BYTELINES

NEWS AND SPECULATION ABOUT PERSONAL COMPUTING

Conducted by Sol Libes

$299 Color Computer From Commodore: Commodore International Ltd has announced several new products, including the $299 VIC-20 color computer, which has been the subject of much speculation over the past year. The VIC (Video Interface Computer) connects to any television set or monitor and features color (22-character by 23-line display); sound; 5 K bytes of programmable memory (expandable to 32 K bytes); user-programmable function keys; full-size typewriter keyboard; high-resolution graphics; standard PET BASIC; a graphics character set; provisions for joysticks, paddles, and light pen; and external slots for extra memory and ROM (read-only memory) packs. Peripherals to be available include a tape-cassette unit, single floppy-disk drive, and printer. Commodore's new low-priced CBM 2031 single disk-drive unit (also part of the new products announcement) will be available in a serial-bus version for use with the VIC-20. The CBM 2031 will be able to store up to 170 K bytes on a single 5-inch floppy disk. It will retail for under $600.

Another significant announcement from Commodore was made with much less fanfare: a new, high-capacity business computer called the CBM 8096 that will feature an 80-column display, 96 K bytes of programmable memory, FORTRAN, COBOL, Ozz (Commodore's new user-adaptable data-management and retrieval program), and probably VisiCalc. It could have a dramatically low price. The CBM 8096 in conjunction with a high-capacity disk drive (like Commodore's new CBM 8062, with 3.2 megabytes capacity), could undersell the already low-priced Radio Shack Model II.

Availability: Do not expect to see the VIC-20 before the second quarter of 1981. The CBM 8096 will not be out before the fourth quarter of 1981.

Winchester 8-Inch Drives Off To Slow Start: Manufacturers of 8-inch miniature Winchester hard-disk drives are reporting that sales, so far, have been disappointing. Apparently there is a wait-and-see attitude on the part of customers. This appears to be due to standardization and interface problems, as well as the emergence of 5-inch miniature Winchester drives. Sales for 1980 were predicted to be in excess of 60,000 units; however, it appears that fewer than 37,000 will be shipped, with IBM taking a very sizable portion of this number.

Sales of 8-inch miniature Winchester drives are expected to increase at a healthy rate. Some industry analysts are predicting 500,000 units by 1985. It is further predicted that these drives will take over the 20- to 200-megabyte market previously held by 14-inch Winchester drives. It is expected that the 5-inch Winchester drives will domi-nate the under 20-megabyte market.

Model 33 Teletypewriter To Be Discontinued: The Teletype Corporation's Model 33 teletypewriter, affectionately known as "TTY" by long-time users, will be phased out of production by the end of 1981 after over twenty-five years of production. Teletype will also stop production on the models 28, 32, 35, DRPE, BRPE, and 4210. The Model 33 was the primary terminal for interactive computer use in the 1960s and early 1970s. Although it was designed for message transmission via telephone lines, early computer designers adopted it and its ASCII (American Standard Code for Information Interchange) character code as a standard. Parts and documentation support will be continued for five years.

DEC Shuts Two Computer Stores: DEC (Digital Equipment Corporation), the first computer company to open a chain of computer stores, has halted the planned expansion of its store network. Further, it has closed two of its twenty-seven stores. Reportedly, DEC spent between three and five million dollars to open the stores plus an equal amount for operating expenses, yet only a few of the stores have become profitable. The stores closed are in Detroit and the Wall Street district of New York City. More stores are expected to be shut down.

Xerox, CDC (Control Data Corporation), and Commodore all have followed DEC's lead by opening computer stores. Xerox expects to open fifteen stores in 1981, while CDC and Commodore stated that they expect to open "hundreds" of computer stores.

Reader's Digest Buys The Source: In a surprise move, the Reader's Digest has purchased a 51% interest in the Source Telecomputing Corporation. According to the *Washington Post*, Reader's Digest paid $3,000,000—a substantial amount of money for a company with no assets and only a marketing concept. The Source is entirely a resale operation: communications from Telenet, computing from a time-sharing service called Dialcomm, and data bases from all over. The *Washington Post* article also disclosed a messy court battle between Bill Von Meister, who developed the idea for The Source (and some years ago, developed the idea for the Mailgram), and Jack Taub, who ousted Von Meister in a financial power struggle last year.

A recent article in *Business Week* described The Source's woes. When Jack Taub took over the company last October, he immediately fired forty-five of the seventy employees, cut expenses, and procured additional financing. However, many suppliers

still report that they have not been paid and Taub had been asking them to wait until 1982.

The Source promised in its advertisements that airline schedules, restaurant guides in major cities, and mailgram-like services would be available. The mailgram went into effect last April and the airline schedules in June. The restaurant guide still covers only two cities. Also, at present a maximum of 100 users can use the system simultaneously; higher demand on The Source has led to some long-delayed responses.

Most users seem to accept The Source's problems as those of a pioneer with development difficulties and that slowly, but surely, the services are improving. Most agree that even with its problems, The Source is very worthwhile.

The Reader's Digest could be just what The Source needs to become successful. The purchase indicates that the Reader's Digest is clearly moving into the electronic journalism/communications/information field.

The Japanese Are Coming:
Until now the US has dominated the micro-, mini-, and large-computer markets across the globe. However, things are changing and 1981 will no doubt see the Japanese as a major factor in the computer market. The Japanese are already pushing foreign *computer* suppliers out of the Japanese marketplace and are presently setting up marketing organizations in the US and Europe. They are moving slowly and very carefully, which is quite different from the American way of operating. Therefore, do not look for the Japanese computers to suddenly dominate the market. Rather, look for slow, but steady, growth as the Japanese learn how to adapt and market products in foreign marketplaces. There is no doubt that the

hardware is first-rate—a congressional task force recently concluded that Japan has caught up to the US in semiconductor technology "and in certain areas, may be ahead of us." In fact, many American computer makers are already using Japanese components in their computers, and the trend is increasing.

This picture is essentially the same as that of the introduction of Japanese cars into this country. Japanese cars were first introduced in the US about 20 years ago. Today they account for 40% of the market. Their cars cost more than US cars but are designed and made better. The same thing will probably happen in the computer market. Who knows, in another ten years we may see government-supported loans for Apple, Commodore, or Radio Shack.

XENIX, UNIX-Like, UNIX-Equivalent — What Next?
There are now at least three UNIX-like operating systems available for microcomputers, only one of which is licensed by Western Electric. By now, Microsoft should have its XENIX operating system, developed in the C language under Western Electric license. It will be available for Z8000-based systems. Electrolabs already has its "UNIX-Like" systems available for Z80-based systems, and Morrow Designs has announced a "UNIX-Equivalent" system for use with its Z80 system.

Microsoft claims that XENIX is to be a superset of UNIX and that it will conform to Release 7 of UNIX. Further, Microsoft hopes "to establish a clearing-house for UNIX and XENIX software developed by users." XENIX will be sold primarily to OEMs (original equipment manufacturers), and Microsoft will receive $500 for each single-user copy sold.

Electrolabs claims that its

OS-1 Operating System "appear[s] exactly like UNIX to the user" and that it "provides for up to 1024 users" plus "lots more"—all in 12 K bytes of code. A 4 K-byte CP/M adapter is also included (with source code) in the $249 price.

The Morrow operating system will be advertised as a "UNIX-Equivalent." It will be designed to run specifically with the new Morrow Z80 processor card, which includes a hardware mathematics processor and a programmable system-supervisor circuit for memory management.

Three-Dimensional System To Be Introduced:
Genisco Computers, Costa Mesa, California, is expected soon to announce the first three-dimensional computer-graphics display. It will use a vibrating parabolic mirror and stroke display to create the illusion of a three-dimensional object hovering in space before the operator. The system will probably sell for about $100,000, and it is expected to find applications in air-traffic control, molecular research, and oil exploration.

Data Errors To Increase With Sunspots:
NOAA (the National Oceanic and Atmospheric Administration) is predicting that increases in sunspot activity will cause disruption of data communications worldwide. This increase occurs every eleven years, with 1981 thru 1983 being a period of intense activity. The last such period occurred between 1969 and 1972. The effect is felt to be more severe at higher altitudes.

Double-Side Floppy Woes Persist:
Makers of double-sided floppy-disk drives finally appear to be delivering reliable units. Users report that the 5-inch dual-sided drives exhibit excellent reliability. However, 8-inch drives still

appear to have problems, and full production of high-reliability units is not expected for several more months. Experts are predicting that not until 1982 will we see a crossover point where more double-sided floppies are made than single-sided units.

Fired Programmer Sued For Erasing Programs:
A suit filed by Leeds & Northrup (L & N) against a former employee *accuses* him of erasing several valuable programs shortly after being fired from his project manager/programmer position and before his password had been removed from the system. L & N is asking for $10,000 in damages and a court order restraining the former employee from future tampering with the computer. Fortunately, L & N was able to restore the obliterated programs from backup magnetic tapes.

Ups And Downs In Personal Computing:
It's been all "ups" for Tandy Corporation, while it has been all "downs" for Texas Instruments (TI).

It looks like Tandy will sell close to 300,000 Radio Shack Model I computer systems by the year's end. Tandy reported that its fourth quarter earnings rose 52% to over $30 million, with year-end net sales of over $112 million. That's an increase of over 35%, on sales that rose 14%. Further, Tandy announced that it plans to open fifty more Radio Shack Computer Centers (there are sixty presently). Tandy also plans to have 250 full-line stores (ie: Radio Shack stores that carry its full microcomputer line of products) by the end of 1981. Also, 100 new Radio Shack stores will be added, bringing the total number of Radio Shack stores selling audio, electronic, and computer

equipment to 8000 worldwide.

Texas Instruments, on the other hand, has problems. Its 99/4 personal-computer system has met with poor sales, far less than TI projected. The general feeling is that, although the unit has many unique features, it is overpriced and undersupported. TI reported in its most recent quarterly report that this was one of the company's "adverse areas." But TI is not taking this lying down. Learning from automobile makers, TI is experimenting with $200 rebates ($100 cash and $100 worth of software) and is backing this up with promotion, software development, and a seminar program. The 99/4 lists at $950, but many dealers are discounting it to as low as $699 plus rebate.

Funny Bit: The Manhattan Yellow Pages telephone directory lists Lifeboat Associates, the country's largest distributor of microcomputer software, under "Marine Supplies & Emergency Equipment."

Tandy Introduces Three New Computers: Recently the Tandy Corporation announced three new personal computers. Their features have been covered in detail in several publications (see the October 1980 BYTE, page 172); there is no need to review them here. However, some comments may be worthwhile.

The three machines are the TRS-80 Color Computer, the TRS-80 Model III, and the TRS-80 Pocket Computer. The color computer sells for $400 in its basic configuration (4 K bytes of programmable memory) and is only expandable to 16 K. It uses the 6809 processor and is therefore not compatible with the TRS-80 Model I and II. It does not look like it is intended to compete with the Apple computer. Rather, it appears aimed at competing with lower-level systems such as the Atari 400 and TI-99/4 personal computers.

Although Tandy denies it, the Model III appears to be a replacement for the Model I. Considering that the Model III contains the monitor, keyboard and disk drives in a single enclosure, is software compatible with the Model I, and offers additional enhancements, most industry people feel that the Model I will be phased out when the Model III systems finally arrive at the stores.

The Pocket Computer is really a marketing experiment. Neither Tandy nor any of the other pocket-computer makers really know if there is a meaningful market for this machine. Quasar and Panasonic talk about selling one million of their new hand-held computers next year (at $400 each). Tandy, however, is selling its at $250 and may garner the major portion of the market.

But what is the market for these pocket machines? The makers are projecting that they will be bought by salesmen and executives who, via a modem, will contact their home computers to book orders, check order status, receive and send messages, etc. Will hobbyists be attracted to these machines? The successful systems today all have a strong hobbyist base. It will, therefore, be interesting to see if these pocket devices catch on as planned.

TRS-80 Copy Due From Far East: EACA Limited of Hong Kong is manufacturing a functional copy of the Radio Shack TRS-80, which is no doubt the most popular microcomputer system made to date. Although it does not look like a TRS-80, it is hardware and software compatible with it. The computer will be marketed in the US by Personal Micro Computers Inc (PMC), Mountain View, California, and will be known as the PMC-80. It will list for $595 (without a monitor), which is $200 less than the TRS-80. It will have a 50-pin bus (TRS-80 has a 40-pin bus); PMC plans S-100 and TRS-80 interfaces.

Random Rumor Bits: Zilog is still having problems delivering bug-free Z8000 chips.... AMD (Advanced Micro Devices) is rumored to be working on the Z8003, a 32-bit version of the Z8000, scheduled for release in 1981.... NEC is rumored to be about ready to announce a new video-display-controller integrated circuit capable of handling a bit-map graphics display of 1024 by 1024 pixels, devoting 16 bits to each pixel. It will be capable of being configured for gray scale or color (3 bits each for red, green, and blue intensities) and still have 7 bits left over for things like blinking pixels, intensity protection, etc.... Intel, Western Digital, National Semiconductor, and Texas Instruments are all rumored to be working on controllers for Winchester floppy-disk systems. When these integrated circuits are available, it should reduce the cost of these controllers from the present $1000 to $1500 to a range of $200 to $500....

Random News Bits: SofTech MicroSystems Inc, sole licensing agent for UCSD Pascal, expects to make available a 16-bit version of UCSD Pascal for 8086-based systems sometime in 1981. This will be followed later by a 68000 version.... Tandy Corporation (parent of Radio Shack) has acquired the Lika Corporation of Stockton, California, for $4.5 million. Lika is a manufacturer of double-sided and multilayer printed-circuit boards.... Apple is having difficulty shipping Apple IIIs and does not expect the first shipments until after the first of the year, six months later than promised.... Bubble-memory prices are dropping as yields improve. Intel has dropped the price of its BPK bubble-memory prototyping kit from $1710 to $995 and its iSBC250 bubble-memory card from $4750 to $3500. Sales of bubble memories rose to $226 million in 1980 compared to $18.4 million in 1979.... National Semiconductor has introduced a microprocessor with BASIC in ROM (read-only memory). The INS8073 device has a 2.5 K-byte ROM with Tiny BASIC and a 64-byte area of programmable memory, which is used as a scratch-pad memory.... ANSI (American National Standards Institute) has established a committee to develop an APL language standard. Those wishing to participate should contact Clark Wiedman, University of Massachusetts Computing Center, Amherst MA 01003.... Shugart Associates will soon introduce a new series of 5-inch floppy drives capable of storing 500 K bytes on a single side and 1 megabyte on two sides. They will be compatible with older drives.... IBM is quietly setting up a distributor organization to sell its computer peripherals.... The Massachusetts Department of Revenue recently held hearings on a new tax for off-the-shelf software, time-sharing, and other data-processing services.... Apple Computer will soon begin production of the new Apple III in a new plant located in Ireland.

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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