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The Evolution of the Personal Computer

The age of the personal computer has clearly arrived. While the origins of the personal computer can be variously traced to the advent of the electronic calculator, or even to the invention of the transistor (bringing forth the age of solid state electronics), the personal computer revolution can be most clearly traced to the garage of one Steve Wozniak. As an engineer and member of the Homebrew Computer Club, Woz designed a computer for home use that would be extremely flexible, able to do a great variety of tasks, and yet be truly powerful. The result was the Apple Computer.

At first sold only in kit form to electronics buffs, it was later marketed in assembled form for use by the non-programmer, who didn't understand technical jargon, but who did have a use for the power of the computer.

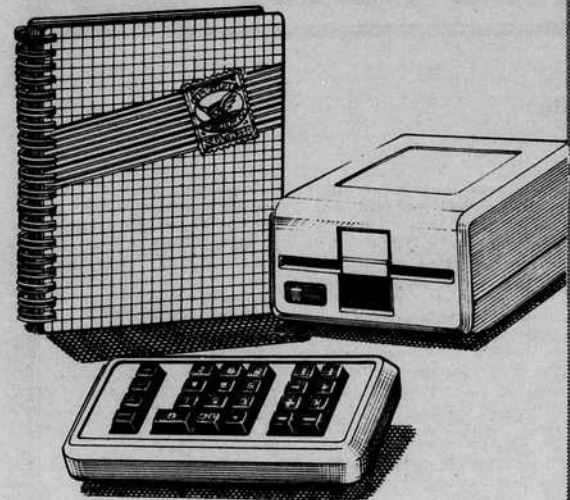
The fact that the Apple II computer is often referred to as "venerable" at the age of five exemplifies the unbelievably fast-paced change in the microcomputer industry. Ten years ago major corporations paid over \$50,000 for computer systems with fewer capabilities than the Apple that elementary school kids use everyday. Their parents use these same computers at home to keep track of finances, keep records of household items for insurance purposes, monitor investments, inventory wine cellars and even to do their work right from their homes. And of course there are the new kinds of games that so many are playing. Computers are popping up in homes for any of a hundred reasons but often it boils down to a fascination with a new toy—the latest gadget in a never ending procession of ingenious devices that seem to be possessed of some new magic.

With so many, many changes in the world of electronics and computers, it is curious that amongst the 200 or so computers now on the market, the Apple II has maintained its premier position in the world of personal computers. The prime reason is undoubtedly the inherent flexibility of the original design. This is what led the editors of *Personal Computing Magazine* to describe the Apple as having "awesome versatility." Another major reason for the Apple II's success is that over these recent years, such a large bank of software (programs) has grown out of the people's imagination, that the Apple II is "the computer that more people use to do more things than any other computer in the world."

Now, Apple has brought out its latest version of the Apple II, known as the Apple IIe—the "e" standing for enhanced. This simply means that many of the latest state-of-the-art techniques have been added to the original design. It has a larger expandable memory, more keys on the keyboard, fewer chips of a more sophisticated variety, easier access to the game port, and many other modifications which bring it in line with the latest developments in the industry. But it has also been enhanced in another more subtle way.

One major advantage to the Apple has been its eight expansion slots. These are like super sockets that let you plug special circuit boards into the computer, in effect, adding to the computers circuitry and giving it more capability. Some of these boards let you add a printer or connect a telephone, while another lets you turn your Apple into the equivalent of a \$5000 oscilloscope (a piece of electronic test equipment).

Many of the more exotic circuit boards used to require special wiring



to connect them to certain parts of the computer's circuitry not readily available through the normal expansion slots. While the results are often impressive, a technician is sometimes needed to implant the board. So Apple decided to collect as many of these special circuits as possible from all over the main circuit board, the "Mother Board," and route them through a special new kind of auxiliary slot. This means a new generation of circuit boards will be developed for this special slot, especially for color graphics and sound, at much lower prices and easier implementation.

So while Apple has its imitators trying to encroach on its huge base of software, they will have to keep trying. It always seems that when creativity is the basis for a

company's success, imitation of an early product doesn't keep up with the foresight of the creator. While some machine may have more memory at a cheaper price or a few more keys or perhaps a bigger name, owning one of these machines may turn out to be like going to a concert where the orchestra doesn't have any music.

As anyone who owns a computer will tell you, it is only as good as its software. Apple has spent more of its resources on software than any of its competitors, most of whom are depending on someone else to take up the slack.

Now that the new Apple is here, the Apple IIe, we can all enjoy enhanced computing on our old favorite.

ANNOUNCING!

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