

DIGITAL RESEARCH NEWS

Volume 4, No. 4

For Digital Research Users Everywhere

October 1984

Move to new headquarters complete



John Rowley, Digital Research president (left), and Gary Kildall, founder and chief executive officer, have presided over the company's growth into a multinational corporation of 500 employees.

Campus setting provides centralization, 116,000 square feet and room for growth

Digital Research has moved into a multimillion dollar headquarters complex located in a campus-like setting in Monterey, Calif. that centralizes the company's operations and provides room for future growth.

"One of the company's goals has been to consolidate the activities into a single campus," said John Rowley, president of Digital Research. "The nature of the software business requires excellent conditions for communications, and we expect the new facilities to increase the flow of information between employees."

Situated in the pine-wooded foothills of the Monterey Peninsula, the complex includes three redwood structures that provide approximately 116,000 square feet of office space, enough for up to 600 employees. The complex houses the divisions of Finance & Administration, Marketing and Engineering.

A sophisticated computer facility

was developed especially for Digital Research's new home. The center provides some of the most advanced computer equipment available, including several DEC VAX minicomputers used for software development.

The VAX system forms the heart of a multiuser network for the entire company. Employees may transmit electronic mail among themselves and eventually to foreign offices. The network contains an auxiliary power supply to prevent loss of information caused during brief disruptions of electrical service.

A second communications facility located in an annex at the campus handles all Panafax and Telex communications. Documents may be sent electronically to or from Digital Research clients around the world.

For the past three years Digital Research headquarters was located in a two-story building in

See Headquarters, page 6

StarLink™-Displayphone package announced

Digital Research Inc. and Northern Telecom Inc. of Nashville, Tenn., have announced an agreement under which Northern Telecom will distribute its Displayphones with Digital Research's StarLink™ through Northern Telecom's distribution offices nationwide. The StarLink-Displayphone package will let Displayphone users connect to IBM PCs and PC-compatible machines and share files, software and data simultaneously.

StarLink is a combination of hardware and software that expands a single IBM PC into a multiuser system. With StarLink, up to four Displayphone terminals can be linked to IBM-PC, IBM PC-XT or board level PC-compatible systems, with each Displayphone user having simultaneous access to all PC-DOS and CP/M® applications. "The development of StarLink

has greatly enhanced the flexibility of Displayphone by giving users access to information for the leading personal computer system," said Sandy Moore, vice president, Terminals, for Northern Telecom. "StarLink reflects Northern Telecom's commitment to OPEN World — our goal to permit all major office communications functions to operate on a single integrated system."

John Rowley, president of Digital Research, said, "The agreement with Northern Telecom represents Digital Research's objective to develop a full solution to office communications through the integration of microcomputer and telecommunications technologies. Companies can now have the benefits of a Displayphone and IBM PC applications from the same unit."

Rowley stressed that the

StarLink-Displayphone system "offers a low-cost alternative to the purchase of multiple computers. Businesses in which several staff members try to use an owner's or

The StarLink-Displayphone package will let Displayphone users connect to IBM PCs and PC-compatible machines and share files, software and data simultaneously.

manager's computer will find the StarLink-Displayphone package an effective way to increase computer access."

Moore added, "This package

offers low-cost personal computing to Displayphone users. This added capability, combined with the Displayphone terminal's integrated voice/data features, make it the ideal information device. We believe this new product package offers us an excellent opportunity to sell Displayphone into the large and growing PC market."

StarLink-Displayphone Package

Displayphone is a combined voice and data terminal with a retractable, full-size keyboard. Its features include a 90-number telephone directory, hands-free speakerphone, full automatic logon, reminder service for appointments and a printer interface for hard copy.

Several Displayphone users can gain access to one application program at the same time through

See Displayphone, page 6

Visit Digital Research booth at COMDEX/Fall'84

New products from Digital Research may be reviewed at COMDEX/Fall'84, a computer dealers' exposition in Las Vegas, Nov. 14 through 18.

Digital Research occupies Booth 6114 in the Rotunda of the Las Vegas Convention Center.

COMDEX/Fall'84 is regarded as one of the largest trade shows for personal computers and related products. In 1983, the computer dealers' exhibition was attended by more than 1,000 exhibitors and at least 60,000 retail dealers, distributors and end users. The annual convention typically is used for the

introduction of new products.

Among the products being demonstrated by Digital Research at COMDEX/Fall'84 are:

- Concurrent™ PC-DOS, the multi-

tasking operating system for the IBM PC, AT&T PC and compatible computers. The package includes DRTalk™, communications software based on popular PC-Talk.

- StarLink, an add-on board which spreads the power of one IBM PC/XT to five users at a fraction of the cost of new microcomputer systems. It runs under Concurrent PC-DOS operating system.

- Presentation Master™, an inexpensive method of producing presentation quality slides from an IBM PC or AT&T PC.

Visit the Digital Research booth to see demonstrations of these and other new products.

Related stories in this issue provide information on Concurrent PC-DOS, StarLink and Presentation Master.

See us in the rotunda booth 6114

COMDEX™/Fall '84

November 14-18, 1984
Las Vegas Convention Center
Las Vegas, Nevada

Franchise chairman looks into micro future

Ask Alan Hald to name the most important feature of micro-computers for today and the future, and he will say the ability to communicate.

As chairman of MicroAge Computer Stores, Inc., one of the fastest growing computer franchises in the world, Hald is considered an industry guru. He has prospered by keeping one ear open to users and the other to hardware manufacturers and software developers such as Digital Research. Hald, who began MicroAge in 1976 with partner Jeff McKeever, has prepared his stores for the next generation of personal computers.

"Basic workstations as we know them are becoming obsolete," Hald said. "They are evolving into a new generation of computers that will be broadly accepted in 1985."

Here are some of Hald's latest glimpses into the future:

- Multitasking and multiuser microcomputers will dominate the market. Single tasking systems will continue to be popular in the home, but the tide has shifted toward high performance machines for offices.
- New microprocessors such as the Intel 80286 and Motorola MC60020 will increase the number of applications available to businesses, especially applications for communications. Both types of chips multiply the horsepower of the current generation of desktop machines.
- The phone will be considered a computer peripheral. Electronic mail, computer conferencing and transferring of files to and from remote computer sites will be commonplace. Hald anticipated a growing demand for computer terminal and phone combinations, such as the Displayphone produced by Northern Telecom Inc. or the ES.1 from Zaisan of Houston, Texas.

To practice what he preaches, Hald and MicroAge managers use electronic mail delivered through THE SOURCESM, a data base service. Messages and updates over the phone lines go from headquarters in Tempe, Ariz., to any of the approximately 150 franchise stores.

What about businesses who already have invested in current microcomputer technology? No need to worry, Hald said.

The gap between single user systems and advance multiuser

systems is filled by Digital Research products such as Concurrent PC-DOS and StarLink. (See related articles in this issue.) Both products are distributed by MicroAge and allow computers to be upgraded gradually, as businesses grow. The products provide capabilities similar to the next generation of personal computers.

For instance, Concurrent PC-DOS turns an IBM PC/XT, AT&T PC or compatible computer into a communications network. Someone in the field may use a portable computer to transfer files over the phone to a computer in the office. The transfer proceeds without any disruption of other tasks performed by the desktop system.

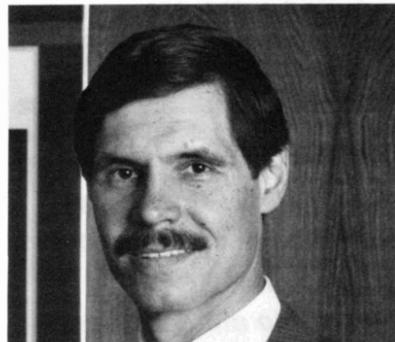
StarLink, which includes Concurrent PC-DOS, creates what Hald called a "super workstation" — a multitasking desktop computer that supports up to five users. It alleviates the work bottlenecks that can occur when employees have to wait their turn to use a single microcomputer.

Although with StarLink each user can run a different application, all users share hardware and software. The cost of computing per user is decreased. Also, one cluster of StarLink users may communicate to another cluster through a modem.

StarLink acts as a bridge between single user systems and sophisticated machines on the horizon, Hald said. Businesses benefit through an inexpensive method of increasing productivity. Besides, StarLink helps users become accustomed to the power and utility for new systems expected at the beginning of 1985.

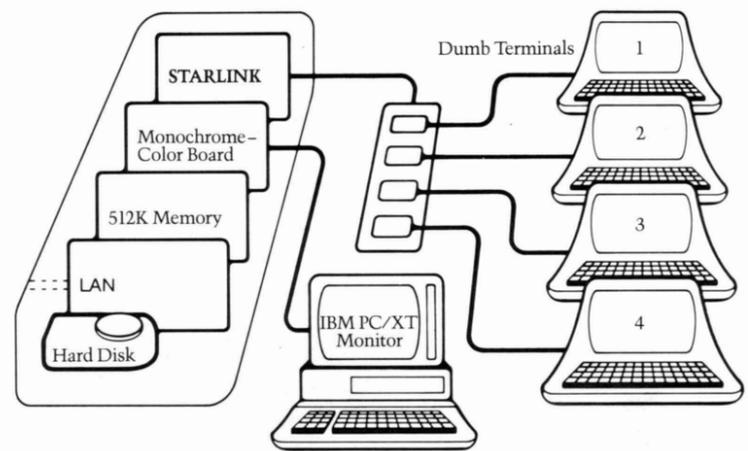
Each of the 150 or so MicroAge stores provides technical specialists knowledgeable in multiuser

See Future, page 6



MicroAge Chairman Alan Hald is preparing his stores for the next generation of microcomputers.

HOW STARLINK WORKS



Four dumb terminals may be linked to a personal computer outfitted with StarLink. Different applications may be run at each station of the multiuser system.

StarLink is low-cost alternative to buying additional computers

StarLink from Digital Research can turn your IBM PC, IBM XT or compatible computer into a multi-user system at a fraction of the cost of buying additional computers.

The StarLink package includes the Concurrent PC-DOS operating system and a processor board with an 8088 chip to increase performance. Priced at \$1695, StarLink also includes the connectors and instructions necessary to install four inexpensive terminals into the personal computer. Other PCs or modems can be connected in place of the terminals.

Concurrent PC-DOS represents the latest version of the Concurrent line of operating systems from Digital Research, and it allows users to run up to four tasks at once on the host PC's main console. (Refer to Concurrent PC-DOS article on page 5 of this issue.)

Further, Concurrent PC-DOS supports multiusers. Up to two remote users can be supported through the comm ports using standard asynchronous plug-in cards. With the StarLink up to five people may run different programs at greater speed than possible with

just the comm ports, while still being able to use the comm ports for modems, mice and printers.

"StarLink is a low-cost alternative to buying additional computers," said Mike Loftus, product manager. "Users can share software and hardware that otherwise must be purchased for each new computer system."

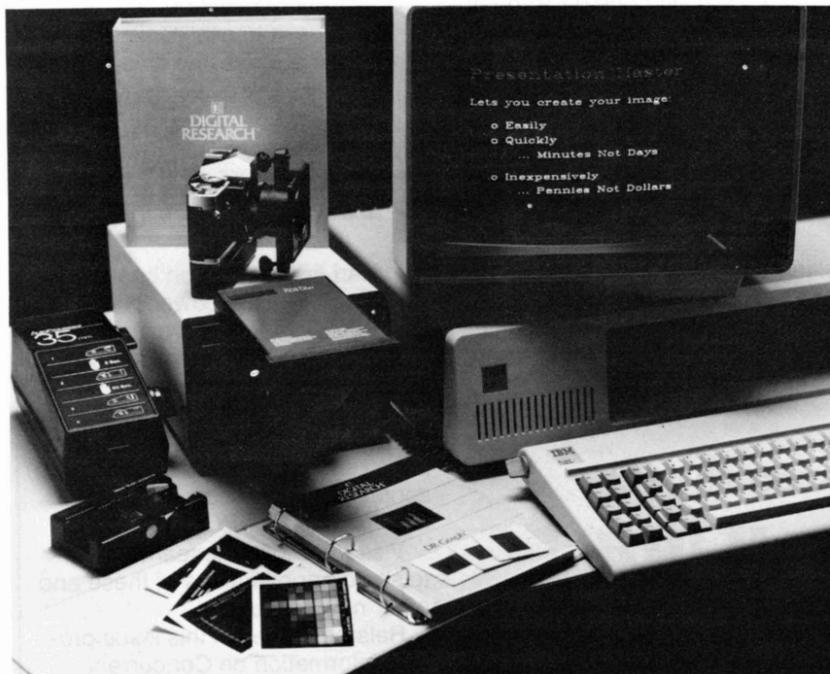
Buyers can continue to use most of the popular PC-DOS applications they already own, including Word Star, dBASE II, SuperCalc II and the MBA accounting system. The software needs no modification to run under StarLink.

Some of the other features of StarLink are:

- GSXTM, an extension from Digital Research which supports graphics programs including DR DrawTM and DR GraphTM
- 64K of RAM buffer memory to help manage the I/O between terminals and the personal computer
- Standard CP/M and PC-DOS utilities for listing directories, and transferring and editing files

For product information and the dealer nearest you, call toll free (800) 227-1617 ext. 400 or in California (800) 772-3545 ext. 400.

Entre joins other franchises offering Presentation Master



Presentation Master includes all of the hardware and software necessary to produce inexpensive, high quality slides with a personal computer. Color slides may be produced for about \$1 each.

Entre Computer Centers has joined several other nationwide franchises offering Presentation Master, the Digital Research product that lets users create quality business slides on a personal computer.

About 200 Entre Computer Centers are located in major metropolitan areas throughout the United States. Buyers may order Presentation Master from any of these outlets.

Presentation Master turns your IBM PC, AT&T PC or compatible computer into a desktop film studio. It is considered a "complete solution" to the production of business slides: All of the hardware and software necessary is provided.

"Presentation Master is the first inexpensive method to incorporate high quality visuals into everyday presentations," said Mark Duchesne, director of marketing at Digital Research.

"The cost of using Presentation

Master is roughly \$1 a slide. Vendors may charge as much as \$80 or more for each slide."

The package combines DR Draw and DR Graph software from Digital Research and the Palette from Polaroid. The Palette plugs into a personal computer and electronically enhances the images produced.

DR Draw lets users produce word charts or flow carts, or create drawings from scratch. The software is menu-driven — lists of options are provided.

DR Graph produces bar charts, pie charts and multiple graphics useful in business presentations. It plots points, curves and bars from data entered directly or transferred from an electronic spreadsheet such as SuperCalc, MultiPlan or VisiCalc.

All slides produced on Presentation Master may be stored and updated as frequently as needed. Buyers are provided an easy-to-

See Presentation Master, page 7

Motorola and Digital Research:

Goal is an upgrade to more powerful pc's

Acceptance of a new product requires more than technical superiority. It involves planning for success as early as the design stage.

Case in point: Motorola and Digital Research have laid the groundwork for an explosion of applications based on the MC68000 family of microprocessors.

"We are working together to provide a homogeneous path from one chip to the next," explained Flo Harteloo, manager of software programs for Motorola Microsystems. "The ultimate goal is acceptance of new technology and an economical means to upgrade to more powerful personal computers."

Cooperation between the two companies will help avoid the traditional lag between introduction of new chips and availability of applications.

A year ago, Digital Research started work on a version of Concurrent DOS for the Motorola VME/10 OEM Microcomputer System, an engineering workstation. The version of Concurrent DOS for the VME/10 supports multiusers, graphics, CP/M-68K™ applications, CP/M and PC-DOS disk medias, hierarchical files, networking and multitasking.

Shortly after the announcements, application writers were offered an opportunity to prepare for the arrival of Concurrent DOS with a version of CP/M-68K for the VME/10. Motorola is distributing CP/M-68K

along with related languages, including CBASIC® Compiler, Digital Research C™ and Pascal/MT+™.

CP/M-68K acts as a catalyst to increase the number of applications available for the VME/10. According to Bill Tyler, Digital Research project manager for Concurrent DOS, software produced with CP/M-68K may be transferred directly to Concurrent DOS. Also, applications from other personal computers using CP/M may be transferred to CP/M-68K.

"Hundreds of applications written for CP/M or PC-DOS on the IBM-PC may be transferred to the VME/10 by simply recompiling," Tyler said. "The process takes a matter of hours or days compared to months required for developing applications from scratch for each new microcomputer in the M68000 family of chips."

Last year Motorola released the MC68010 microprocessor and incorporated it into the VME/10 OEM microcomputer system. The MC68010 offers the ability to use disk memory to augment RAM memory. This allows much larger applications to run efficiently.

"Think of the microprocessor as a chalkboard and the hard disk of the microcomputer as a filing cabinet," Harteloo said. "Software is stored permanently in the cabinet. Up to four parts of any application in the file cabinet may appear temporarily on the chalkboard. Each part is erased from the



A version of Concurrent DOS is under development for Motorola's MC68010 chip, found in the emerging generation of microcomputers. The project is managed by Bill Tyler, center, who supervises a team of seven engineers including Mark Alexander, left, and Bruce Halloway.

chalkboard and replaced as needed. The situation is analogous to having four separate chalkboards."

Support for virtual memory also is provided in the MC68020 microprocessor, a 32-bit chip demonstrated in July at the National Computer Conference, running on Motorola's Benchmark 20 system package. The MC68020 provides 400 percent more power than the MC68000 chip, processes up to 10 times the number of instructions per second and provides 256 times the memory space.

Digital Research operating systems such as CP/M-68K and Concurrent DOS play an important role in Motorola's strategy to encourage designers of personal computers and workstations to use 32-bit chips.

"The next generation of personal computers already is beginning to emerge," Harteloo said. "Motorola is preparing businesses for the arrival of 32-bit microcomputers by building a library of CP/M-68K and Concurrent DOS applications for the entire M68000 family of chips."

Portable standards stimulate graphics market

Scores of hardware and software applications manufacturers in the United States, Japan and Europe are working closely with Digital Research to develop standards for graphics software.

Their objective is to provide transportability of applications among different types of microcomputers, a problem that has hampered the potential growth and popularity of graphics software in the past.

"Digital Research has provided graphics systems software, based on the emerging ANSI UDI standards, that have already increased the number of applications available," said Rob LaTulipe, Digital Research product manager for graphics. "The availability of a portable graphics standard breathes new life into the graphics market. It means a steady stream of new applications."

GSX, a graphics extension to operating systems, has been brought to market by some of the

major microcomputer manufacturers here and abroad. The UDI is licensed by some 75 manufacturers. GSX provides portability of applications across those systems the same way CP/M does — by providing a common ground for the development of software.

Software based on GSX may be used on a variety of hardware supported by the extension. Digital Research engineers continually add support for the latest peripheral hardware. The current version 1.2 for MS-DOS and 16-bit CP/M also includes color printers, and the Polaroid Palette (a component of Digital Research's Presentation Master). With GSX, users are provided the freedom to mix and match different types of hardware, LaTulipe said.

"Also, applications writers can concentrate on writing innovative software rather than implementing device drivers for each of the new microcomputers and peripherals," LaTulipe explained.

Joseph Ng, vice president of OEM sales at Chang Labs, echoed LaTulipe's remarks.

"Rather than reinventing the wheel by developing device drivers for all new types of hardware such as plotters, printers and graphics cards — which is a laborious and time-consuming job — we adopted GSX," Ng said. "It makes a lot of sense economically."

With GSX, Ng said Chang Labs was able to concentrate its development efforts into GraphPlan, business software that produces graphs and charts. The company created different versions of GraphPlan for France, Germany, Denmark and Holland. Other versions were produced for microcomputers from Fujitsu, NEC, NCR and DEC — all during a single month.

The library of graphics hardware supported by GSX prompted Corona Data System of Thousand Oaks, Calif., to adopt the graphics extension. Corona Data Systems produces two microcomputers for graphics applications.

The Corona 325 line and PB400 are IBM PC compatible systems. Each provides screens of high resolution suitable for graphics presentations. Separately, Corona Data Systems provides DR Draw, the Digital Research package for drawings and charts.

Jerry O'Connor, graphics product manager for Corona Data Systems, explained that GSX opens the door to other graphics products. In other words, GraphPlan for the IBM PC may be used for the Corona computers and future software produced with GSX can be purchased by Corona's clients.

The Southern California company joins a long list of other leaders in the microcomputer market

who have licensed GSX. Among them: Texas Instruments, Applied Computer Technologies (England), NCR, NEC Information Systems, DEC, Fujitsu, Tandy, Sony Corp. and AT&T Information Systems.

"The popularity of graphics is increasing, and the competition is becoming more intense," LaTulipe said. "GSX lifts the burden of creating systems software and lets programmers concentrate on building their applications. As graphics applications become even more complex, incorporating features such as icons, GSX plays an important role in helping programmers simplify their work."



GSX, the graphics extension to operating systems, supports the latest types of hardware peripherals. Software based on GSX may be used with all of the most popular printers, plotters and terminals.

DIGITAL RESEARCH NEWS

Digital Research News is a publication of Digital Research Inc., 60 Garden Court, Box DRI, Monterey, CA 93942. (408) 649-3896. TWX 910 360 5001.

Founder: **Gary Kildall**
President: **John Rowley**
Corporate Communications Director: **Judy Mervis**
Managing Editor: **Nan Borreson**
Writer: **Jay Ailing**
Production: **Terril Neely**
Photographer: **Tom O'Neal**

Digital Research, CP/M, CBASIC, CP/M-86 and the Digital Research logo are registered trademarks of Digital Research Inc. Concurrent PC-DOS, DR/NET, Presentation Master, Star-Link, DR FORTRAN-77, PL/I, GSX, DR Draw, DR Graph, CP/M-68K, Digital Research C, Pascal/MT+, Dr. Logo, Personal CP/M and PL/I are trademarks of Digital Research.

Some of the product names contained in this issue may be trademarks or registered trademarks of the companies indicated. NWS-101-004

... Briefs ...

DR FORTRAN-77™ meets ANSI requirements

Digital Research FORTRAN-77™ brings the attributes of its main-frame counterpart to the micro-computer world.

The product is the only micro-computer FORTRAN that meets the requirements suggested by the American National Standards Institute. The compiler has been validated by Federal Software Testing Center for its adherence to the standards.

In a series of benchmark tests, Digital Research-FORTRAN-77 out-performed Microsoft FORTRAN and Supersoft FORTRAN in speed of processing. Specifically, it provided faster execution of the traditional Whetstone and trigonometric tests. (Results are available from Digital Research, Languages Marketing, Box DRI, Monterey, CA 93942.)

The Digital Research version of FORTRAN supports large and small memory models, the 8087 math coprocessor, overlays and 64K element arrays.

GSX-based packages run on all IBM PC lines

Digital Research has confirmed that existing versions of DR Draw and DR Graph may be used for the IBM PCjr., PC Portable and PC/AT.

"DR Draw and DR Graph and any other GSX-based applications run on all of the PC line of computers without modification," said Rob LaTulipe, graphics product line manager. "This means dealers can get more penetration out of their software since it runs on several different machines."

DR Draw may be used to create word charts, organizational charts and drawings. DR Graph produces an assortment of business graphics such as bar charts, pie charts and multiple graphs.

The PCjr. portable and AT can take advantage of the IBM Color Adaptor drives in GSX, showing high resolution monochrome or low resolution 4-color graphics just like on the IBM PC. Now that the PCjr supports more memory, it, too, can run DR Draw and DR Graph.

For product literature or the dealer nearest you, call toll free (800) 227-1617 ext. 400 or (800) 772-3545 ext. 400 in California.



DR Graph

Inacomp to distribute Digital Research line

Inacomp Computer Centers, Inc., a national computer retail chain, has agreed to distribute Digital Research products including Presentation Master and StarLink.

The Troy, Mich.-based firm also is distributing Digital Research languages, graphics and operating systems. It offers Concurrent PC-DOS, the multitasking operating system that bridges the worlds of CP/M-86® and PC-DOS applications.

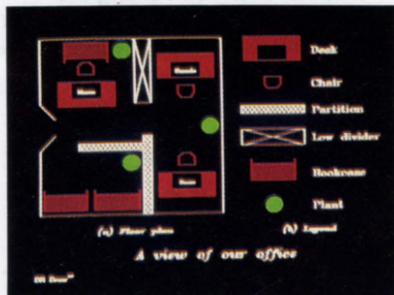
Inacomp provides support for all



Digital Research's new headquarters in Monterey provide enough room for at least 600 employees and area for future growth of the company. For the past three years Digital Research operated out of 10 separate facilities throughout the Monterey Peninsula. The three building complex in Monterey centralizes Digital Research operations for the first time since the company was founded in 1976.

products it sells. The level of support is indicated by the number of medallions attached to each package. Buyers are guaranteed that level of support.

The chain was founded in 1976 by Rick Inatome and has expanded throughout Georgia, Michigan, Florida and Southern California. The California stores joined the chain following a July 1983 merger of Inacomp and Computer City stores.



DR Draw

Products offered in electronic catalog

A Northern California company that produces an electronic catalog used in sales to Fortune 1000 companies recently became the newest value-added reseller of Digital Research products.

ONE POINT (formerly ITM), Walnut Creek, Calif., sells Concurrent PC-DOS, StarLink, DR Graph, Dr. Logo™ and Presentation Master. The products may be purchased from an on line catalog produced and maintained by ONE POINT.

The ONE POINT Electronic Catalog includes descriptions and reviews of software and hardware products. ONE POINT is located at 2835 Mitchell Drive, Walnut Creek, CA 94598. (415) 947-0850 or toll free (800) 334-3404.

Dr. Logo provided with Apricot micros

European manufacturers, including highly regarded Applied Computer Technology, Inc., are making a standard out of Dr. Logo, a move that increases the portability of applications using the popular language.

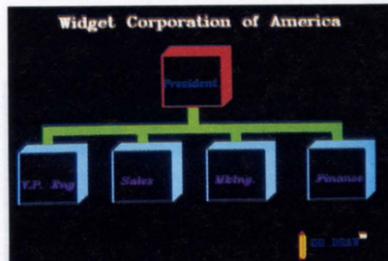
The manufacturers are providing Dr. Logo with each microcomputer sold. The acceptance of Dr. Logo throughout Europe popularizes it for consumer use, bringing the total number sold to about 400,000.

ACT includes Dr. Logo with its Apricot microcomputer. Dr. Logo joins CP/M-86 as one of two software products bundled with the Apricot.

"CP/M-86 permits a wide variety of off-the-shelf application programs to be run," said Ian Wallace, director of ACT's product support group. "Dr. Logo provides an excellent growth path into consumer programming due to the turtle graphics, which is a very easy method of producing graphic images that are particularly appealing for home or educational use."

Tatung computer company unveiled plans to bundle Dr. Logo with the Einstein color micro-computer and market for the education field. The same is true for Armstrad computer, which provides Dr. Logo for the CPC 464 microcomputer system.

Dr. Logo was written as an easy to use language capable of sophisticated programming. Commands are written in the native language. Dr. Logo supports color graphics.



DR Draw

Personal CP/M™ is reviewed in Japan

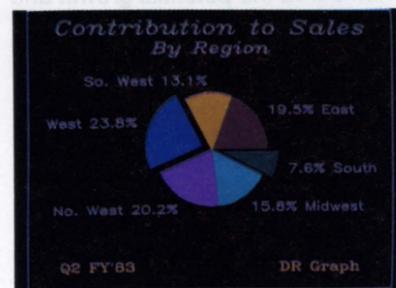
Eight of the 12 Japanese manufacturers adhering to the MSX hardware configuration are reviewing Personal CP/M™ from Digital Research.

Of the eight, Sony is exhibiting a version of Personal CP/M on its MSX microcomputer. The Sony machine is being shown at computer-related expositions in

Europe, including Germany, Amsterdam, Italy and Spain.

MSX, a type of hardware configuration suited to computer games, is popular in Japan as well as parts of Europe. MSX machines use no operating system and as a result cannot support the addition of peripheral devices such as disk drives. Jim Tillinghast, Digital Research marketing director in Japan, said Japanese manufacturers became interested in Personal CP/M for its ability to control peripheral devices.

"Personal CP/M also provides an easy to use method of operating a computer, perfect for the kinds of consumers who use MSX hardware," Tillinghast explained.



DR Graph

CP/M-86® in Japan has Kanji support

Support for Kanji characters is provided in the latest release of CP/M-86 for Japan. Meanwhile, development is continuing for Kanji versions of Concurrent CP/M, CP/M Release 2.2 and CP/M-68K.

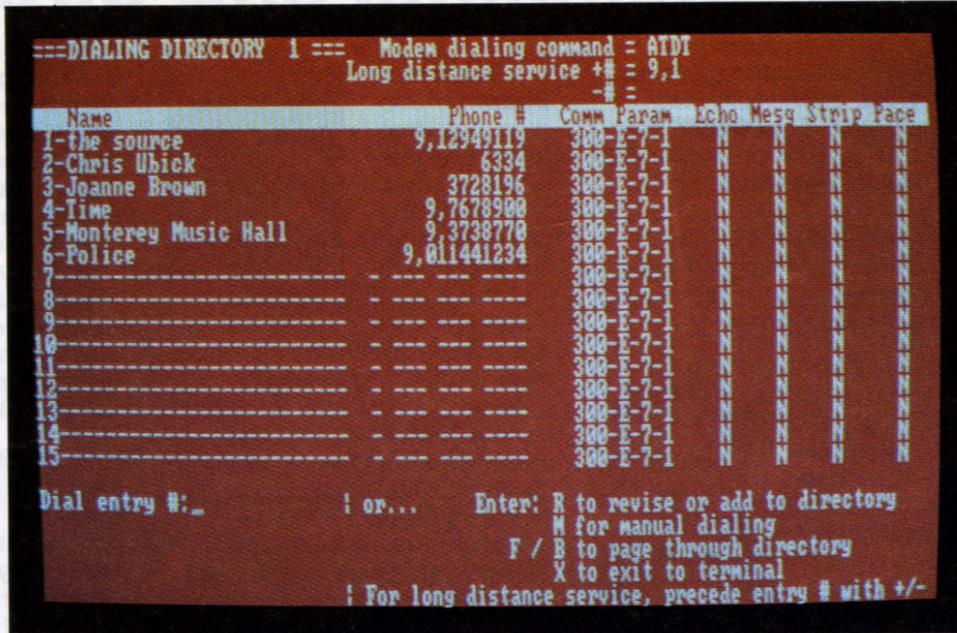
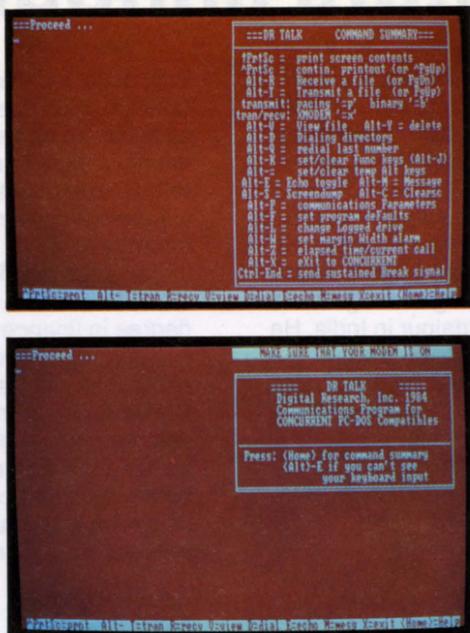
"Digital Research's support of Kanji allows users to work with computers in their native language yet receive all of the benefits provided in the English language versions," said Dave Govett, Digital Research's technical support specialist for Japan.

The task of turning English words into the 8,000 phonetic characters recognized in Japan required several months of translation work. User guides for all of the operating systems were translated into Japanese.

Digital Research began its first Kanji project almost two years ago

See Briefs, page 5

DR Talk lets users, even non-professionals, get on line easily to the many information services available and lets them transmit files between computers at the touch of a keystroke. Commands are intuitive and chances are users will not need to refer to the documentation provided.



Important Concurrent PC-DOS feature:

DR Talk promotes business communication

The use of personal computers in everyday business has fostered a dynamic growth in the volume and variety of information at your fingertips. Unfortunately, your desktop computer probably works as an independent system isolated from the rest of the world. No one, including you, can send or receive information easily.

One way to address communications needs in the office is through Concurrent PC-DOS, a new operating system from Digital Research. Concurrent PC-DOS was designed for the IBM PC, the AT&T PC and compatible computers to help businesses communicate efficiently. With Concurrent PC-DOS and an inexpensive phone modem, buyers can call on all types of information services. Moreover, they may share files with others in the office or field.

"Concurrent PC-DOS gives people who have purchased personal computers the chance to increase the usefulness of their system without investing in expensive hardware," said Darrell Miller, marketing manager for operating systems. "Communications has emerged as one of three most important uses for businesses' microcomputers, next to accounting and word processing," Miller added.

A communications program is included with every package of Concurrent PC-DOS. Called DR Talk, it lets users transmit files between computers at the touch of a keystroke. DR Talk is a spin-off of the popular PC-Talk software, except that it was modified to run

under Concurrent PC-DOS.

DR Talk eliminates the need to purchase separately pieces of software for communications — a potential savings of more than \$150. According to Miller, that is good news to buyers bewildered by the variety of communications software available.

Shopping for such software can be tricky since the communica-

"Simply, Concurrent PC-DOS allows businesses to communicate without tying up their resources."

tions packages on the market are designed separately rather than as an integral part of an operating system. Buyers may end up with software not suited to work in an office, Miller said.

"True communications require the kind of multitasking found in Concurrent PC-DOS. Otherwise, important jobs may be delayed while you wait for someone to send information over the phone," Miller explained. "Other types of software allow you to communicate, but you must dedicate the machine to that one task."

Concurrent PC-DOS runs up to four CP/M-86 and PC-DOS applications. Each of the four may be displayed on the screen in its own window. Or one application may use the entire screen while the other three continue to run unseen

in a background mode.

Miller has developed an impressive demonstration of multitasking under Concurrent PC-DOS. He begins by setting up a long slender window at the top of his computer screen for communications with THE SOURCE, a data base service.

In a second window, Miller locates the phone number to THE SOURCE by using an electronic card and address filer provided on Concurrent PC-DOS. This Rolodex-like application stores hundreds of entries that may be called on by name, address or number. The card filer is one of several features on Concurrent PC-DOS designed to make computers easier to use.

Another enhancement for simple operation is a system of menus. Users may perform typical duties, such as printing, and renaming may be accomplished at the touch of a keystroke. Other menus may be created by the user, or the menus system may be bypassed altogether.

Miller uses his microcomputer to automatically dial THE SOURCE. Information from the data base service rolls across the top of the screen where Miller eyes its progress. Meanwhile, he programs in a third window in the lower portion of his screen.

Multitasking brings an additional benefit to businesses which depend on personal computers, Miller continued. Instead of a phone modem, an inexpensive terminal may be plugged into the RS-232 port at the rear of the

computer.

Two workers may then use the system at the same time without interfering with each other's job. In this simplified version of a multi-user system, each user may work with a different application.

"They can share software, files and hardware," Miller said. "The double-user system is a step toward understanding multiuser systems such as Digital Research's StarLink, which lets five people use a single desktop machine. Any inexpensive terminal that fits in the RS-232 plug may be attached to form the double-user system with Concurrent PC-DOS."

Concurrent PC-DOS drives the StarLink set-up as well, however, as it includes a coprocessor board to increase the power of a personal computer. The double user set-up is handled by Concurrent PC-DOS alone.

Further, a portable model in the field may be linked through a modem and phone line directly to the unit based in the office. The user in the field and the one at the office may work on the system at the same time.

"The need for a multitasking and multiuser system became apparent with the need to share information," Miller said. "Simply, Concurrent PC-DOS allows businesses to communicate without tying up their resources."

For product literature and the Concurrent PC-DOS dealer nearest you, call toll free (800) 227-1617 ext. 400 or in California at (800) 772-3545 ext. 400.

Briefs

(continued from page 4)

with the formation of a committee of representatives from Digital Research and major Japanese corporations.

Japan is regarded as one of the leading producers and users of microcomputers.

Franchises added to distribution network

The Genra Group, a computer dealer franchise with 43 stores nationwide, has agreed to carry Digital Research products including Presentation Master and Concurrent PC-DOS.

Headquartered in Dallas, Genra Stores were the former Xerox outlets and are located in major

metropolitan areas. The chain serves businesses and professionals throughout the country with office equipment, including professional computer products. Each store provides a full-time technical specialist.

Another Texas retailer, Balcone's Computer Corp., is providing Digital Research products to government agencies and schools, including universities. Balcones is a value-added reseller that bundles the products with hardware. The company is located at 2625 Buell Ave., Austin, Texas 78748, (512) 451-4202.

For information on the location of Genra and other dealers nearest you, call toll free (800) 227-1617 ext. 400 or (800) 772-3545 ext. 400 in California.

Note from the Editor

We have been revising our mailing lists for Digital Research News. Effective with the January 1985 issue, Digital Research News will be sent 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 by Dec. 1, 1984.

Mail by Dec. 1, 1984 to:
Digital Research News
Attention: Customer Registration
Box DRI
Monterey, CA 93942

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

Name _____
Company (if applicable) _____
Address _____

Vice presidents and directors announced

Digital Research has promoted **John Hiles**, chief engineering officer, and **Dr. Fred Cutler**, director of marketing, to the level of vice president for their respective divisions.

Meanwhile, several directors were hired and others promoted by Digital Research in the departments of Finance and Engineering.

• Before he became vice president of engineering, Hiles was chief engineering officer for commercial products. He joined Digital Research in March from Mead Data Central, an Ohio-based company that provides on line informational services.



At Mead, Hiles directed the product development organization which developed and sustained on line systems, data bases, translators and microcomputer applications. He spent seven years at Amdahl computer where he led the first commercially successful port and upgrade of UNIX from a mini-computer to a main frame system (S/370). The University of Santa Barbara graduate has also worked in the aerospace industries for McDonnell Douglas and Rockwell International.

• Cutler was senior director of marketing for consumer products for Digital Research before his appointment as vice president of marketing. He now oversees marketing for all commercial and retail products.



Cutler joined Digital Research in late 1983 after serving as vice president of marketing at Mattel Electronics, where he was involved with videodisc technology. He has also worked as a management consultant at Booz, Allen & Hamilton. Cutler earned a masters in business administration from Western Michigan University and a doctorate from the University of Southern California.

In other recent appointments by Digital Research:

Displayphones

(continued from page 1)

DRI's Concurrent™ PC DOS operating system. This substantially reduces per-user cost by eliminating the need for individual CPUs, software and expensive peripherals.

Users also can transfer data between Displayphone terminals, a useful feature when employees need to share data bases, files and software programs. Users are unaware that programs are being used at the same time by other people in the office.

With the StarLink hook-up, Displayphone users have access to popular business-productivity software. These include Micropro's

• **Gabriel Baum** was promoted from director of Engineering to senior director of Product Support. Reporting to Baum are the departments of Technical Support, Quality Assurance, Technical Publications and Documentation.



Before joining Digital Research in early 1984, Baum was vice president of the Applications Software Division for Mattel Electronics. He managed more than 200 programmers worldwide. A British national, he has also worked with Thorn-EMI in England, Honeywell in Finland, and Xerox in France, Germany and Australia.

• **Alan Lawson** was promoted from director of engineering for the Consumer Products Division to manager of hardware engineering. He is responsible for the development of products such as StarLink, the Digital Research board that gives multiuser power to a single user personal computer.



In his previous position, Lawson directed the development of Dr. Logo for generic 8-bit and 16-bit versions. He joined Digital Research from Texas Instruments, where he spent 10 years in different positions related to hardware development. In TI's Home Computer Division, he directed the development of all consumer computer products. He received a degree in electrical engineering from Texas A&M University.

Other new directors hired recently by Digital Research include:

• **Harsh Mehra**, a former manager of computer services for FMC Corp., has joined Digital Research as the director of management information systems.



Mehra's responsibilities include

Wordstar, Micro-business Application's MBA Accounting, Sorcim's SuperCalc II, Ashton-Tate's dBase II, Microsoft's Multiplan and Digital Marketing Corp.'s Milestone Project Manager.

Price and Availability

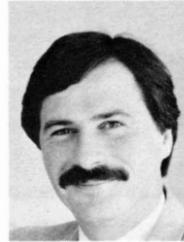
The StarLink-Displayphone system is available for under \$3,000 through Northern Telecom distributors.

Northern Telecom Inc., with U.S. headquarters in Nashville, Tenn., is the world's largest manufacturer of fully digital communications systems and a major supplier of integrated office systems. It is a subsidiary of Northern Telecom Ltd., of Toronto, Canada.

overseeing the development of sophisticated computer software for accounting, order processing, manufacturing and management of the corporation's growth. He is helping plan the acquisition of additional hardware for research.

Mehra graduated with a degree in agricultural engineering from the University of Udaipur in India. He received master's degrees in business administration from the University of British Columbia.

• Digital Research's retail marketing force has been strengthened by **Bill Polich**, formerly director of merchandising at Kola Technologies. He has also been a marketing manager of CPUs at Atari and director of merchandising for U.S. Pioneer Electronics.



As director of Retail Marketing, Polich oversees the development of sales tools and advertising. His responsibilities include the development of packaging, collateral, dealer communications, development of retail policy and product promotions. He graduated from Western Illinois University.

• **Tom Keese**, a lawyer who is an expert in international tax law, was hired by Digital Research as director of taxation.



Keese is responsible for all corporate tax matters including compliance and planning for fed-

eral, state, local and international taxation. With Peat, Marwick, Mitchell & Co. he had similar duties as a financial expert and tax consultant to U.S. executives in Japan.

Keese also worked as a tax attorney at Ruffo, Ferrari & McNeil in San Jose and Touche, Ross & Co. in Wisconsin. He received a degree in finance from the University of Iowa School of Business and continued his education at the University by earning a master's degree in accounting. He completed a law degree from the University of Iowa School of Law, where he was managing editor for the Journal of Corporate Law.

• An expert in systems software, **Larry Wolfe** has joined Digital Research as director of engineering at the Austin Development Center.



Wolfe is a Texas resident who helped recruit the engineers who staff the new facility. They are working on various projects for Motorola and others in the fields of programming languages and tools.

Wolfe began his career in 1965 as a systems software analyst for the Computation Center, University of Texas. In 1978, he became a communications specialist for Honeywell Information Systems.

In 1983 Wolfe became the director of research and development at Execucom, a software house that developed financial management products for mainframe systems and Fortune 1000 companies. Wolfe earned a chemistry degree from the University of Texas.

Future

(continued from page 2)

and multitasking systems.

Technical support is considered crucial to the success of advanced microcomputer systems such as the Altos multiuser network and the AT&T 3B2, a 16-user super microcomputer. MicroAge joined a handful of distributors chosen by AT&T that were selected, Hald said, on the basis of their ability to provide high quality technical support.

The AT&T 3B2 runs under the UNIX System V operating system. Designed by AT&T Bell Laboratories, UNIX System V is suited to large multiuser and multitasking systems. A version of UNIX System V is being ported by Digital Research to the Intel 80286 microprocessor.

Meanwhile, MicroAge intends to promote the standardization of UNIX System V by serving as beta test site for applications from the UNIX System V Library. Library products, a joint project between AT&T Technologies and Digital Research, will be introduced in the fourth quarter of 1984.

UNIX System V is heralded by Hald and others as the ultimate method of worldwide communications networks. He predicted the operating system will become popular for high end applications that require enormous processing power.

"The heart of most problems may be traced to information management," Hald pointed out. "MicroAge and Digital Research are addressing some of the communications problems by helping businesses step into the next generation of personal computers."

Headquarters

(continued from page 1)

Pacific Grove that overlooked historic Cannery Row. As the company grew from 20 employees to more than 500, it spread into 10 buildings scattered throughout the Monterey Peninsula.

Building for the new site began in spring of 1983. Employees were relocated as construction proceeded. Technical Support was the first to occupy their new quarters in the fall of 1983.

Digital Research continues to maintain a separate manufacturing facility in Monterey and the headquarters for its World Trade Division in Palo Alto. Also, the company supports sales offices throughout the United States, Japan and Europe.

The new Digital Research address is 60 Garden Court, Box DRI, Monterey, CA 93942, (408) 649-3896.

See us at **COMDEX™/Fall '84** in the rotunda, booth 6114.

Digital Research options available on AT&T 6300

AT&T will distribute Digital Research programming tools and presentation graphics for its new AT&T Personal Computer 6300. The announcement was made at the National Computer Conference in Las Vegas, Nev., July 10.

Among the packages available through AT&T Information Systems are DR Draw, DR Graph and languages tools. Additionally, AT&T will distribute a version of the Concurrent PC-DOS operating system on its personal computer. The AT&T version of Concurrent PC-DOS, expected to be available during the fourth quarter, runs Concurrent CP/M and PC-DOS applications.

The operating system provides the added performance for communications and network capability made possible by AT&T's advanced hardware. For instance, files may be transferred from a computer in the office to a portable model at a remote site.

Buyers can choose between the single tasking CP/M-86, Concurrent CP/M, MS-DOS or Concurrent PC-DOS (which supports CP/M and MS-DOS applications).

"Digital Research's Concurrent PC-DOS adds a broad spectrum of

capabilities to the AT&T Personal Computer, including screen windows, concurrent multitasking, a built-in communications capability and an easy-to-use menu interface," said Larry Dooling, executive director of workstations and small business systems for AT&T. "We are currently testing all top-selling application packages in the Concurrent PC-DOS environment and expect to certify an impressive array of packages at the time we make this new operating system available."

AT&T's microcomputer was designed to produce business graphics. The screen contains 640 by 400 pixels for a high resolution screen and runs Digital Research graphics software designed especially for business presentations. Among the Digital Research packages that run on the AT&T PC are DR Draw, DR Graph and Presentation Master, a hardware and software combination for producing quality slides.

"Digital Research's graphics software was designed for the high-resolution capabilities offered by AT&T's monochrome and color monitors," Dooling explained.

Several Digital Research lan-



John Rowley, president of Digital Research, left, and Jack Scanlon, vice president of AT&T Technologies, Computer Systems, discussed cooperation between the two companies during a press breakfast at the National Computer Conference. The companies are producing a library of business applications for UNIX System V.

guage products are distributed for the AT&T machine. They are: Dr. Logo, PL/I™, Digital Research C, Pascal/MT+ and CBASIC.

All of the Digital Research products for the AT&T Personal Computer are distributed through AT&T's direct sales force and

selected retailers. They are also channeled through Digital Research's distribution network.

For product information or the dealer nearest you, call toll free (800) 227-1617 ext. 400 or in California (800) 772-3545 ext. 400.

Professional Programmer Support provides direct line

Software writers who work under demanding deadlines can save time and money by turning to Digital Research when they need help overcoming a technical barrier.

Professional Programmer Support (PPS) provides professionals with a direct line to Digital Research experts. The company maintains a service for unlimited access to support engineers and has instituted a new program for the occasional caller.

Those who wish limited access pay \$40 per call. Writers also may subscribe to MicroNotes, Digital Research's technical quarterly newsletter for \$25 a year.

"A consultant can cost as much or more than \$70 an hour," said Marion Brown, manager of the Support Center at Digital Research. "We are providing the most inexpensive support program available to anyone using our products."

Or professionals can subscribe

cal publication from Digital Research.

- A subscription to electronic data bases on CompuServe.

Subscribers to THE SOURCESM and CompuServe data base services receive answers to common questions about Digital Research products, application notes,

"They can look to us for assistance in using our products in the most productive way possible."

patches, product information, retail price list and company news. They are also provided transcripts from "The Computer Chronicles," a weekly documentary featuring Digital Research founder Gary Kildall.

Digital Research's participation in THE SOURCE and CompuServe is managed by Joe Byrd, formerly an editor at McGraw-Hill and now technical communications manager at Digital Research. Byrd updates the files weekly and responds directly to electronic mail from subscribers.

"MICROLINE on THE SOURCE and DRI on CompuServe provide the means to reach Digital Research customers directly," Byrd said. "Subscribers to PPS can send us their program's source code, we'll review it and send it back directly to their electronic mail box. Sometimes this method

can save as much as a week or two, considering the time it takes to write and send a letter through the postal service."

Byrd developed the Digital Research Special Interest Group, DR SIG, for all Digital Research customers using CompuServe. Any CompuServe subscriber can access files in DR SIG by typing GO PCS-13. One of the 11 sections in DR SIG is set aside for conferencing between members of the PPS service. Others contain information on Digital Research products, including patches and language bindings. Other sections are used as an electronic bulletin board for messages between members or between members and Digital Research.

"We encourage comments or suggestions from subscribers," Brown said. "THE SOURCE and

CompuServe are making it easier for users to communicate directly to Digital Research about all of its products, including programming languages. At the same time, they can stay up to date on news from Digital Research."

"Through Professional Programmer Support, Digital Research has developed a service program similar to those found in the mainframe or microcomputer world," Brown said. "PPS entitles subscribers to priority access of experts in all Digital Research products, including its languages.

"It's a novel idea for the microcomputer industry," said Brown. "We are separating end users from professional users who may need additional support. They can look to us for assistance in using our products in the most productive way possible."



to the full support program for \$250. They receive:

- Unlimited access to Digital Research technical support.
- MicroNotes, a quarterly techni-

Presentation Master

(continued from page 2)

understand tutorial diskette that explains operation of Presentation Master.

Slides may substitute any of 72 colors on Presentation Master for the 16 colors provided on an IBM

PC color display. Or users may choose from eight color combinations.

For more information on Presentation Master and the referral dealer nearest you, call (800) 227-1617 ext. 400 or in California (800) 772-3545 ext. 400.

PPS SUBSCRIPTION REQUEST

Name _____ Date _____

Company Name (If applicable) _____

Address _____

_____ Zip Code _____

_____ Enclosed is \$250 for a one year subscription for PPS.

_____ Please send me information about Professional Programmer Support (PPS)

Payable by Check, Master Card, Visa, American Express or Money Order. Prices are subject to change without notice. Make checks payable to Digital Research.

Payment Method:

Check enclosed _____ Master Card _____ Visa _____ American Express _____

Name on Card _____

Account Number _____ Expiration Date _____

Signature _____

Return To: Technical Support Center
Digital Research
Box DRI
Monterey, CA 93942

"Media Quotes"

"Digital Research Inc. is casting a long shadow these days. This Pacific Grove, California, software supplier seems to loom larger than life because of its well publicized partnerships with AT&T, Motorola Inc., and Intel Corp. — and its less obvious, but no less important, relationship with IBM."

Micro Marketworld, Sept. 3, 1984

"AT&T and Digital Research Inc., Pacific Grove, Calif., jointly disclosed AT&T's intention to offer DRI's 'Concurrent PC-DOS' operating system on the new AT&T Personal Computer. Concurrent PC-DOS supports both Concurrent CP/M and PC-DOS ... Digital [Research's] 'DR Draw' and 'DR Graph' graphics packages are available as applications for the AT&T PC, as is 'Dr. Logo,' a programming language."

MIS Week, July 18, 1984

"AT&T announced plans to offer Digital Research Inc.'s Concurrent PC-DOS for the AT&T Personal Computer 63000 ... Both AT&T and Digital officials emphasize the benefits of concurrent, multitasking operating and said that Concurrent PC-DOS would provide a bridge between today's personal computers and the more powerful multi-user systems that are just beginning to hit the market."

Computerworld, July 11, 1984

"Of companies that are develop-

ing graphic software and specifically GKS-compatible products, Digital Research has developed a significant posture ... Digital Research has developed an extensive library of end-user and OEM software geared to graphics. Specifically, it offers the GSX-86 Programmer's Toolkit for \$350. This package includes peripheral device drivers and is compatible with CP/M-86, Concurrent CP/M and PC-DOS. In addition, the company provides language binding for the full family of Digital Research products."

Mini-Micro Systems, July, 1984

"If you're really sold on Palette but wish it was easier to master, Digital Research Inc., known for its CP/M operating systems, has a product for you. The Polaroid Palette system is also being sold by DRI under the name Presentation Master. The complete DRI package, available only for IBM Personal Computers, comes with the Polaroid computer image recorder, 35mm instant slide-making system, DR Draw and DR Graph software programs, documentation, tutorials and diagnostic disks."

Personal Computing, September 1984

"The market is loaded with business graphics packages, but only one can lay claim to having more than all the rest. That package is the Presentation Master by Digital

Research along with the Polaroid Palette Image Recorder."

Software News, August 1984

"The IBM PC and PC/XT hardly need any new muscle, but Digital Research [Pacific Grove, CA.] is giving them some anyway: a Concurrent PC-DOS operating system which allows four separate software programs to run simultaneously; and Presentation Master, which allows one to create slides and color prints without spending an arm and a leg ... a MOT inspection found the [Concurrent PC-DOS] package pretty easy to use. Digital Research has created easy to understand menus that help newcomers get to work ... The quality of the slides from Presentation Master is impressive, and they are easy to create"

Modern Office Technology, July 1984

"The upmarket is a clear target for Digital Research Inc. not only when it comes to development, but also when it comes to courting dealers. DRI says it wants the most influential and sophisticated dealers in the country to carry its products ... The company has introduced a host of new highend products that it's selling through important chains such as Inacom Computer Centers, MicroAge Computer Stores, Inc., General Micro and The Genra Group."

Micro Marketworld, Sept. 3, 1984

DIGITAL RESEARCH NEWS



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**

Bulk Rate
U.S. Postage
PAID
Permit No. 1933
Fullerton, CA



Digital Research moves
to new headquarters