

BYTE LINES

NEWS AND SPECULATION ABOUT PERSONAL COMPUTING

Conducted by Sol Libes

More Companies Jumping On UNIX Bandwagon:

Bell Laboratories developed the UNIX software system originally to run on Digital Equipment Corporation's larger PDP-11 minicomputer systems. Now UNIX has been adapted to run on at least a dozen other systems. One of the reasons many companies are implementing UNIX on their systems is that American Telephone and Telegraph's planned Advanced Communications Service (ACS) requires UNIX to incorporate computers into the system.

Western Electric has licensed Onyx Systems Inc of Cupertino, California, to develop a microcomputer version of UNIX. Onyx will offer UNIX on its C8002 microcomputer system. It will support eight terminals and several high-level languages. Microsoft Inc of Bellevue, Washington, has disclosed that it is close to signing an agreement on a UNIX license. Microsoft plans to implement UNIX for Z8000-, 8086-, and 68000-based systems. Zilog Inc has reportedly already signed a UNIX license. In all cases, these companies are implementing UNIX on 16-bit microcomputers.

(UNIX is a registered trademark of Bell Laboratories.)

Microcomputer Makers Changing Marketing For 1980s: The 1980s are seeing significant changes in microcomputer marketing, as sales may soon pass the \$1 billion mark. The 1970s

were dominated by a large number of cottage-type sales operations trying to make general-purpose systems for sophisticated hobbyists.

Already we are seeing the personal-computer market being dominated by a few large manufacturers—Radio Shack, Commodore, Apple, Texas Instruments, and Atari—and soon possibly IBM and Digital Equipment Corporation. Further, these companies are starting to move toward specialized computers that focus on specific customer needs, even computers which are immediately useful to less knowledgeable users. These companies are planning to have several computers oriented toward specific vertical markets and thus cover a broad spectrum of users.

In some markets, the change will concern only software and peripherals. In others, it may require an entirely new machine (eg: TRS-80 Model I versus TRS-80 Model II). Thus we can expect to see similar processors packaged and promoted differently. For example, Apple Computer Company has introduced the Apple III, a larger and more powerful machine than the Apple II, designed with the business and professional user in mind. (See the preview in this issue on page 50....CPM)

Another example of the specialization of the microcomputer market is the introduction of the HP-85 by Hewlett-Packard. This \$3250 personal computer is aimed at scientific,

engineering, and financial users. HP has also disclosed that it plans to introduce other personal computers.

Thus, I am sure that, as we move further into the 80s, we will see computer manufacturers with a broad line of different microcomputers which are tailored to the small-business, educational, scientific, process-control, and financial markets.

The computer that is proving the most elusive for manufacturers is the true home computer. Not the hobbyist computer, but the home computer. Several are quite close (eg: Texas Instruments, Atari, and Apple), but the primary problem is still that the price is too high. The home computer may prove to be the last market to be cracked. Texas Instruments (TI) introduced its 99/4 as a "home computer"; however, because of disappointing sales TI is now reorienting the sales campaign to the small-business market. Possibly the small business is in the home.

The retail sales business is also changing. Digital Equipment Corporation (DEC) and IBM are changing the retail marketing of computers. DEC presently has 21 stores and at least 6 more are planned. IBM is also retailing through its 50 "Business Computer Centers," which have doubled in number from last year.

DEC is now selling its popular LA34 terminal at a discount through its stores. This move is viewed as

undercutting by DEC's regular dealers and they are up in arms. IBM is selling its new video terminal on a cash-and-carry basis also.

There is no doubt that we will see an increase in the retail cash-and-carry market as the traditional mini- and large-computer makers realize the possibilities. I am sure that we will soon see IBM stores in shopping malls just as we now see Bell Telephone stores. These companies realize that if they are to continue their high growth rates, they must move into new markets—and the personal-computer retail market is a prime candidate.

Bell System Testing Home Data-Base System:

The Bell System is testing a two-way home data-base service, called "Viewtron," in Coral Gables, Florida. Television terminals, operating at 1200 bits per second (bps) over conventional telephone lines, have been placed in 160 homes. The test is sponsored by the Viewdata Corporation of America, a Knight-Ridder Newspaper Inc subsidiary. Thirty of the terminals will be rotated among test homes over a 6-month period. The terminals provide a 20-line by 40-character color display.

The services include Sears "Teleshop," which allows users to order consumer items, and Grand Union grocery ordering for home delivery. Access to Associated Press (AP) news reports, weather informa-

tion, stock market reports, airline travel information, educational, and other data is also planned.

ROM Programs Held Not Copyrightable: A decision made in a federal court has held that object-code programs in read-only memory cannot be copyrighted, even though the source code was copyrighted. One of the bases for the decision was that the object code is not a true copy of the source code, because it is not in a human-readable form.

The decision was made in a case involving two competing computerized chess-game manufacturers. Data Cash Systems Inc sued J S & A Group Inc for producing a chess game that uses read-only memory code identical to its chess-game program, which was copyrighted in source code.

Personal Computers Are In For Another Banner Year:

According to a report by the well-known market-research firm Arthur D Little Inc of Cambridge, Massachusetts, sales of personal computers will double this year. The company predicts that sales will reach \$950 million, with 600,000 units produced, up from \$500 million last year. 1979 showed a 67% increase over 1978, which was not up to the experts' expectations.

The firm predicts that a large part of the personal-computer sales increase will be due to products from Texas Instruments, Mattel, Atari, and Canon, plus the mass merchandising by Sears Roebuck, J C Penney, Montgomery Ward, and Foleys.

Computer Communication Via Amateur Radio Growing: With the Federal Communications Commission's (FCC) approval of ASCII (the American Standard Code for Information Interchange) for transmis-

sion over the airwaves, more computerists are turning to amateur radio for computer-to-computer communication. All that is needed is a terminal with (or without) a computer, a modem, and a 2-meter FM transceiver. Articles on how to accomplish this have appeared in the *AMRAD Newsletter* published by an extremely active amateur-radio group, the Amateur Radio Research and Development Corporation. To join AMRAD and receive their newsletter, write: AMRAD, 1524 Springvale Ave, McLean VA 22101.

The protocol used in computer-to-computer transmission is the CBBS (computerized bulletin board system) protocol developed by Ward Christensen and Randy Suess of the Chicago Area Computer Hobbyist Exchange (CACHE). Ward wrote an article on this topic which appeared in November 1978 *BYTE* (page 150).

CBBSSs Increasing Rapidly: The number of Computerized Bulletin Board Systems in operation is now approaching 100. Some provide mailbox facilities, and some have the ability to transmit and receive software. AMRAD will soon publish a listing of CBBSSs. To obtain a copy send \$1 to AMRAD, 1524 Springvale Ave, McLean VA 22101.

A Association Formed: The American Association for Artificial Intelligence (AAAI) has been formed. The AAAI is headed by Allen Newell from Carnegie-Mellon University and Edward A Feigenbaum of Stanford University. The association will have its first annual conference August 19th thru 21st and also hopes to publish a regular magazine. For information write AAAI, Stanford University, Box 3036, Stanford CA 94395.

CP/M On The Apple: Apple computer owners suddenly have the whole CP/M (by Digital Research) software world available to them. Microsoft Inc, the recognized leader in developing microcomputer software, has introduced a plug-in card for the Apple which makes it able to directly execute 8080, 8085, and Z80 programs. The card contains a Zilog microprocessor. The Z80 processor executes the application program while the Apple's processor (a 6502) handles the input and output of the keyboard, display, disk, etc. With the Z80 Softcard many powerful languages (eg: FORTRAN, COBOL, APL, etc.), word-processor systems, and business application packages can be run on an Apple. Provided with the card is Microsoft BASIC Version 5.0 and CP/M for \$349.

IEEE Forms Network Standards Committee: The first meeting of the IEEE (Institute of Electrical and Electronics Engineers) Local Network Standards Committee took place in March and switched the new network-standards project into high gear. The committee will develop a computer-communications standard that will define, among other things, physical media and line-access methodology. For more information write: Local Network Standards Committee, IEEE, POB 500, Beaverton OR 97077, or call (503) 644-0161.

Gold Cost Causing Computer Prices To Rise: One S-100 computer-board supplier has reported to me that it now costs him \$30 to flash gold onto the printed circuit contacts that are inserted into mainframe motherboard connectors. That manufacturer is now seriously considering doing away with gold plating and living with the resulting oxidation problems.

This indicates to me that the days of substantial price cuts on computer equipment appear to be over. Until now the improvements in integrated circuit technology have resulted in either price cuts or increases in computing power. But now the price increases of gold and other materials, added to the increased costs of doing business, are more than offsetting technological gains. IBM, DEC, Datapoint, Univac, and many other computer makers recently increased prices by 4 to 20%.

Programs That Write Programs: Watch out, programmers! Computers may soon take over your job. The only question is how well will they program? These programs include data field, edit, and I/O facilities. For example, Computer Pathways Unlimited, of Salem, Oregon, has introduced a program called PEARL (Producing Error-Free Automatic Rapid Logic) which purports to generate customized business software. PEARL produces a program which is a combination of precoded BASIC utility routines. PEARL does its job by presenting the user with a series of menus and prompts which define the controls and interrelationships between data elements and files. PEARL runs under CP/M and CBASIC. The supplier boasts that little or no programming knowledge is needed to create programs. Now we need a program to write system-level programs, so all of us can retire!

FCC Extends Radio Interference Deadline: The Federal Communications Commission (FCC) has extended the deadline for compliance with regulations concerning radio-frequency interference (RFI) by personal computers. Originally set for July 1,

1980, the deadline has been extended to January 1, 1981. The change was due to widespread industry opposition to the July 1st date.

The regulations are aimed at stemming the interference with radio and television reception caused by computers and other electronic equipment.

CDC To Offer Home PLATO Service: The PLATO educational computer service will soon be made available to home-computer users by Control Data Corporation (CDC). CDC calls the service "Homework." It will provide programs for people with medical disabilities who wish in-home job training. A special video terminal with a touch-sensitive screen is used.

IBM Reports Record Backlog: IBM has disclosed that at the start of 1980 it had an order backlog of \$450 million per month, up from \$375 million in 1978 and \$285 million in 1977. On the other hand, IBM disclosed that computer revenue for the year rose only 0.4% in the US and 6.5% overseas.

Frank T Cary, Chairman and Chief Executive Officer of IBM, took a pay cut for 1979 due to a decrease in company earnings. However, he did get an increase in benefits. His effective earnings for 1979 were \$927,902 compared to \$892,540 the previous year, an increase of only 4%. Well, times are hard for all of us...I guess.

Random News Bits: Tandy Corporation will soon start a lease plan for the TRS-80 Model II computer that will include a 90-day "warranty" period during which customers can evaluate the machine before committing to a 3-year lease. At the end of 90 days the customer can cancel the lease and pay only for the time used. No

figures have yet been released on costs, but it sounds like a good way to find out if the machine will do the job for the customer....A recent DEC advertisement run in a newspaper advertised "cash-and-carry" prices for terminals at its local computer stores. Who knows, we may soon see DEC "Washington's Birthday Specials."...CIS COBOL, from Micro Focus Inc, Santa Clara, California, is the first microcomputer COBOL to be certified by the General Services Administration (GSA) as conforming to ANSI-74 Specifications, Levels 1 and 2. It runs under CP/M or RT-11 DOS...Godbout Electronics, Oakland, California, will soon make available an S-100-bus programmable-memory card that will operate with processors having clock rates as high as 10 MHz, without wait states....Apple Computer Company is enlarging its marketing capability. It recently purchased one of its distributors and discontinued four other distributors. Apple will set up its own regional distribution centers, where it will stock and service Apple products. Dealers will do business directly with Apple via these distribution centers....More details are being made available on the Micro-Winchester hard-disk drive due from Tandon Magnetics Corporation, Chatsworth, California (reported in a previous BYTE News column). The drive will contain two 5-inch platters storing a total of 5 to 6 megabytes and will take up about the same space as a 5-inch floppy. Samples were shown at the NCC (National Computer Conference) in May, and production units are expected by year's end. Two other companies also are rumored to be developing 5-inch hard-disk drives....The Wang Institute, Tyngsboro, Massachusetts, will be the first school to offer a

"Master of Software Engineering" degree....General Telephone and Electronics (GT&E) expects to soon begin operation of an intelligent mail/message service via data terminals. Called "Telemail," it will operate 24-hour interoffice communications....Financial users of microcomputers may be interested in a new publication called *The Financial Systems Report*. For a free sample copy, write (on business letterhead): Vernon Jacobs, POB 8137-B, Prairie Village KS 66208.

Random Rumors: Data General (DG, number 2 in the minicomputer field) may introduce a personal computer soon. Actually, DG has been marketing its 16-bit micro-Nova computer for about two years through a few select retail outlets. Now apparently, DG is ready to expand its activities into the personal system marketplace. There still is no word as to whether DEC (number 1 in minicomputers) plans a personal computer....I heard a rumor that one of the large computer-component direct-mail sellers will soon set up a Computerized Bulletin Board System (CBBS) for answering calls and taking orders....Lastly, it is rumored that Texas Instruments is about to introduce two new microcomputer systems. One will be a business-oriented system, while the second will be engineering-oriented and will compete with the recently introduced Hewlett-Packard machine.

Apple And Dow Jones Together Again: Following the success of Apple Computer Company's portfolio-evaluator program — developed with the cooperation of Dow Jones — the two companies have teamed up again to present a new offering, the *News and Quotes Reporter*. An-

nounced by Apple in May at the National Computer Conference in Anaheim, California, *News and Quotes Reporter* is priced at \$95, and will be available this month, through Apple dealers.

News and Quotes Reporter has been written for the Apple II personal computer system. Through communication over telephone lines, it allows the user to retrieve past and current news stories and editorials from the *Wall Street Journal*, *Barron's*, and the Dow Jones news service, as well as quotations for more than 6000 securities traded on the major exchanges. Users access the Dow Jones data base under password protection, and can request news by category (eg: computer industry) or by company name. According to Apple, *News and Quotes Reporter* can be used in conjunction with the portfolio evaluator for sophisticated portfolio creation and management.

Look for more details in the Fall issue of *onComputing*.

MAIL: I receive a large number of letters each month as a result of this column. If you write to me and wish a response, please include a stamped, self-addressed envelope.

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