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Two stunning new \$600 computer packages

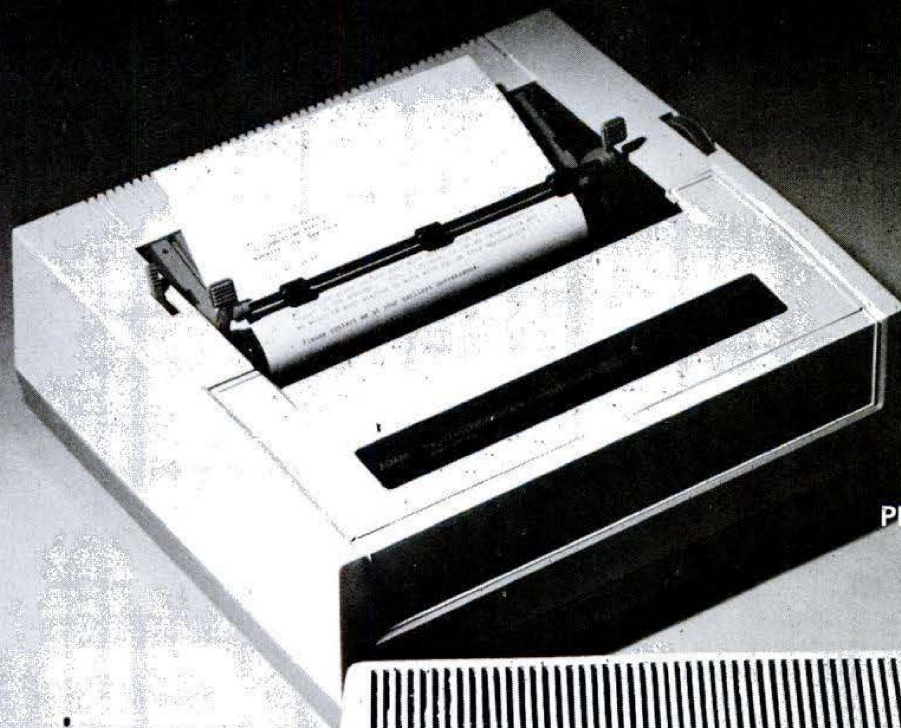
Now a small investment buys a whole system—including a letter-quality printer

By **WILLIAM J. HAWKINS**
PHOTO BY GREG SHARKO

CHICAGO
A beautiful woman sat in an enclosed glass cage 20 feet in front of me. That was as close as I could get. Hundreds of people bobbed and weaved for a better look. Most, however, had to settle for watching over the closed-circuit TV monitors that dotted the ceiling. But no eyes (well, at least not my eyes) were on the woman. They were focused on Adam—a new home computer from Coleco that she was demonstrating at the recent Consumer Electronics Show held at Chicago's McCormick Place.

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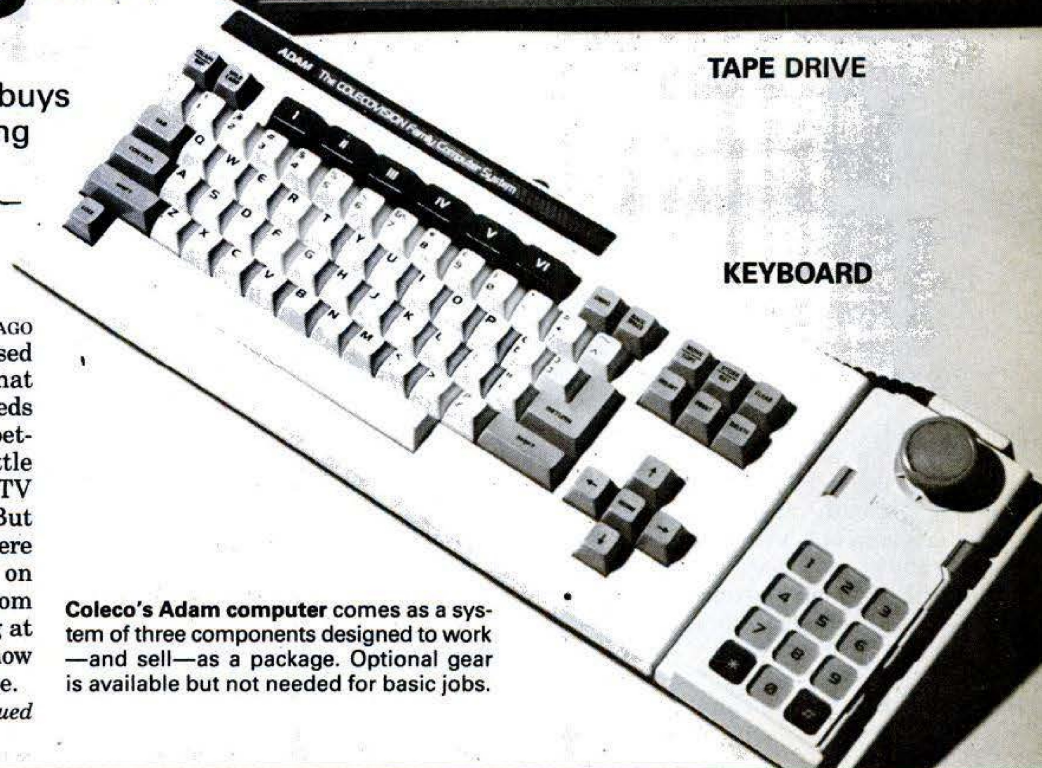
Coleco's Adam computer comes as a system of three components designed to work—and sell—as a package. Optional gear is available but not needed for basic jobs.



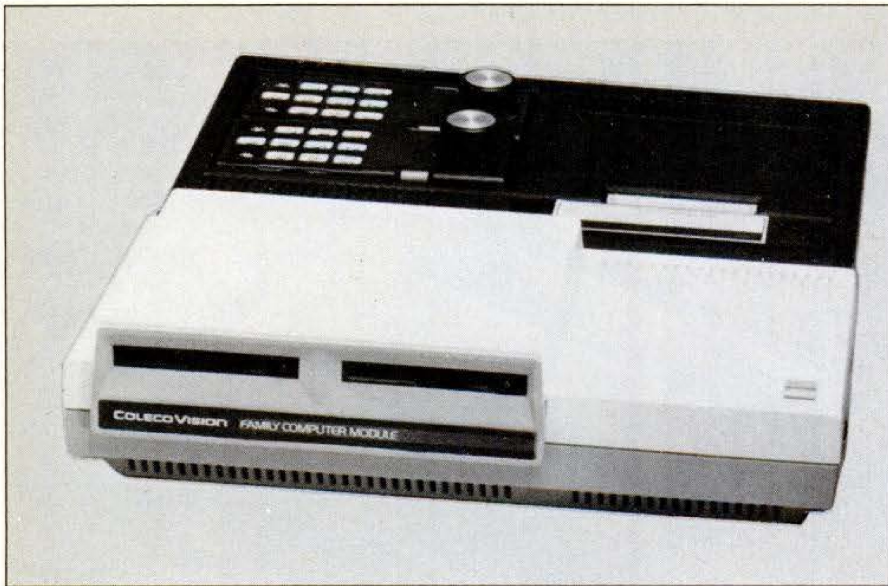
PRINTER



TAPE DRIVE



KEYBOARD



Computer module converts ColecoVision game into an Adam computer. The game

attaches to a rear connector; keyboard and printer (not shown) complete the system.

Adam was the sensation of the show. It attracted attention because it offers a complete system at a price far below anything available until now. The system includes a computer with 80K of memory, full-size keyboard with word-processing function keys, high-speed data recorder, and, most surprising, a letter-quality printer. The package also includes BASIC, a word-processor program, and a game. The price: \$600 for everything. All that's needed is your home TV.

Adam wasn't alone. Down another aisle at CES, Atari was introducing three systems with similar components and a similar price tag.

The race is on: Complete computer systems are now available at a price that wouldn't even buy a letter-quality printer a few months ago. But it won't end here. These low-cost systems have already influenced the price—and sales—of their earlier video-game cousins. And they've set off a new round of price cutting for present home computers and software. How did they do it? What do you sacrifice? What will it mean to future computers?

Inside Adam

"We use Adamnet," Al Kahn, Coleco's senior vice-president of marketing, told me. "It's a communications circuit inside Adam that allows its six microprocessors to work together. Jobs can be done simultaneously [computing, screen display, data input-output operations, and memory control], making the system fast. And circuits can be shared among system components."

Most of the electronics for the Adam system is contained in the main console, including the main power supply, which also powers the printer. "That cuts costs," said Kahn, "since all com-

ponents and the printer use Adam's circuitry." (But it also means you can't use a different printer or use Adam's printer with another computer.)

The printer mechanics have also been scaled down to cut costs. For instance, a stepper motor positions the print wheel, instead of a costly motor and positioning circuits. The trade-off is speed: The printer types at only about 10 characters per second.

Fast enough? Probably not for business use. But it's faster than most people type, so it's a reasonable replacement for home typing chores.

Although the printer seems to have stirred most of the excitement, the tape system Adam uses to save data is really innovative. The reason: speed.

The tape drive uses a cassette similar to a standard audio cassette. (Adam comes with one built-in cassette drive; a second may be installed for \$150.) Each cassette holds up to 500,000 bytes of data and can transfer data at about 2,300 bytes per second (19.2K baud). Thus, a typical 20K program will enter Adam in about eight seconds—only about five seconds longer than a more expensive disc system. (With older audio-cassette-tape systems, you could have dinner before a program that size was entered.)

The special cassettes are not cheap. Each costs about \$10 because the tape is specifically formulated for data recording. It's been tested (certified) to be sure no dropouts (a loss of recorded signal causing a loss of data) will occur.

The heart of Adam is a Z80 microprocessor. "That makes it CP/M compatible," said Kahn. To actually use CP/M, however, you'll have to add a CP/M option, disc drives, and an 80-column display board (the standard is 36; see table) that will be available soon.

For now, the most useful software is Adam's built-in word-processing program, Smartwriter. Although I didn't get a chance to try it (the lady wouldn't let me in the glass cage), it is written to work with dedicated keys on the 75-key keyboard. Move, insert, copy text—all the things a word processor is capable of—are done at the push of a button.

Adam's BASIC program (it comes on a cassette) will accept the commands used by Apple BASIC. If you know Apple BASIC, Adam will be simple to learn. (Apple tapes and discs are not compatible with Adam, however.)

If you like games, you can try "Buck Rogers—The Planet of Zoom." It comes with Adam. You'll be able to plug in current ColecoVision game cartridges, too.

Though Adam sounds promising, there's a problem: I haven't tried a working model. (The photos you see are of inoperable prototypes.) That makes it impossible for me to tell you how well the system lives up to Coleco's promises and specifications. Adam's introduction date is slated for about 60 days from this writing—and no working models or production units seem to be available.

Atari's answer

"It's a public-relations coup, nothing more," a rather upset anonymous spokesman for Atari retorted, referring to the overwhelming attention Adam has been paid. "Did you get a chance to even touch Adam? Have you spoken to anyone who has? How good is its software? You've got to look at a competitor with respect, but we have three systems now—ready to go—at a comparable price."

Among an array of new computers, peripherals, add-ons, and software introduced at the show is The Writing System, an Atari computer-word-processing system of components for the home, priced at \$600—and it was available for me to use.

The system includes Atari's 600XL computer, AtariWriter word-processing software in a plug-in cartridge, a book on how to write, paper, and a letter-quality printer that types at 20 characters per second. (That's twice as fast as Adam's printer.) To complete the system, you'll have to add a disc drive or cassette recorder—to save or retrieve your text—and a TV. (The cassette is slow but inexpensive.)

The Atari system uses a conventional keyboard for touch-typing, but it does not have dedicated keys for word processing. Instead, special-function keys are used—their actual function depending on the software used in the machine. And besides the AtariWriter

program, the system accepts standard Atari computer cartridges. "Five hundred programs are available right now," said my Atari source, "and 2,500 are planned." (Most of those are games and educational software.)

How did Atari get the price so low? "It's simply due," said my source, "to design sophistication acquired through years in the computer business."

Unlike Adam, which uses components that work with each other only, Atari's system consists of separate parts, each of which can work with other computers and peripherals. "Our approach," says John Cavalier, president of Atari Products Co., "offers consumers the option of upgrading their computer system."

That could be an important consideration to you. But it also means a shift of emphasis for computer makers: Now they're talking about capabilities.

It appears that—finally—computers won't be promoted solely on the amount of internal memory. Instead, the bid for our cash will be based on more-important factors: price and capability. And those factors will affect home video games, home computers, even small-business computers.

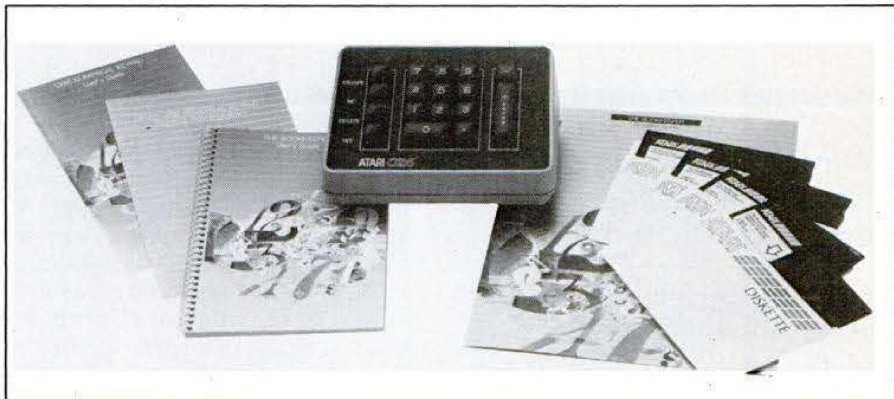
Results?

Computers have already had a devastating effect on home video games—most game makers have posted record losses, and discounts are available everywhere. Coleco and Atari have made things worse. Will games survive?

"Yes," says Coleco's Kahn. "Technology evolves; future games will be different, capable of doing things present games or computers can't." (Rumor has it, for example, that Atari has a video game in the lab that works by reading your biofeedback.)

In the interim, Coleco is offering a \$400 add-on system for its ColecoVision game: It converts the game to an Adam computer. (Other game makers offer computer add-on options; they'll be covered in a future issue of PS.)

The fiercest battles will likely be for home-computer sales, however, and



Atari word-processor package (top) uses 600XL computer, software, and letter-quality printer. A similar package is avail-

able for programming and another for games. Optional equipment includes a numerical key pad and financial software. those have begun already. Commodore, for instance, has dropped the price of its Commodore 64 (which now sells for as low as \$200) and has announced plans for a \$100 software package, called Magic Desk, that makes the system work much like Apple's \$10,000 Lisa [PS, June]. The screen shows a desk top, and you perform jobs by moving "papers" of text into or out of electronic folders and file cabinets.

Another mass maker, Mattel, has yet another twist: Buy the new four-piece Aquarius computer—console, expansion module, data recorder, and printer (not letter-quality, however)—for \$400, and the company throws in a 13-inch

able for programming and another for games. Optional equipment includes a numerical key pad and financial software.

Samsung color-TV set for \$100 more.

Additional peripherals—light pens, graphics tablets, mice, voice synthesis—are all still options, along with special software. But these prices must also drop to keep pace with the initial computer cost. I'm sure we'll see them become part of special sales to lure customers into the store.

And what of the small-business computer? Is Atari or Coleco planning a business-system package that could make even IBM scramble?

Said Atari's spokesman: "I don't think we'd like to talk about future plans." Coleco's Kahn didn't want to talk, either—he simply smiled. **PS**

SPECIFICATIONS: ATARI AND COLECO HOME COMPUTER SYSTEMS

Brand	Model	Micro-processor	Standard RAM (K)	Maximum RAM (K)	Screen (col. x lines)	Graphics resolution	Printer columns	Printer type	Sound channels	CP/M option	Programming languages
Atari	600XL	6502-C	16	64	40 x 24	320 x 192	80	Elite	4	Y	5
Coleco	Adam	Z80	80	144	36 x 24	256 x 192	80	Pica	3	Y	2