

Imitators Are Starting to Go After Market For the Popular IBM Personal Computer

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The clones are beginning to attack what eventually could become the largest part of the personal-computer market.

Because International Business Machines Corp. dwarfs the rest of the computer makers combined, its powerful mainframe computers long have tempted imitators. In recent years, they have captured a tenth of the sales of such data processors. Now that IBM's year-old Personal Computer is proving so popular, the copiers—or IBM-compatible manufacturers, as they call themselves—are going after its market as well.

Today, Compaq Computer Corp. of Houston is planning to announce the fifth, and by some accounts the most interesting, of the IBM imitations. The Compaq computer is to be priced at \$2,995, or about \$800 less than the IBM product. It is quite portable, weighing only 28 pounds. It provides two built-in disk data-storage units, together with a keyboard and a nine-inch display screen. It runs all major IBM programs without modification.

"We think the Compaq will appeal primarily to companies who already have a large investment in IBM personal computers and the software and training for them, and who want a few portable machines for employees to take home nights or weekends or on field assignments," says Compaq President Rod Canion.

Compaq plans to sell the portable model through dealers who already carry the IBM line. "I see it as a valuable companion product to my IBMs, not as competition," says Ed Ramos, president of Futuredata, a New York retailer.

The importance, however, of machines that work like IBM's Personal Computer but aren't made by IBM goes beyond the fortunes of their manufacturers. These imitations could help would-be IBM customers save money or obtain features, such as portability, that IBM doesn't offer.

The imitations also could allow retailers who can't get the IBM product to profit from the demand for it. And, most significantly, the clones' success or failure may provide some guide to the prospects of the widely feared Japanese manufacturers, who faltered in their first venture into the U.S. personal-computer market but are preparing another foray, this time with IBM-like machines.

The market in Japan for personal computers is growing so rapidly that most Japanese manufacturers aren't able to meet local demand and don't plan to seriously go after the American market until well into next year. But they are developing computers that will run at least some IBM programs hoping to avoid the inadequate software and confusing instruction manuals that have been such a handicap to date.

"IBM compatibility is absolutely necessary for companies getting into the personal-computer market," says Ed Faber, president of ComputerLand, the nation's largest group of franchised computer retailers. "There's no doubt that the Japanese

machines will take this route. The only question is how far they'll go beyond it."

Several U.S. companies already are prospering with imitations of such well-known personal computers as those made by Apple Computer Inc. and Tandy Corp. Only a year ago, for example, Franklin Computer Corp. of Pennsauken, N.J., introduced an Apple clone, the Ace. Today the company is selling about 1,500 Aces a month. That's less than 1% of what Apple itself sells, but it amounts to about \$27 million in annual retail sales. "The market has really been a lot better than we expected," says Jan Wright, Franklin's advertising manager.

Columbia Data Products Inc., of Columbia, Md., expects to do equally well with its IBM imitation, the Multi-Personal Computer. "IBM cannot meet the demand for its Personal Computer and people aren't going to wait," says Jack Horner, a company manager.

IBM clones could be even more significant than Apple or Tandy copies because most of the independent software compa-

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nies, which develop the bulk of the preferred personal-computer programs, are concentrating on writing IBM programs. That emphasis practically guarantees that major new software will first become available for the IBM. To have any hope of offering it, other brands of computer will need some IBM compatibility.

But compatibility is a complex issue, and one that seems certain to confuse personal-computer buyers.

Many of the new personal computers, particularly those from Japan, are being built around the microprocessor used in the IBM product, the Intel Corp. 8088, and the closely related 8086. In addition, several dozen companies have licensed the principal language and operating system, or house-keeping program, that IBM uses, Microsoft Basic and MS-DOS by Microsoft of Bellevue, Wash.

Few of those computers, however, can run IBM programs without modification because of what might seem to be minor differences in the data-storage attachments, keyboards, video circuits or BIOS. The BIOS, or Basic Input-Output System, is a program that adapts a standard operating system, such as MS-DOS, to the electronic

idiosyncrasies of a given brand of machine.

No practical machine could be completely IBM-compatible without duplicating the IBM computer, an action that would violate copyright and patent laws.

Thus, the term "fully compatible" usually refers to a computer that attachments and improvements designed for the IBM will fit. Such a computer also would enable a user to buy an IBM program and run it on the look-alike machine merely by following the instructions and video-screen diagrams in the manual.

Few of the new computers that are often described as IBM-compatible fully meet such a test. For example, the recently announced DOT computer from Computer Devices Inc. of Burlington, Mass., stores its programs and data on magnetic disks that are only three inches in diameter. Thus the DOT cannot directly use IBM programs, which are on five-inch disks. Dynalogic InfoTech Corp. of Ottawa, Canada, has used a different keyboard and video-display system for its IBM clone, the Hyperion. Datamac Computer Systems Inc. of Sunnyvale, Calif., relies on a different microprocessor for its series 1600.

At the Japan electronics show in Tokyo, which ended on Monday, six major Japanese companies displayed IBM-compatible personal computers. However, the Intel 8088 microprocessor isn't used in three of them—the Hitachi Ltd., Mitsubishi Electric Corp. and Nippon Electric Co. computers—and that reduces their compatibility. Matsushita Electric Industrial Co., Sanyo Electric Co. and Toshiba Corp. all use the 8088 as well as the IBM languages and operating system.

Sanyo, however, which plans to sell its MBC-55 in the U.S. starting next summer for about \$1,000, says the computer won't run such important programs as IBM VisiCalc, a popular program for financial modeling. Matsushita, which plans to begin selling its JB-3000 in the U.S. under the Panasonic brand next spring, says it will give buyers a special utility program for converting IBM programs to run on its computer. Toshiba says it intends to rely primarily on programs of its own for the Pansopia 16.

Even compatibility isn't enough, however, retailers and computer makers agree. Datamac, for example, believes its look-alike is far superior to the original, but doesn't plan to compete directly with IBM, concentrating instead on large customers, such as companies that already own many personal computers. "We make a better machine," says Sam Goodman, Datamac's executive vice president, "but even that's not enough to compete at the retail level with IBM."

Adds Mr. Faber of ComputerLand, "The new machines will have to run IBM software, and then offer some considerable advantage just to offset the halo effect of the IBM name. You cannot just come out with an IBM copy and expect to get a major market share."