**, manager Data Management Systems Nashville, Tennessee

NOTING

DPA INVESTMENT MAXIMUM BACK AT 7 PERCENT

Beginning January 1, maximum investment in the S&SP Deferred Pay Account went back to 7 percent of pay for employees whose rate of participation had to be reduced in November and December of last year.

DPA is part of the Savings & Security Program. Under it, an employee can invest up to 7 percent of earnings and have the investment and earnings sheltered from tax until the account is paid out at retirement.

The temporary reduction in the rate of investment for some employees resulted from regulations of the government's Internal Revenue Service. Under those regulations, higher-paid employees were required to cut back their DPA investments to a maximum of 2 percent of earnings during the final two months of 1984 in order to keep the proper balance between their investments and average investments by other employees.

RATES RISE FOR EACH DEPENDENT LIFE PLAN

Claims incurred under the Dependent Life Insurance Plan for Hourly and Nonexempt-Salaried Employees were more than was anticipated in 1984. Similarly, the plan for exempt-salaried employees also had unfavorable experience.

As a result, an increase in contribution rates went into effect with the beginning of 1985 for each plan. The new rates are required in order to meet the expected claims for benefits in 1985.

Under the plan for hourly and nonexempt-salaried employees coverage for Option I is 60 cents per week (50 cents

WORTH Noting

continued

in 1984). For Option II the rate is \$1.20 per week (\$1.00 in 1984). And for Option III the rate is \$1.80 per week (\$1.50 per week in 1984).

Option I provides for spouse coverage of \$5000 with each dependent child covered by \$1000 in insurance. Option II provides \$10,000 in spouse coverage and \$2000 in coverage for each dependent child. Option III offers \$15,000 in spouse coverage and \$3000 in coverage for each dependent child.

Under the plan for exemptsalaried employees, which has similar options, the rate for Option I is \$1.25 per month (\$1.00 per month in 1984); for Option II the rate is \$2.50 per month (\$2.00 per month in 1984); and for Option III the rate is \$3.75 per month (\$3.00 per month in 1984).



GE supports Miss Liberty's reconstruction.

Under this new program which starts in January and runs until July 4, 1986, employee and retiree contributions of at least \$15 to a maximum of \$500 per donor will be matched by the GE Foundation.

Brochures explaining the program and containing a pre-addressed envelope for mailing contributions may be requested from the Maryland Center Stationery Room.

Gifts to the Statue of Liberty-Ellis Island Foundation are tax-deductible, and each donor will receive a Certificate of Appreciation inscribed with his or her name and signed by Lee Iacocca, Chairman of the Statue of Liberty-Ellis Island Commission.

GE LIGHTED ORIGINAL

General Electric provided the original electrical lighting for the Statue of Liberty's torch in 1916. Now, GE's Lighting Business Group is designing the lamps and will donate state-of-the-art exterior lighting that will enhance Miss Liberty's night-time appearance well into the 21st Century.

The GE Foundation Trustees have authorized a total of \$250,000 to match employee and retiree contributions. In addition, the GE Foundation has already made a grant of \$250,000 to underwrite the installation costs of the new exterior lighting system for the Statue of Liberty. As a result, the Statue of Liberty-Ellis Island Foundation can receive as much as \$750,000 in cash contributions from employees, retirees, and the GE Foundation.

CALLING GE RUNNERS

If you would like to be kept posted on corporate team running activities within GE and around the country, please send your name and company mailing address to: Jack Berkery, GE Corporate R&D Center, Building 37, Room 333, 1 River Road, Schenectady, New York 12345.

12.50 PERCENT IS ANNOUNCED RATE FOR 1985 HP FUND SAVINGS

The expected annual interest rate for 1985 savings under the Savings & Security Program's Holding Period Interest Fund (HP Fund) has just been verified as 12.50 percent.

The new HP Fund rate is usually announced each year before the new S&SP investment year begins. However, this year, because of lengthy negotiations between the Fund trustees and financial institutions bidding for use of the Fund, the announcement of the rate was delayed.

Employee savings invested in the HP Fund during 1985 will receive the new 12.50 percent annual interest rate, not only for each year of the three-year holding period but also for the portion of 1985 in which they are in the Fund.

Tom Burns, manager of employee benefits for the company, points out that the new rate applies not only to 1985 savings going into the HP Fund, but also to interest that is credited in 1985 to any participant's HP Fund savings of 1982, 1983, or 1984.

Burns explained that HP Fund savings of years before 1985 will continue to earn interest at the rate announced for those years. For example, savings in the HP Fund in 1982 earn a rate of 16.25%; for 1983 the rate is 13.25%; and for 1984 the rate is 12.75%. However, the interest credited in 1985 for savings of any of those previous years is considered part of 1985's investment and earns the '85 rate.

The S&S Program provides that if the actual rate of interest varies from the announced rate for a particular year, HP Fund investments for that year will receive the actual rate earned.

NO CHANGE IN LTDI Rates for 1985

Contribution rates for coverage under GE Long Term Disability Plans will be the same in 1985 as in 1984, according to information from Metropolitan Life Insurance Company which insures the Plan.

The insurance company said that claim experience under the plans has been favorable in 1984. This will offset the rate increase that would have been required to pay the increased benefits that result from higher wages and salaries. Benefits under the LTDI plans are based on pay and go up as pay increases.

GIFTS MATCHED TO STATUE OF LIBERTY RESTORATION

General Electric employees and retirees can help relight the torch of the Statue of Liberty in time for its centennial celebration in 1986 through a special gift-matching program of the GE Foundation.



The big 1985 "payout" of \$479 million in securities and cash to more than 114,000 GE people is almost complete. It is the result of the annual distribution of securities and cash under the GE Savings & Security Program.

The GE stock involved in the "payout" was mailed to participants on January 2. U.S. bonds were scheduled for mailing on January 11. Long Term Interest Fund and Mutual Fund statements were slated for January 14 mailing. Any of the securities scheduled to go into employee Retirement Option Accounts were transferred as 1985 began.

The big "payout" comes as a result of employee investments under S&SP in 1981, as well as matching payments to employee accounts in that year. The three-year holding period for those investments came to an end as 1984 ended, and the securities involved must be paid out or put into retirement accounts.

The new Deferred Pay Account option of S&SP began in 1984 and is not involved in 1981 savings.

The dollar value of this month's big distribution—\$479 million—is based on 1984 year-end market values of GE Stock, S&S Mutual Fund units, Holding-Period Fund units (which are distributed as Long Term Fund Units), and the maturity value of the U.S. Savings Bonds involved.

The year-end market value of a GE share on the N.Y. Stock Exchange was \$56.75. The year-end value of an S&S Mutual Fund unit was \$34.25. The value of an HP Fund unit as it was turned into Long Term Fund units was \$10.

This year marked the second distribution of LT Fund units. They result from investment in the HP Fund during the holding period. HP Fund units come out of the holding period in the form of LT Fund units of equal total dollar value.

Tax Statement Coming Savings & Security Program specialists urge those who received a distribution this month to look for the Annual and Tax Information Statements to be mailed later in the month. This statement provides the "tax cost" of securities now being received as well as the "taxable" income to be used in income tax returns. The "taxable income" is to be used in income tax returns next year since the securities are being received in 1985. However, the statement will also provide taxable income information related to the S&SP distribution of January 1984, as well as other withdrawals in 1984. This is for use in tax returns now being prepared.

The specialists explain that under programs such as S&SP, a special formula determines "tax cost" figures for use when securities are sold. These are the figures provided on the "Tax Information Statement." The monthly "stock price" should not be used to determine gain or loss when preparing tax returns.

As a matter of information, however, in 1981, when securities being received this month were purchased, the average price for GE stock was \$30.49 when the recent two-for-one stock split is considered. S&S Mutual Fund units had an average price of \$25.92 in 1981. HP Fund units were priced at \$10 each in 1981, since they are not traded on the open market and the price does not fluctuate.

1984 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.

| Month | | | _ | Holding | Long Term Fund | | | | |
|-----------|--------------|------------|---------|---------|----------------|-------|------------|---------|-------------|
| | Dent | Martin | | | YTD | | YTO Annual | | |
| | Price | Fund Price | Price | 1981 | 1982 | 1983 | 1984 | Price | Income Rate |
| January | \$ 56.482 | \$32.991 | \$10.00 | 13.2% | 16.5% | 13.7% | 13.0% | \$10.42 | 11.8% |
| February | \$ 53.206 | \$30.989 | \$10.00 | 13.2% | 16.6% | 13.7% | 13.2% | \$10.30 | 12.0% |
| March | \$ 52.188 | \$30.915 | \$10.00 | 13.2% | 16.5% | 13.6% | 13.2% | \$10.14 | 11.7% |
| April | \$ 53.825 | \$30.831 | \$10.00 | 13.1% | 16.5% | 13.6% | 13.3% | \$10.02 | 11.7% |
| May | \$ 53.875 | \$30.845 | \$10.00 | 13.1% | 16.5% | 13.6% | 13.3% | \$ 9.76 | 11.6% |
| June | \$ 53.250 | \$30.309 | \$10.00 | 13.1% | 18.5% | 13.6% | 13.3% | \$ 9.67 | 11.7% |
| July | \$ 50.756 | \$29.953 | \$10.00 | 13.1% | 16.5% | 13.6% | 13.3% | \$ 9.83 | 11.8% |
| August | \$ 57.158 | \$32.927 | \$10.00 | 13.1% | 16.5% | 13.6% | 13.3% | \$10.00 | 11.8% |
| September | \$ 56.658 | \$33.236 | \$10.00 | 13.1% | 16.5% | 13.6% | 13.3% | \$10.13 | 11.9% |
| October | \$ 56.065 | \$33.128 | \$10.00 | 13.1% | 16.5% | 13.6% | 13.3% | \$10.49 | 11.9% |
| November | \$ 57.113 | \$33.706 | \$10.00 | 13.1% | 18.5% | 13.6% | 13.3% | \$10.69 | 12.0% |
| December | \$ 55.563 | \$33.633 | \$10.00 | 13.1% | 16.6% | 13.6% | 13.3% | \$10.94 | 11.8% |

The following represents the closing price of General Electric Stock, and Savings & Security Mutual Fund Price on December 31, 1984.

Stock = \$56.75

Mutual Fund = \$34.25



EVERYTHING YOU NEED TO KNOW...



John Farrell (center), manager, revenue accounting and contract administration, recently received one of the first New Manager's Starter Kits from Jeff Cook, manager, customer accounting, and Janet Oates, Employee Relations manager, staff components. The kit, which was developed at Crotonville, is designed to start the new manager the right way until formal classroom training begins. It contains a guide to basic management functions as well as policies and procedures; a trouble shooting guide with 'what if' situations; an audio cassette on GE Chairman Jack Welch's management philosophy; and a portable desk reference, a directory of who to call in various situations, which individual components can customize. There is also a local resource book slated to be ready this year. The New Manager's Survival Kit is part of a sequence of training for new managers. It is designed to be presented to the new manager by his or her manager and Employee Relations manager and be followed six months later by the New Manager's Development Course at Crotonville.

