DIGITAL RESEARCH® NEWS

Volume 5 , No. 1 | For Digital Research Users Everywhere | First Quarter 1985

GEM™ Software: Next step in micro graphics

Demonstrations of GEM software attracted interested crowds to the Digital Research booth at COMDEX/Fall'84. The products use icon symbols and pull-down menus to simplify the operation of computers.

Familiar items displayed when using GEM Desktop™

Road signs convey messages visually. The symbols are widely used and, therefore, widely understood.

The same may be said for GEM Desktop. It provides familiar symbols that are displayed on the video screen of a personal computer. The symbols, or icons, convey information that simplifies operation of any DOS computer.

GEM Desktop is an operating environment. As such, it provides a visual method of running applications and organizing files created with these applications. All existing PC-DOS and MS-DOS software (such as Lotus 1-2-3, WordStar, Multiplan and Multimate) may be used with GEM Desktop.

"People who have already purchased software can continue to use their applications under the GEM Desktop environment," said Rob LaTulipe, product line manager. "Other types of operating environments have been introduced, but they require buyers to reinvest in specially designed software."

GEM Desktop is sold separately to OEMs or hardware makers who may bundle or ship it with their machines. Initially, it is targeted to floppy disk users.

GEM Desktop is included with GEM Draw and GEM Wordchart. The desktop portion may be used to manage files created with either of the other two applications. Yet, the features of GEM Desktop may be called on any time, not merely when running GEM Draw or GEM Wordchart.

Whenever the computer is turned on, the desktop appears. Familiar items found on a desk — a calculator, clock or file folder —are simulated on the computer screen.

"It's been said that pictures are worth a thousand words," LaTulipe noted. "If that's true, the icons used in GEM Desktop replace several binders full of documentation."

Work is performed by moving an

See Desktop, page 4

Anyone who has ever been frustrated by operating a personal computer can benefit from the latest graphic technology introduced by Digital Research. The Graphics Environment Manager™ lets people operate computers through visual commands and symbols.

"The technology brought forth in GEM software represents a major step in the evolution of graphics software," said Dr. Tom Byers, product marketing manager for Digital Research. "GEM software changes the way people interact with personal computers. It means they can operate microcomputers through common sense rather than consulting a thick volume of documentation."

GEM software is an extension to Concurrent™ DOS, PC-DOS and MS-DOS operating systems. Sold to hardware manufacturers or software writers who buy the GEM Programmer's Support Service, the extension is scheduled for release during the first quarter of 1985.

Applications announced

Digital Research has also announced several applications which use the graphics extension: GEM Desktop™, GEM Draw™ and GEM Wordchart™. The latter two products are directed toward non-technical professionals interested in a simple method of producing presentation slides, charts and foils.

GEM Desktop, sold separately to OEMs and included as part of GEM Wordchart and GEM Draw, simulates an employee's work areas. Familiar items such as a calculator, clock, paper, folders and so on are represented as icon symbols.

Each icon may be selected by moving an arrow that appears on the computer screen. The arrow is controlled with a mouse or some other type of pointing device attached to the personal computer. Tasks are performed by moving the arrow to the appropriate icon and selecting a command from a menu of choices.

"It's as simple as driving a car," Byers said. "Most professionals cannot afford to stop their work and spend several days learning the fundamentals of operating a computer. GEM software provides novices a way to learn computer basics in minutes."

Evolves from GSX™

GEM software builds on Digital Research's expertise in graphics. It is an outgrowth of GSX, a Digital Research graphics extension to operating systems. GSX produced images through bit-mapped vector graphics.

GSX has been accepted by manufacturers throughout the world and used as the foundation for some of the most popular types of graphics software, among them products sold by Digital Research. The graphics extension grew in popularity because it supported a wide variety of hardware peripherals such as video screens, printers, plotters, light pens and mice.

As with GSX, buyers of GEM software can choose from a wide range of hardware peripherals. Users can mix and match the hardware best suited to their needs.

And like GSX, GEM software gives applications writers a common ground for creating applications.

"It's as simple as driving a car ... GEM software provides novices an easy way to learn computer basics in minutes."

According to Don Heiskell, Digital Research engineering manager for graphics applications, such a standard encourages development of graphics-based software.

"Applications that utilize icons, windows and pull-down menus require a vast amount of expertise and time to develop," Heiskell explained. "Digital Research is offering its software tools as a standard way to produce graphics-based applications."

The software tools necessary for

See GEM Software, page 4

Digital Research unwraps powerful Concurrent™ DOS

After several years of cooperative efforts with other leading companies in the industry, Digital Research has announced Concurrent DOS for the next generation of microprocessors.

The advanced operating system from Digital Research has been designed for the emerging generation of powerful personal computers based on the Intel 80286 and Motorola MC68000 and MC68010 microprocessors.

Concurrent™ DOS-286 and Concurrent™ DOS-68000 may be used for networking, communications, multitasking and single or multi-user systems. Both versions are bundled with GEM, the latest graphics extension that lets people use visual commands and symbols to operate computers. They are scheduled for release to Original Equipment Manufacturers in the second quarter of 1985.

"The operating systems reflect the trend toward multiuser and multitasking systems," said John Rowley, president of Digital Research. "They build on the existing foundation of software to provide the benefits of advanced microcomputers without requiring users to reinvest in new software."

The compatibility of Concurrent DOS-286 is described as "compatibility plus" because it supports existing CP/M-86® and PC-DOS applications. Software designed for either the CP/M-86 or PC-DOS operating systems may be used without modification. At the same time Concurrent DOS-286 provides extensive functionality to enable differentiation for both OEMs and ISVs.

Concurrent DOS-68000 runs any software written for its predecessor, CP/M-68K™. According to Darrel Miller, marketing manager for operating systems, PC-DOS applications written with Digital Research languages also may be ported to Concurrent DOS-68000.

Work on Concurrent DOS-68000 was initiated two years ago under contract to Motorola. The agreement called for development of Concurrent DOS 68000 for the Motorola VME/10 Development System.

Versions for both microprocessors give users the ability to run several applications at one time. Thanks to the multitasking capability of Concurrent DOS, users may perform word processing at the same time they print a letter.

"Any number of applications may be run at the same time given sufficient memory space," Miller said. "The multitasking and real-time features of Concurrent DOS-286 and -68000 make the

See Concurrent DOS, page 2

How three people can use one personal computer

Concurrent™ PC DOS upgrades a single user IBM PC or compatible computer into a multitasking computer that may be used by three people at the same time.

"Concurrent PC DOS began shipping to retail stores in September and to date remains the only significant multitasking operating system for the PC-DOS world of software," said Darrell Miller, marketing manager for operating systems at Digital Research.

As a single user work station, Concurrent PC DOS can run up to four CP/M-86 and PC-DOS applications at the same time. One application may be displayed on the screen and the others are churning away unseen in the background. At any point, you may switch between the different applications as you would switch be tween stations on a television set.

Windows may be shaped

Or each application may be placed in a separate window on the computer screen. Up to four windows may be shaped into different sizes, so you can watch all of the applications as they proceed.

Have you found an interesting or unusual way to use Concurrent PC DOS? If so, we would like to share it with the readers of Digital Research News. Please send a brief description to Editor, Digital Research News, Box DRI, Monterey, CA 93942.

As a multiuser work station, Concurrent PC DOS gives businesses the opportunity to spread microcomputer power without buying additional personal computers. Two dumb terminals may be attached to the communication ports of the personal computer.

A different application may be run at each of the two terminals and the main console. For instance, one user may run Lotus 1-2-3 while a second user enters information into a file on dBASE II and the third user prints documents from WordStar.

"In offices with few people, seldom do more than one or two people need the personal computer at the same time," Miller explained. "Yet, the system typically sits atop the desk of one worker, whose work must be interrupted every time someone else needs to use the system."

Via RS232 cable, terminals may be placed on the desk of two coworkers. They may access files at any time they wish without disturbing each other. Importantly, private files may be kept off limits. Access is limited through Concurrent PC DOS's file password protection and file and record locking features.

"No other operating system that runs PC-DOS can be used to create a multiuser work station," Miller re-emphasized.

Used by StarLink™

Concurrent PC DOS is used by StarLink, the Digital Research product that turns a personal computer into a multiuser work station for up to five people. StarLink includes a processor board that improves speed of processing compared to Concurrent PC DOS operating alone. Moreover, StarLink provides the ports necessary for the addition of four terminals. (See box on next page to compare multiuser functions of StarLink and Concurrent PC DOS.)

Some of the other features provided by Concurrent PC DOS are:

- File manager for non-technical users. The menu system replaces cryptic commands for operating a computer. A list of selections is provided, and the appropriate command is chosen simply by positioning an arrow. Also, the File Manager helps users organize their work among subdirectories and user areas.
- DR Talk™ communications software. Using DR Talk and a phone modem attached to the communications port of a personal computer, a terminal in a field office may be linked to the central system. Or DR Talk may be used to call on electronic data bases such as CompuServe and the Dow Jones News Retrieval Service.
- DR Edix™, a simple text editor.
- Cardfile™, a Rolodex-like application for storing hundreds of names, addresses and phone numbers.

Multitasking increases productivity

Innovative ways to work with Concurrent PC DOS

Although techological advances can be exciting, they are truly significant only if users can implement those advances to improve their lives in some way. In some cases, implementation requires a new way of viewing or organizating work. So it is with multitasking.

The era of multitasking for personal computers was introduced by Digital Research three years ago when it released Concurrent CP/M.

More recently, Digital Research marketed Concurrent PC DOS. It allowed owners of the IBM PC and compatible computers to run up to four CP/M-86 or PC-DOS applications at the same time.

One application, such as word processing, is displayed on the screen. Meanwhile, three others can churn away as background tasks.

Sounds great. But how can Concurrent PC DOS be used to save time in the office?

Here are a few suggestions:

• The Writer

Word processing has simplified a writer's life. Entire passages can be moved at the touch of a keystroke. Paragraphs can be reformatted. Words can be exchanged. All of this happens without typing a single word or scrapping a sheet of paper.

Unfortunately, most personal computers perform a single task at a time. You can either print or type, but certainly not both. And if a lengthy document is printing, you might as well leave the room for a while.

Enter Concurrent PC DOS. No more waiting for the computer to finish one task before starting a different job. An article can be edited at the same time another document is printed — and you can keep the computer from interrupting your flow of creativity.

• The Stock Broker

The fluctuating price of stocks means stock brokers need an efficient way to keep tabs on all of the listings and customer accounts. When stock prices change in their favor, stock brokers must act quickly to get the best returns for their clients.

Concurrent PC DOS can be the answer.

As things now stand, stock quotes can be sent directly to a desk via electronic data bases such as the Dow Jones News Retrieval Service. All it takes is a personal computer and a phone modem.

Every time you want to use the computer for another task, however, the flow of information from the data base service must be discontinued. The dilemna can create havoc if you miss some important news, and it costs additional money every time you reconnect to the service.

With Concurrent PC DOS, you can continue to receive information. At the same time you may work with an electronic spreadsheet such as Lotus 1-2-3, SuperCalc, VisiCalc or MultiPlan. Every customer can be provided with a separate file in the spreadsheet. Then newest changes in the price of stocks can be entered into the spreadsheet to provide an instantaneous profile of potential profits.

• The Accountant

Imagine an accounting office with a single personal computer. It is the end of the month. Transactions need to be posted. Payroll checks need to be printed. And a customer on the other end of the phone needs to have his credit checked.

The scene could become mighty hectic if your computer processes only a single task at a time. Concurrent PC DOS can help you work your way through the thicket.

Posting, printing and credit checking can be accomplished as if they were being performed on different personal computers. one task does not interfere with another.

• The Programmer

Time means money to programmers and they can reap more of both by developing software in a concurrent environment.

They can begin their workday by compiling a program. While this is happening, they can move on to another screen where they are able to debug a second program.

Still not satisfied with this rate of productivity, the programmer can test yet another program. Furthermore, the programmer can command a listing to be printed.

All of these tasks are working simultaneously. Thus, concurrency allows programmers to be many times more productive than possible previously no matter how efficiently they may have used their time.

Concurrent PC DOS is the first and, at this point, the only major operating system that brings multitasking to the world of PC-DOS applications. Up to four different applications can be performed at the same time.

The multitasking feature mimics the way people always have worked: filing papers and talking on the phone; adding numbers and managing others in the office; editing copy and reaching for a phone number.

For more information on Concurrent PC DOS and the name of the Digital Research dealer nearest you, call toll free (800) 382-1800.

Concurrent DOS

continued from page 1

operating system especially suitable for communications chores."

With Concurrent DOS-286/68K several microcomputers may be combined into a local area network where each system shares software and hardware. Or a microcomputer can communicate to other microcomputers, minicomputers, mainframes and electronic data base services.

Both versions offer protection facilities that prevent one application from interfering with another, and they help keep multiuser systems from failing as a result of operator error.

Password protection is provided so that confidential files may be secured against unauthorized entry. Further, Concurrent DOS-286 and -68000 may be set up so users are required to log on and log off.

"Digital Research is the only company that offers an operating system with protection facilities for the PC-DOS world of applications," Miller said.

Importantly, the protection facilities may result in dramatically new and creative types of personal computers. Until now, manufacturers who wanted their desktop systems to run PC-DOS applications were forced to build IBM PC compatible computers. Concurrent DOS-286 allows manufacturers to design any type of computer — not just an IBM PC/AT clone — and still run PC-DOS applications, Miller said.

Using either version of Concurrent DOS is simplified through GEM, Digital Research's graphics extension. GEM is based on the Virtual Device Interface, a graphics standards proposed by ANSI.

Graphics applications produced under GEM for other operating systems may be ported to Concurrent DOS with little modification. GEM software applications such as the GEM Desktop are offered as options to OEMs.

"Concurrent DOS-286 and -68000 are the keys to remaining competitve in microcomputer industry," Miller said. "Users benefit because OEMs may create solutions for specific markets and build on the existing foundation of software."

Career counselors depend on StarLink in job search

A marketing group in Northern California has combined StarLink from Digital Research and an IBM PC into an inexpensive system for employment agencies.

SearchBase was developed by the Palo Alto Research Group (PARG) as an electronic method to match people with jobs. With StarLink, the PARG system allows up to five employment counselors to share one personal computer.

According to Nancy Schuler, software engineer at PARG, SearchBase addresses one of the major problems confronting employment agencies: how to update and crossmatch the ever-changing files of applicants and job listings.

Typically, career counselors keep mental tabs on all of the applicants under their supervision. One counselor may have interviewed a candidate for a job as, say, a legal assistant. Someone else in the same office may know an employer seeking a legal assistant. Yet, the job remains unfilled unless the two counselors exchange information.

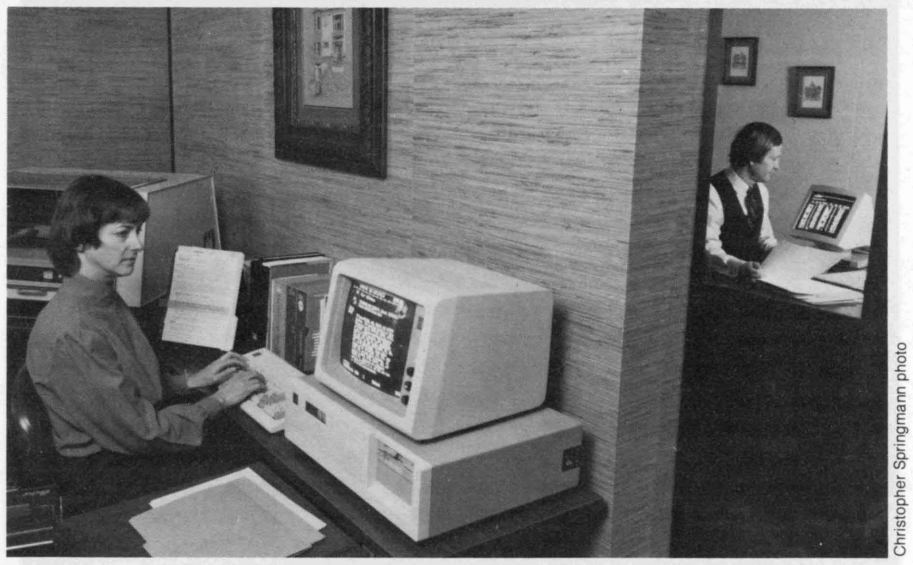
SearchBase provides a central depository for the exchange of information. Hundreds of applications may be added each month and will be sorted immediately, Schuler continued. A position recently opened may be matched to someone who applied days, weeks or even months before.

All users have a terminal at their desk and can draw on the same data base full of applicants and job openings. And all users share expensive hardware such as a printer, plotter and hard disk drive.

The multitasking capabilities provided in StarLink mean that each of the five SearchBase users may call on the system at the same time. Work performed at one station does not interfere with work performed at another.

The personal computer runs under Concurrent PC DOS, the Digital Research operating system included with StarLink. That means the most popular types of business software may be used as well — for accounting, for job costing, for word processing and other chores handled efficiently by personal computers.

PARG supplies all of the equipment and expertise necessary to install and use the system. The SearchBase system includes StarLink, an IBM PC, four Wyse terminals, a Lazer Jet printer, the software and technical support.



Christopher Springmann photo

SearchBase combines StarLink and an IBM PC/XT into a workstation for career counselors. Up to five counselors may use the system, which automatically matches job opportunities to applicants.

What about agencies who already own a personal computer and software?

"StarLink supports the IBM PC and most IBM PC-compatible computers," Schuler explained. "We can customize the SearchBase system to fit existing hardware and software."

The company first learned of StarLink in mid-1984 when Digital Research asked PARG to produce an on-disk tutorial for the product. PARG staff became so enthusiastic about StarLink that they bought one for themselves.

PARG combined its talents with a San Francisco employment agency, Professionals for Computing. Together, they addressed the specialized needs of career counselors and installed the system into the agency's headquarters.

"StarLink has proven invaluable to employment agencies," said Schuler. "Combined with SearchBase, the system replaces the laborious work previously accomplished on paper."

Palo Alto Research is located at 1020 Corporation Way, Suite 103, Palo Alto, CA 94303. (415) 960-0556.

Save money, share resources with StarLink™

Walk through the average company and you will find a variety of different personal computers. Each works away independently of the other, and each has its own set of software.

Problems: These independent computers cannot communicate with each other, they cannot easily share expensive hardware peripherals and they all use different sets of software.

Solution: The latest version of StarLink.

StarLink was introduced in 1984 as an affordable way to spread the power of one personal computer to five people. Up to four inexpensive terminals can be attached to an IBM PC/XT or compatible computer outfitted with StarLink.

The package provides the cable, connectors, documentation and Concurrent PC DOS operating system necessary to make it all run properly. StarLink is sold and supported by select Digital Research dealers and distributors who supply the expertise needed to install the system.

Includes DR Net™

Digital Research has upgraded StarLink to include its networking software, DR Net. Businesses now can use StarLink and DR Net together to create an inexpensive network of personal computers.

Most IBM PC-compatible computers in an office or series of offices may be linked to the network. Then, all microcomputers in the network can share the resources — printers, plotters, hard disk drives, files and software—previously available to just one system.

"It makes sense to share resources," said Michael Loftus, product marketing manager for Digital Research. "StarLink gives businesses a way to save money since several people can share expensive hardware and software.

"Although there are other methods of creating networks, none is as practical as StarLink for businesses that want to share the resources of a handful of personal computers. And StarLink provides the logical upgrade path to large networks that serve hundreds or even thousands of computers."

According to Loftus, the addition of DR Net gives businesses the choice of how they want to design their StarLink network. For instance, personal computers can be substituted for terminals typically used in the StarLink cluster. Further, StarLink clusters can be connected to form an even larger network. Users may share resources whether they are located in the same or different offices.

For instance, a printer may be attached to an IBM PC in one part of an office and a plotter may be attached to a Compaq Deskpro in another part of the office. Through the networking capabilities provided in StarLink, the plotter of the Deskpro may be called on directly from the IBM PC.

Does not interfere

"It's as if the printer or plotter is attached directly to either computer," Loftus said. "Work performed at one station does not interfere with work being performed at the other stations."

Another important benefit of the StarLink network is that computers connected to the system communicate with the network through their standard asynchronous serial card. No additional hardware is necessary.

And what if users run out of disk space on their desktop system? No problem, Loftus said. They can transfer their files from one computer to another in the StarLink network.

For example, a document describing the latest sales forecasts can be transferred from a computer in the accounting department to a computer in the legal department. The document may be inspected and edited by the legal staff and then returned to the accounting manager for final review.

"In spite of the sharing capabilities, each personal computer retains its autonomy as an independent workstation," Loftus pointed out. "Confidential files may be protected from unauthorized access. StarLink gives businesses a way to maintain the advantages of independent work stations at the same time they receive the advantages of a network."

For more information on StarLink and the name of the Digital Research dealer nearest you, call (800) 382-1800.

For a list of applications that can be used on the StarLink system, call (800) 382-1800.

Which system is best for you?

People are saying goodbye to single user computers. The reason? They're tired of waiting in line to use the office computer. They're tired of searching through the office to find information that should be at their fingertips. And they're very tired of waiting for a 50-page report to print or a modem to disconnect before going back to work on an important report or spreadsheet.

That's where the StarLink system and Concurrent PC DOS software come in. These two products from Digital Research work in the office to get more mileage out of an IBM Personal Computer or PC compatible computer by actually letting more people use each computer.

Concurrent PC DOS

If you have just two or three people who need to share a computer, then Concurrent PC DOS is the operating system for you. You'll be able to link two low-cost terminals to your IBM PC through its communications ports. You'll be able to use both PC DOS and CP/M® programs — simultaneously.

Concurrent PC DOS is for you if:

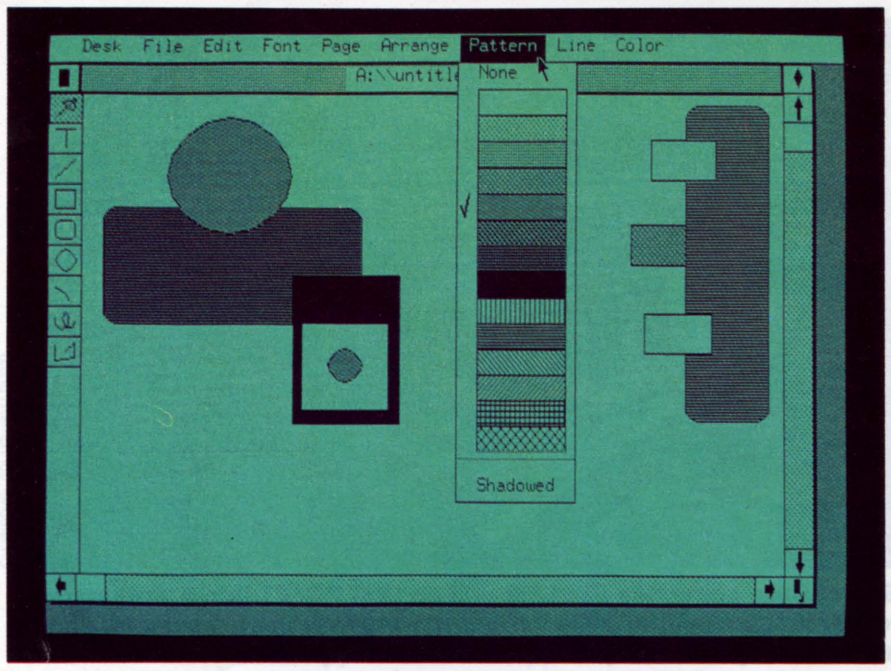
- You are a manager who needs to review documents you've given your secretary to type.
- Your clerical staff needs to work on a CP/M program but your spreadsheet operates only on PC DOS software.
- You own a small business with just two or three people who need to use a computer.
- You have salespeople who need to stay in touch.
- You don't want to interrupt your other work while you monitor an information service.

StarLink

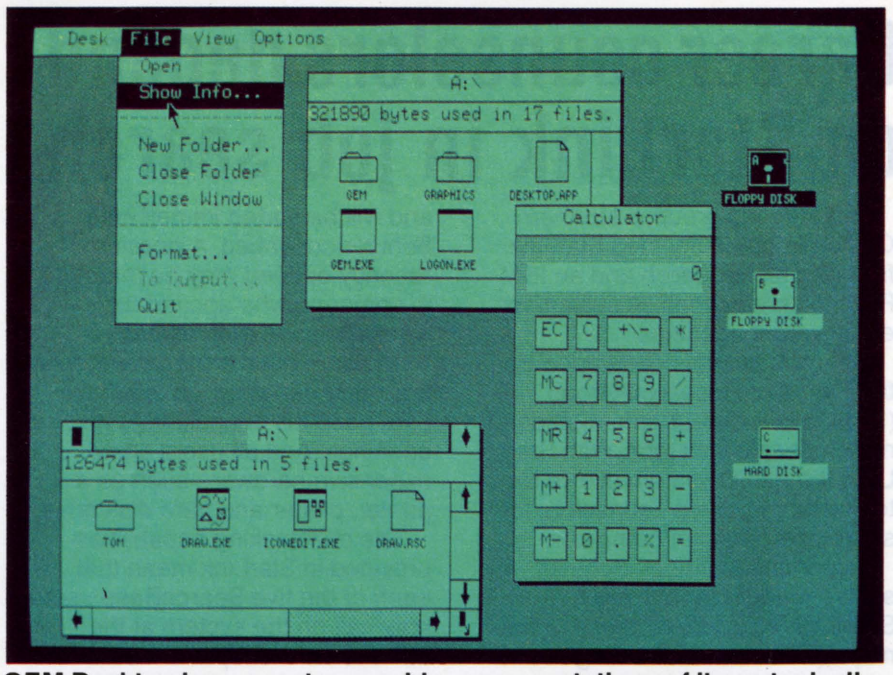
If more people need to get their hands on a computer, the StarLink system is your ideal solution. You can have up to five people using an IBM PC all at the same time while still being able to use your communication ports for mice, modems, and printers. You can even link your IBM PC to other IBM PCs to create an inter-office information network.

StarLink is for you if:

- You have a computer that is "captured" inside the office of one person but others need to use it.
- You have an accounting department of five people who need to share software applications and data files.
- You have four or five people who need to use computers, but four or five computers are not in your budget.
- You buy for a large corporation and need to equip many users without spending a fortune.



Charts or diagrams can be created and edited with GEM Draw. An arrow is used to select the appropriate icon (on left) and pull-down menu (top). GEM Draw is one of several new applications from Digital Research that incorporates the latest graphics technology, the GEM extension to operating systems.



GEM Desktop incorporates graphics representations of items typically found on a desk. For example, files are kept in a folder that may be opened simply by selecting the word "Open" in the "File" menu. Like all GEM products, GEM Desktop runs under MS-DOS, PC-DOS and Concurrent DOS operating systems.

GEM software

Continued from page 1

making icon-based applications have been bundled into the GEM Programmer's Toolkit. (See related story, page 5.) For instance, the toolkit supplies IBM PC device drivers for different types of printers, plotters, screens and other peripherals.

Said Heiskell, "Software writers can concern themselves with building new applications rather than spending time learning the intricacies of the latest hardware."

Information about GEM software and other Digital Research products or the name of the Digital Research dealer nearest you may be obtained by calling toll-free (800) 382-1800.

Roots can be traced

The ancestry of GEM software reaches back even farther than GSX, however.

One of the first computer languages that supported mice and graphics was SmallTalk, which was developed in 1972 by Alan Kay and a group of engineers. At the time, Kay was a specialist at Xerox's Palo Alto Research Center, and his new language led to a greater use of pointing devices inside and outside of the institute.

By 1976, Xerox PARC created software with features such as icons, windows and menus. This technology became part of the Star, a Xerox network introduced in 1981.

"The Star was the first computer to exhibit a simple, graphics-oriented way of operating a computer," Heiskell said.

Later, features similar to those of the Star were refined for the Apple Lisa and Macintosh computers. Both computers are proprietory products that require customized software.

Provides portability

In contrast, GEM software provides portability of graphics technology to a wide range of personal computers using "DOS" — PC-DOS, MS-DOS or Concurrent DOS in DOS mode. For example, GEM software may be used on an IBM PC or IBM PCjr as well as an AT&T PC, Tandy 2000, TI or Compaq.

The first version of GEM requires 90K, and it is layered over PC-DOS and MS-DOS operating systems. All software currently available for either operating system may be run under GEM software so the investment in current application software is preserved.

Subsequent versions of GEM will provide the ability to run several applications at once. A multitasking version will be offered with Concurrent DOS 286 and Concurrent 68000 operating systems. (See related story, page 1.)

"Applications written under GEM may be transferred to any operating system or computer that provides the graphics extension," Heiskell said. "That means GEM can simplify microcomputers used everywhere from home to the office."

For more information about GEM software and the Digital Research dealer nearest you, call toll free (800) 382-1800.

GEM Desktop

Continued from page 1

arrow to the appropriate icon. The arrow is positioned with a mouse or some other type of pointing device such as a touch tablet.

GEM Desktop will stop and start applications. It demystifies the DOS file system and shields users from having to learn the intricacies of operating systems. Traditional operating system commands such as 'FORMAT,' 'COPY,' 'RENAME' and 'DIR' are replaced with menus.

For instance, a folder icon symbolizes a group of related files, better known as subdirectories in computerese." A directory of files is provided by positioning an arrow over the folder icon and clicking to darken the icon. Then the arrow is repositioned over a menu and the command 'open' is selected.

"Once you have tried GEM Desktop, using it will become second nature," said LaTulipe. "After all, controlling the arrow requires little more than good hand and eye coordination."

Applications for the GEM system:

GEM Draw turns computer screen into chalk board

If you need to produce high quality visuals but have trouble drawing a straight line, GEM Draw from Digital Research can turn your business computer into a graphics work station.

"Digital Research set out to produce the most useful product possible for creating visuals," said Marlin Gilbert, product marketing specialist. "What resulted was software that can be used by anyone."

That's good news for people frustrated by the complexity of most graphics software products.

GEM Draw builds on the features found in its predecessor, DR Draw. It produces circles, arcs, polygons, lines, bars and text. Type face quality for text has been markedly improved.

Yet there are several new twists to GEM Draw.

"As with all GEM software from Digital Research, GEM Draw is operated through a system of icons and pull-down menus," said Gilbert, who uses the product to create slides and transparencies for the Marketing Division of Digital Research.

The application provides a software library of the most common types of clip art. If desired, images may be taken from the library and used in drawings.

"Digital Research artists have done the work of designing and collecting drawings," Gilbert explained. "Users can concern themselves with what they want to present rather than creating drawings from scratch. Or if they wish they can use their own design skills to create special drawings for their own use."

Additionally, figures created with GEM Draw may be moved about, placed and replaced. Drawings may be stored, recalled and modified for a specific audience.

Since GEM Draw was created with the GEM extension to operating systems, detailed hard copy may be produced with a variety of popular plotters and printers.

Also, a special feature has been added to GEM Draw — the ability to project a series of pictures on the computer's video screen. Up to 36 different drawings may be included in the screen output pre-

See Draw, page 5

No need to be a designer when using GEM Wordchart

Have you ever tried to design what seemed to be a simple overhead transparency and given up because:

a) You are not a designer.

b) You could have completed the task faster through a professional production service.

c) You hired an outside vendor and then discovered how expensive and time consuming the project became.

Digital Research has an answer. It's called GEM Wordchart.

"GEM Wordchart supplies a standard set of the most commonly used formats for word slides," said Bill Higgs, product manager for GEM applications. "Artists at Digital Research designed the formats by looking through hundreds of slides and deciding what worked best."

All users need to do is enter the text.

Of course, buyers receive the latitude to customize the word slides and charts if needed. Once the chart is completed, it may be reproduced on hard copy by a printer, plotter or projected onto a screen via a special adaptation to a camera. Like GEM Draw, up to 30 different overheads may be placed in such a video production.

"Overhead transparencies can be produced with GEM Wordchart at a fraction of the cost of hiring outside vendors," Higgs explained. "Besides, businesses which produce them in-house retain confidentiality of sensitive materials."

Overhead transparencies are one of the most commonly used methods for communication in the business world, Higgs explained. He cited these statistics from different research studies:

- Word slides account for at least 50 percent of all business overhead transparencies.
- Data graphs account for 10 to 20 percent of business overheads.
- Production of slides alone costs a whopping total of more than $3 billion annually, paid mostly to outside vendors.

"It makes economic sense for businesses to create their own overheads such as word slides," Higgs said. "GEM Wordchart provides a simple method to produce them at pennies per copy using the affordable printers and plotters introduced during the past year."

GEM Programmer's Toolkit™ available

Programmers can create applications for the growing market for graphics-based applications by using the GEM Programmer Support services.

"The GEM Progammer Support service gives software writers a simple and efficient method to create portable applications," said Don Heiskell, graphics engineering manager for Digital Research. "GEM supports graphics standards proposed by the American National Standards Institute, and any software created with GEM may be used on different types of personal computers and operating systems."

Programmers who buy the service receive the GEM Programmer's Toolkit, which supplies all of the tools necessary to create graphics-based applications for Concurrent DOS, PC-DOS and MS-DOS operating systems. The kit provides documentation, software drivers and language bindings.

Additionally, GEM Programmer Support service offers a year of technical support via a toll-free number, a subscription to MicroNotes newsletter and a subscription to CompuServe. The service costs $500 and may be purchased through the Technical Support Center at Digital Research, (408) 646-6018.

Applications writers using the GEM Programmer's Toolkit may develop software that includes graphics metaphors such as icons, pull-down menus, clipped graphics windows and dialogue alert boxes. Language bindings have been provided in C and Pascal to pass calls from these high level languages to GEM.

"Icons and pull-down menus make applications easy to use and understand," said Don Heiskell, graphics engineering manager at Digital Research. "GEM Programmer Support service gives all software writers the opportunity to enter the exciting market for graphics-based applications."

GEM is a graphics extension to operating systems. In its first release, GEM extends MS-DOS and PC-DOS. A multitasking version of GEM is scheduled for release in the second quarter of 1985 along with Concurrent DOS.

REPLY CARD

Please send me information on subscribing to the GEM Programmer Support service.

Name _____ **Title** _____

Company Name _____ **Phone #** _____

Street Address _____

City _____ **State** _____ **Zip** _____

Are you currently developing any graphics applications?

_____ **Yes** _____ **No**

Do you have any graphics applications that are currently being marketed? _____ **Yes** _____ **No**

If yes, please indicate the names of these graphics applications. Please specify the operating system.

_____

_____

Are you an OEM who is interested in volume licensing GEM software for microcomputers other than the IBM PC and board compatible clones?

_____ **Yes** _____ **No**

Slide system incorporates GEM products

Presentation Master™ from Digital Research has given every business the opportunity to make presentation-quality slides from a personal computer.

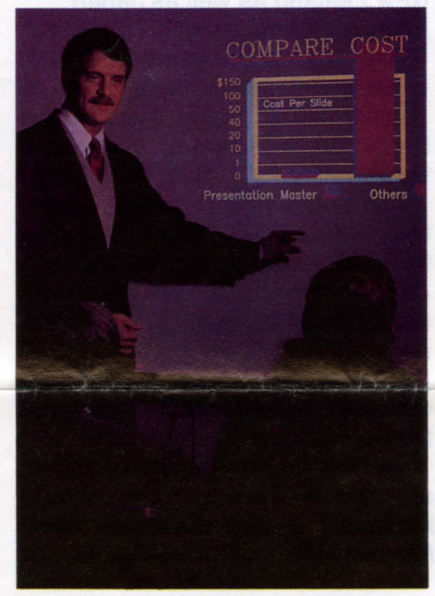
Now the product has been upgraded with new graphics applications introduced by Digital Research. GEM Draw and the latest version of DR Graph™ have become part of Presentation Master.

"That means buyers are provided with a product that has no equals," said John Norcross, product line manager for Presentation Master. "The new versions of software give Presentation Master more power than ever."

For instance, images are created through a new system of visual commands — the icons and pull-down menus offered by GEM software. Novices learn to use the software in a matter of minutes, Norcross said.

Together with GEM software, the Presentation Master gives the capabilities of an in-house film studio. Actual slides are produced from the Polaroid Palette, which is provided in each package. Slides may be produced for less than a dollar each. According to Norcross, that compares to the $75 or more per slide typically charged by outside vendors.

"Slides can be carried literally anywhere because of their size," Norcross said. "An entire display may be contained inside a briefcase."



Presentation Master, available with GEM software, can be used to create color slides for business presentations.

Slides designed with Presentation Master may use any of eight color combinations. Once created and saved in the computer's memory, slides may be updated or redesigned for a particular audience.

What about those who already own Presentation Master?

"Digital Research remembers those who supported and purchased previous versions of its products," Norcross said. "Registered users may upgrade their system with GEM Draw and DR Graph Version 1.5."

Upgrades are available at a reasonable cost by calling Digital Research at (408) 646-6464. For more information about Presentation Master and the Digital Research dealer nearest you, call toll free (800) 382-1800.

GEM Draw

Continued from page 4

sentation and the user can move back and forth in the presentation as desired.

Moreover, GEM Draw was designed as the key product in an "integrated" solution for the development of presentation graphics. Word slides from GEM Wordchart and graphs from DR Graph Release 1.5 may be transferred directly into foils on GEM Draw. Thus, graphs and text charts can be further tailored within GEM Draw to communicate the user's ideas.

Gilbert summed up GEM Draw this way:

"GEM Draw can make an artist out of anyone. It helps businesses produce professional-looking presentations for everyday use."

DR Level II COBOL™ fulfills ANSI standard for compilers

Programmers looking for capabilities similar to those found on mainframe versions of COBOL can now get similar performance from their microcomputers with DR Level II COBOL. It will be shipped in February.

DR Level II COBOL is the newest member of the Digital Research family of languages, and it provides features not found among its competitors. Moreover, no other COBOL in its class has met standards for a high level language.

DR Level II COBOL sells at retail outlets for $700 and is available for PC-DOS. No run-time royalties are charged.

"The Federal Software Testing Center has validated DR Level II COBOL for adherence to the ANSI '74 standards for COBOL compilers," said Lowell Wolf, product marketing manager for languages at Digital Research. "Meeting the standards for high level compilers, DR Level II COBOL executes code faster and provides a greater number of features than its competitors."

The product supports calls to SORT/MERGE facilities. Further, one or more sorts may be used within applications.

"Typically, programmers learned about COBOL by using mainframes, where SORT/MERGE routines are common," Wolf explained. "Unfortunately, most microcomputer versions of COBOL do not provide SORT/MERGE functions and programmers end up writing their own routines," he added.

DR Level II COBOL provides dynamic loading, a method of creating overlays for large applications on machines with small amounts of memory. Program overlay segments are loaded through calls and released through the command 'Cancel.'

"Even without dynamic loading, applications created with the Digital Research version of COBOL may include up to 64K of procedural code and 60K of data," Wolf said. "That is nearly twice as much as competing products."

Parts of Access Manager™ and Display Manager™. Digital Research's productivity tools for programmers, have been built into DR Level II COBOL. Portions of Access Manager provide for fast file access. Portions of Display Manager support sophisticated screen management such as addition of color, reverse video, blinking and other application attributes.

Technically, DR Level II COBOL is a native code compiler that complies with ANSI X3.23 1974 COBOL standard. A single user compiler, it requires at least 256K of RAM. The table size for addressable data may be as large as 8K bytes, a feature similar to the product's mainframe counterparts.

For more information on DR Level II COBOL and the dealer nearest you, call toll free (800) 382-1800.

Testimonial

"Pinnacle chose the DRI family of languages and operating systems back in the 8-bit environment, and when DRI promised us that if we stayed with their systems, we would not be locked out of any market, we believed them. We are glad that we did. We have the advantage of a single set of sources to maintain and a common operating environment for our users. We can offer a full spectrum of systems from a small single user 8-bit computer to a large multiuser 16-bit super micro. Perhaps the most telling advantage for us is that when we switch between systems, even we sometimes can forget what size or type of system we are on."

Pinnacle Retail Systems
P.O. Box 33
Lyme, NH 03768

Overseas demand grows for Digital Research products

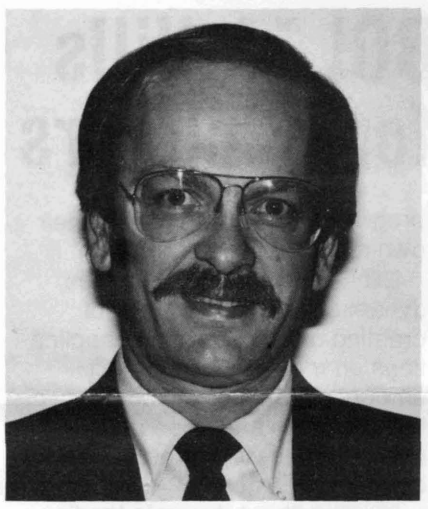
Digital Research continues to expand its marketing and engineering operations in the multinational arena.

In the Far East major Original Equipment Manufacturers are finding that Digital Research's operating systems as well as marketing expertise help them succeed in their domestic and international markets. Meanwhile, European manufacturers are using the Concurrent family of operating systems from Digital Research to differentiate their machines in the marketplace and to work within a number of European languages and character sets.

The Graphics Environment Manager (GEM) — the graphics application interface extension available for Concurrent DOS, MS-DOS and PC-DOS — was introduced to both areas in late fall and will ship this spring.

Major OEMs licensed

"Concurrent 3.1 has been very successful in Japan," says Jim Tillinghast, marketing manager for Digital Research Japan. "It has been licensed by most major OEMs including Mitsubishi, NEC, Nippon Univac and Tokyo Sanyo. Nine OEMs demonstrated it at the October Data Show '84, Japan's largest computer trade show.



Jim Tillinghast directs OEM sales for Digital Research Japan.

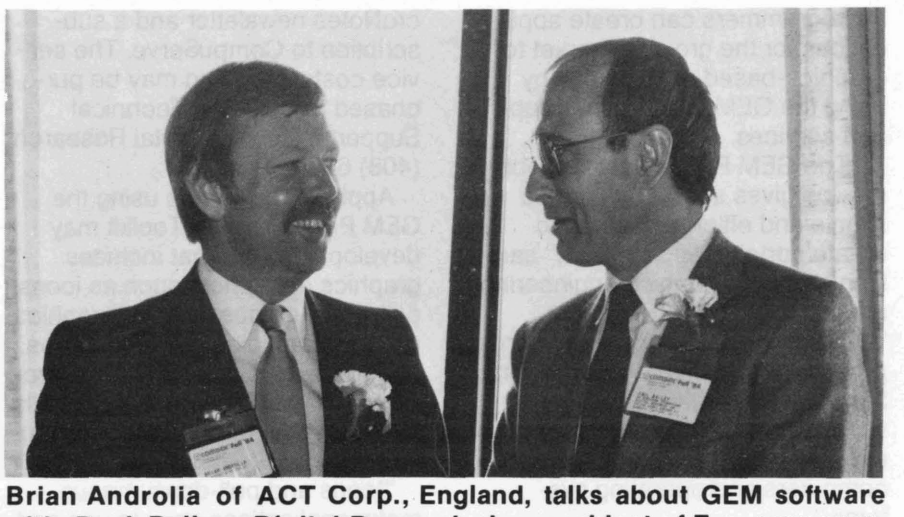
"We also expect a lot of upward migration of our operating systems to the 286 and 68K chips," Tillinghast continued, "following the introduction of our development system kits."

Most Japanese manufacturers must direct their products to two different markets, each with its own requirements. First, there is the domestic Japanese market. Operating systems aimed at this market must include the added functionality of FSX, the kana-to-kanji translation conversion facility. In addition to adding this functionality to operating systems, Digital Research has assisted in the necessary translation of documentation.

Japanese OEMs also receive a boost from Digital Research in their second market, the export or international trade. Here, too, Digital Research can help provide documentation translations as well as the benefits of their own experience and support facilities in the world wide market.

"Japanese manufacturers are totally committed to reaching the international market and, in fact, practically every major Japanese company exports," Tillinghast noted. "This makes Digital Research's support and international marketing experience very important to them."

Recently, Digital Research extended its operating system to another major chip following an agreement between Digital Research Japan and NEC, a company which claims 60 percent of the 16-bit personal computer market in Japan. Under terms of the agreement, currently available system software and programming languages will be configured to run on NEC's Series V microcomputers.



Brian Androlia of ACT Corp., England, talks about GEM software with Paul Bailey, Digital Research vice president of European operations during COMDEX/ Fall'84 in Las Vegas, Nev.

A moderate amount of retail business also is conducted by Digital Research Japan (DRJ) with the supply of software languages to the software vendor community. In addition, DRJ manages distribution functions with a number of Asian distributors covering Korea, Singapore, Hong Kong, Australia and New Zealand as well as Japan.

Market niches found

In Europe, also, operating systems are the key to finding successful market niches, reports Paul Bailey, Digital Research Europe vice president.

"Sales have mushroomed during the current year," Bailey said, "to the point where it is possible to claim that the Concurrent family of operating systems is the industry standard in Europe. Importantly, these systems may be modified to work within a number of European languages and character sets."

GEM software and the first application, GEM Desktop, were introduced in Europe in mid-November. The introduction was accompanied by predictions that OEMs and ISVs could use the new products to reach end user markets four or five times the size of the current market for business micros and software.

The additional functionality of GEM software and the GEM Desktop application added to the Concurrent family of operating systems gives European OEMs a non-proprietary product. It also is available to ISVs for developmental purposes.

The retail market in Europe continues to develop with the opening of several Entre outlets and the expansion of the well established First Computers. Distribution agreements have been signed with Softeam, a UK distributor marketing Presentation Master and StarLink, and with Softsel.

Digital Research Ltd., based in Newbury, England, serves the United Kingdom and Scandanavia. Central Europe is serviced by Digital Research GmbH in Munich, West Germany. Southern European operations are conducted by Digital Research S.A. in Paris.

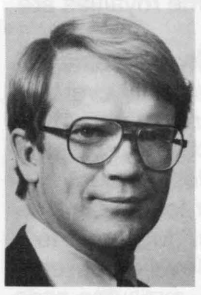
New board members, director and vice president announced

Robert Huff, president of Bell & Howell Co., and **Edward McCracken,** president and CEO of Silicon Graphics, Inc., have been named to the Digital Research Board of Directors.

On the board, McCracken and Huff join Gary Kildall, chairman and founder; John Rowley, president; Dorothy McEwen, founder; Regis McKenna, Regis McKenna, Inc.; Jaqui Morby, TA Associates; and Gerry Davis, ex-officio member, legal counsel and secretary.

Huff, at 42, is the youngest president in the history of Bell & Howell. He joined the company in 1965 as a marketing research analyst. Huff has been president of the company's consumer products group, group executive for various organizations within Bell & Howell, and executive vice president for the microimagery, business equipment and video groups.

A graduate of the University of Hawaii and the Harvard Graduate School of Business, Huff serves on the board of directors for the Better Boys Foundation, Martin Luther King Jr. Boys Club and the Illinois State Chamber of Commerce. He is a trustee to the University of Illinois Foundation and is on the President's Advisory Council of the National College of Education.



McCracken, 40, was named president and chief executive officer of Silicon Graphics, Inc. in May 1984 after serving in several marketing and operations positions at Hewlett Packard.

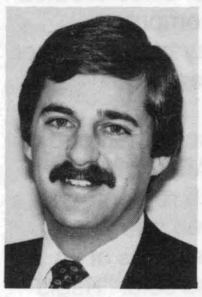
At HP, McCracken was general manager of the General Systems Divison and the Business Computer Group for which he was responsible for the design, manufacturing and marketing of the HP 3000 computer family. His most recent position at HP was as General Manager of the Business Development Group.

McCracken received a bachelor of science degree in electrical engineering from Iowa State University and a master of business and arts degree from Stanford University.

Bruce Cohen, formerly director of North American OEM sales at Digital Research, has been promoted to vice president and director of commercial operations.

Since joining Digital Research in 1982, Cohen has helped align the company with major manufacturers throughout the United States. He worked directly with companies such as Northern Telecom, Intel, Motorola, AT&T and IBM.

Cohen spent 12 years in various sales-related positions for IBM and became marketing manager for the General Systems Division. Later, he managed 150 sales representatives as the northeastern retail director for Datapoint. He earned his bachelor's and master's degrees in mechanical engineering from Cornell University.



Mark Plinneke, formerly the manager of Digital Research's branch office in Los Angeles, has been promoted to director of OEM strategic marketing at corporate headquarters in Monterey, Calif.

The new position involves working with key customers. Moreover, he is helping market the latest technologies introduced by Digital Research.

As branch manager in Los Angeles, Plinneke was responsible for some of Digital Research's largest sales accounts. He worked with customers such as Texas Instruments, Xerox, Tandy, Kaypro and Motorola. He helped establish the Dallas branch office of Digital Research.

Plinneke also has worked as a senior marketing representative for the Commercial Systems Operation of Intel and as a sales representative for Software Design Inc., a company that produces systems software for IBM mainframes. He graduated from University of California at Berkeley with degrees in finance and applied economics.

DIGITAL RESEARCH NEWS

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Digital Research News is a publication of Digital Research Inc., 60 Garden Court, Box DRI, Monterey, CA 93942.
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TWX 910 360 5001.

... Briefs ...

NEC receives software for V Series of chips

Digital Research Japan has agreed to develop versions of CP/M, the Concurrent family of operating systems and its language products for a series of microcomputers created by Nippon Electric Co., one of the world's largest computer manufacturers.

The multi-million dollar contract with the Japanese company is aimed at boosting the number of applications for the NEC V Series of microprocessors. Computers using the NEC chips and CP/M® may run thousands of applications already available and written for the operating system.

"NEC and Digital Research are preserving the existing base of CP/M software while allowing manufacturers to develop new types of personal computers," said Stephen Maysonave, senior vice president of Digital Research and director of its Sales and World Trade Division. "The agreement reaffirms Digital Research's commitment to provide operating systems and software development tools to the microcomputer industry."

Distribution channels grow in Central U.S.

General Micro, a computer retail chain in the Central and Eastern United States, has become a Referral Dealer of Digital Research products. As a Referral Dealer, General Micro will be able to provide technical support as well as sell Digital Research products.

The privately-owned retail chain operates 24 stores in Indiana, Illinois, Florida, Washington, D.C., Wisconsin and Texas. Most recently opened sales offices are in Chicago and Dallas. It also calls on Fortune 1000 clients from its direct sales offices located adjacent to its retail stores.

With headquarters in South Bend, Ind., General Micro offers computer training and seminars to its clients. The company has initiated a support service for all of its customers, whose technical questions are answered through a toll free number.

"Digital Research products provide complete solutions to the needs of businesses," said John Levy, who founded General Micro in 1978. "For instance, Presentation Master gives businesses everything they need to create inexpensive slides from a personal computer."

Besides Presentation Master, General Micro sells Digital Research's StarLink, Concurrent PC DOS and business Graphics software. Also, General Micro carries personal computers from Apple, Compaq, Wang, Hewlett-Packard and IBM.

For information on the General Micro dealer nearest you, call Digital Research toll free, (800) 382-1800.

Digital Research hosts ANSI graphics meeting

Several graphics-related issues were addressed by engineers who attended an American National Standards Institute meeting hosted by Digital Research.

The X3H3 committee, an ANSI group of engineers who help develop graphics standards, released a second revision of their proposals for virtual device metafiles. The proposals are to be reviewed by ANSI members nationwide.

Also, the proposed GKS standard was forwarded to the ANSI X3 committee on standards, where it will be used for final recommendations.

Digital Research coordinated the tri-annual meeting held in October, attended by some 104 engineers.

"Working on graphics standards is an on-going process," said Bill Hertzing, ANSI representative from Digital Research. "Standards help everyone from manufacturers to end users and eventually result in widespread use of portable applications."

Updated Pascal/MT+™ Release available

Good news for programmers interested in a powerful and popular language: The suggested retail price of Pascal/MT+ has been reduced from $600 to $400.

Besides the lower sales tag, buyers receive an updated version. Pascal/MT+ Release 3.3 provided for faster floating-point arithmetic and handling of conformant arrays.

Pascal/MT+ was designed as an integrated set of programs for the development of software applications. A superset of the ISO Pascal standard, the compiler supplies a wide selection of runtime routines. The run-time library supports transcendental operations, data transfer, input/output and string manipulation.

Moreover, ROMable code may be created with Pascal/MT+. For instance, software writers may produce stand-alone applications for industrial use. There are special features to reduce program size and enhance I/O capabilities, options particularly suited to business applications.

Pascal/MT+ is available for Concurrent PC-DOS, CP/M-86, MS-DOS and PC-DOS. Registered users of previous versions of Pascal/MT+ have been notified that they may purchase upgrades at reasonable cost.

For more information about upgrades, call the Warranty Support Department at Digital Research, (408) 646-6464. For product literature and the location of the Digital Research dealer nearest you, call (800) 382-1800.

Some 90,000 visitors to COMDEX/FALL'84 in Las Vegas had an opportunity to view the unveiling of GEM software. They crowded the Digital Research booth for hands-on demonstrations of GEM software, a simplified method of operating and understanding personal computers. GEM software was seen running on several different personal computers including the ACT Apricot, IBM PCjr., AT&T PC, TI Professional and in color on the Tandy 2000.

DR Graph release transfers file data

An upgraded version of DR Graph, business software for creating charts and graphs, has been released by Digital Research.

DR Graph Release 1.5 provides several new features. It creates graphs that use thick lines, support either portrait or landscape layout, and improve the ability of transferring data from spreadsheets such as SuperCalc, Visicalc and others.

Files of graphs from the new version may be transferred directly to files of GEM Draw. That means graphs can be combined with pictures and words used in foil presentations.

All of the features found in previous versions of DR Graph continue to be supported by the new version. Bar charts, pie charts, scatter plots and bar/line graphs may be created with DR Graph. Axes pie sections are labeled automatically.

Registered users may inquire about DR Graph Release 1.5 by calling the Warranty Support Department at Digital Research, (408) 646-6464.

Hardware, software specialists focus on Fortune 1000 markets

As value added resellers (VARs) emerge as a significant force in the microcomputer industry, Digital Research is working with this channel to provide software for specific, large volume end user markets.

"The VAR channel along with our distributors and national accounts mean we can meet the needs of these expanding markets," said Craig Conway, director of Retail Operations for Digital Research.

VARs are well suited to handle the technically sophisticated products Digital Research produces, Conway noted. Also, as orders in large numbers begin to come in from the government, education and Fortune 1000 markets, specialized distribution channels — as provided by VARs — are required.

During the last nine months Digital Research has been working with several VARs. These include Software Control International and Technologies Services, Inc. The company is actively seeking out other leading VARs throughout the United States to better serve the large volume end user markets.

"We are very committed to expanding Digital Research's third party distribution channels to include the best value added resellers in the country and with the help of our distributors and national accounts expect to maintain our leadership position in the industry," Conway said.

Note From the Editor

Digital Research News is mailed to users who have registered products with us in the prior 12 months. If you have not registered a product during the past 12 months, you can continue to receive Digital Research News by returning this coupon to:

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Attention: Customer Registration
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Monterey, CA 93942

Yes, I wish to continue to receive Digital Research News. Please send to me at the address below.

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"Media Quotes"

"(Digital Research) calls GEM a 'transparent user interface operating system.' It runs sandwiched between the basic operating system of the computer (in its present version an IBM PC or compatible), and the applications software, providing a user interface styled after the Xerox Palo Alto Research Center (PARC) technology made famous by Apple's Lisa and Macintosh computers ... Instead of issuing computer commands to the 'A>' prompt, the user manipulates GEM's pull-down menus and windows with a mouse and identifies files with those icons."

InfoWorld, Dec. 24, 1984

"The advantage of the Digital Research system (GEM software) and the reason why it oculd prove a potent opponent to Macintosh is its ability to run under the two most popular operating systems for business microcomputers, MS-DOS and Concurrent DOS. This means the massive library of software written for these operating systems can now use the GEM graphics interface.

New Technology, Nov. 19, 1984

"GEM combines what its developer, Digital Research Inc., claims is the best of both worlds — IBM PC compatibility and the user friendliness of Macintosh-like user interface. The GEM user interface runs 'on top' of the PC-DOS — or a PC-DOS compatible — operating system."

Electronic Engineering Times, Nov. 5, 1984

"Separately, look for Atari to use Digital Research Inc.'s new Graphics Environment Manager products (formerly code-named Crystal) on its coming family of computers. GEM features icons and pull-down menus for use with a pointing device called a mouse. Popularized on the Xerox Star and Apple Macintosh computers, these features greatly simplify the task of learning to use a computer."

San Francisco Chronicle, Nov. 8, 1984

"The Graphics Environment Manager, or GEM, wraps around MS-or PC-DOS and permits users to organize files under icons that look like file folders, move a file from one folder or diskette to another by 'dragging' it with a screen pointer called a mouse, and other shortcuts that sidestep having to type in confusing commands."

Atlanta Constitution, Nov. 18, 1984

"At the heart of the Graphics Environment Manager (GEM) product line is software that substitutes icons and pop-down menus for the computerese commands usually needed to make a system's disk operating system (DOS) copy files, make a directory and start or stop a program ... Instead of turning on a computer and being greeted by the 'A' symbol, the user of a computer equipped with (GEM) Desktop would instead see icons representing disks and other objects that can be manipulated with a mouse pointing device."

San Francisco Examiner, Nov. 9, 1984

"Digital Research has begun shipping Concurrent PC DOS, its multitasking, windowing PC-DOS shell for the IBM PC. It has even thrown a surprise into the package: It's multiuser, too ... Two remote users can be supported through the PC's serial ports."

PC Week, Oct. 23, 1984

"Digital Research Inc.'s Concurrent PC DOS is called an operating system, although that seems like something of a misnomer. It does so much more than the average computer user would expect from an operating system that it should be given a new title — something like 'Programmable Multitasking Application Software/House System,' perhaps."

Personal Computing, November 1984

DIGITAL RESEARCH NEWS

Digital Research News is published by Digital Research Inc. for customers everywhere.

Address all correspondence to
Editor, Digital Research News
60 Garden Court
Box DRI
Monterey, CA 93942
(408) 649-3896

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