

# IBM PC vs. Rainbow: Making a Choice

*If you've narrowed your personal computer shopping list down to IBM and DEC, how do you solve the dilemma?*

by Ira Kalb

Selecting your first computer can be a very tough and agonizing process. It's even made tougher by the fact that there is a lot of confusion in the marketplace. This confusion stems from the fact that most people buying don't know what they're buying and most people selling don't know what they're selling. In addition, there are so many alternatives to choose from that even the sophisticated buyer gets dizzy looking for the best choice.

As an industry OEM, Compal's Systems Division is continually faced with the same confusing choices as the first-time buyer. Since we at Compal most recently went through this process and selected the Digital Rainbow over IBM and all the others, prospective buyers might be interested in why we made this choice.

With so many microcomputers on the market, why do I consider the choice right now to be between IBM and Digital? Because IBM and Digital are the only two that will clearly survive the current shake-out that is going on in the industry. Others will also survive with competitive products, but it is not clear right now who they are. Last year's favorites — TI, Osborne, and Fortune — have not experienced an easy time this year. The next level down — Apple, Commodore and Atari — are engaged in mortal combat in which there may not be any survivors. If there are, I think the IBM Peanut will likely finish them off.

Some may say that the new Apple Lisa should not be classified in the next level down. Everyone's entitled to his opinion. Most who have looked closely at the Lisa say it is very slow and overpriced. With these drawbacks and its inability to use industry standard software (CP/M or MS-DOS), who would select Lisa if they could get a Digital Rainbow or an IBM PC with similar features via Visicorp's Visi-On software, Lotus 1-2-3, and others for a lot less money?

Why are the Rainbow and the PC the systems in contention? Simply stated, they are the only models in Digital's and IBM's line that are compatible with a wide array of software. Since software gives the computer its ability to do what you want it to do, the software compatibility feature is the overriding reason for selecting these models.

## Rainbow has the Software Edge

If you are a first-time buyer or someone new to the computer industry, you might get the impression that the IBM PC has the most software available of any of the small computers. From personal experience this is not true. When you challenge someone on this point, they shift their position to "there will be a lot of software" on the IBM PC. This is undoubtedly true, but there is much more software for the Rainbow. Why? Because Digital smartly offers the CP/M 86/80 operating system as standard on the Rainbow system.

There are many thousands of good to excellent, field-tested software packages that have been optimized for this operating system. The words *field-tested* and *optimized* are very important here. The MS-DOS operating system, which is standard on the IBM PC, has been on the market for less than two years. As a result, much software that runs under this operating system has been translated from CP/M or has been newly programmed. Translated software runs less efficiently than software that has been programmed for a particular operating system. Furthermore, most of the newly developed software is too new to have all the bugs worked out. With CP/86, an option on the IBM PC but included as part of Digital's CP/M 86/80 operating system, most of the software is again translated from CP/M-80 or newly programmed, so the bug problems can still be a factor.

In addition to currently having more good, field-tested software, the Rainbow will be able to take advantage of the "there will be's" as well, since Digital offers the MS-DOS operating system as an option on the Rainbow. This means that buyers of the Rainbow will be able to run the good software that is developed for the IBM PC as well as the many thousands of good CP/M packages that have been developed by hundreds of different companies for a wide variety of computers.

Related to the software issue is that of the computer chip, or brain, used in the two systems. IBM includes the 16-bit 8088 processor in the IBM PC, and Digital gives you both a 16-bit 8088 and an 8-bit Z-80. The advantage of the Digital approach is that most proven CP/M soft-

ware runs on the 8-bit Z-80. IBM fans may argue that you can get a Baby Blue card that can give you the 8-bit Z-80 capability for the IBM PC. This is true but, this card is from a third party, and third-party hardware can void your IBM warranty. It can also create a variety of service and other classical multiple-vendor fingerprinting problems.

When IBM first came out with the PC, the basic system only had one disk drive of 160 Kbytes. A drive of this size is inadequate for most accounting and other serious business applications. IBM now offers double-sided 320-Kbyte drives — a big improvement, but no match for Digital's dual 400-Kbyte drives that are standard with each system.

With regard to the hard disk, IBM has had a big jump on Digital with the IBM PC XT. However, Digital is soon coming out with a 10-Mbyte Winchester-style drive for the Rainbow. The significant advantage of the Digital offering is that it will still have two 400-Kbyte floppies in the same package to IBM's one 320-Kbyte floppy. The Digital advantage here is not only in facilitating the backing-up of data from the hard disk; it is also the ability to easily make copies of floppy disks. Those who have tried this on a one-floppy hard disk system know, it's a pain to first copy floppy data to the hard disk and then move it back to the floppy when you want to make a copy.

### The Keys to Success

With regard to the differences in keyboards, there is no contest. Many have complained about the confusing layout of the IBM PC keyboard. The most annoying aspect of this keyboard is the unorthodox location of the Shift key on the left side. In contrast, the Digital keyboard has received almost universal praise for its layout and styling. The typewriter keys are where they should be, the function keypad is very logically and conveniently laid out, and there are a lot of user or programmer-definable function keys to facilitate typing and data entry.

Both screens are well-designed, but the Digital again takes the edge. The user can select either 80 or 132 columns of display on the Rainbow, and can switch between the two in the middle of a program. In addition, the screen can tilt to virtually any angle desired. While the Rainbow screen comes standard with black and white (and you can vary the background from black to white if you wish), you can select green or amber as options. With the IBM PC, your only choice is a rigid 80-column green screen. Personally I prefer black and white. Many green screens *run*, I am told, because they have been optimized for 50Hz, the European frequency. At 60Hz, the American frequency, they have a tendency to *run* or blur.



DEC Rainbow 100.

If you were to compare labels, the edge clearly goes to IBM. Having sold an excellent typewriter for many years and becoming a giant in the large computer field has given IBM a name that is known to first-time computer buyers. IBM's marketing and outstanding institutional advertising gives the company a big lead over everyone else in the computer field. Yet, IBM has never had the best or most up-to-date or most cost-effective product. Marketing and the company's name have done the trick.

Digital has an excellent reputation inside the computer industry. The problem is the company has never before sold directly to first-time users. Consequently, Digital is not a household name, and marketing efforts have fallen far short of IBM. For those first-time users who look beyond labels and initial name recognition, Digital is as solid as IBM or anyone. For those more confused buyers (the majority of the market), Digital needs to get the word out.

While IBM gives the illusion of providing the first-time buyer with a security blanket, it actually may be one of the least secure choices. The reason is that IBM has introduced many small computers and word processors

over the past seven years that have not been compatible or upgradeable to the next model. Furthermore, since these models have been introduced at about 18-month intervals, software developers have not been able to develop much competent software for these systems. Witness the IBM 5100, 5110, 5120, D-23, Displaywriter, PC, PC XT, and the new one that is supposed to come out soon (code name: Popcorn). This policy of making non-compatible model changes every 18 months or so has virtually the same effect as if the manufacturer went out of business. Therefore, the sense of security that people think they are getting from IBM can often be a false one.

Because of the volumes of PCs that have been sold, the software issue on the PC may be different. However, the announcement that Popcorn will use a different operating system entirely leads us to believe that it will *not* be very compatible with the PC or PC XT. Of course, all those secure users can always upgrade. The only problem is that with IBM, an upgrade is usually a code word for having to buy the new system at close to list price.

Digital, on the other hand, seems to go out of its way to offer compatibility to the existing users. Ever hear of

the PDP-8? Not only is it 25 years old; it is still being used in the new DECmate II. We're hoping that upgrades to the Rainbow will follow this pattern of compatibility. All indications are that they will.

### Does Number 2 Really Try Harder?

With IBM, we always get the feeling that nobody is willing to listen to what we have to say. Never mind that Compal has been listening to the needs of first-time computer users in the microcomputer business market for over seven years. IBM has its own ideas, and the company wants to do it its way. People in the market (end-users and software developers) have to be able to tell the manufacturer what it wants and what it needs. Demand for the product in the short run is not always the best form of communication — especially when many sellers don't know what they're selling and many of the buyers don't know what they're buying.

With Digital, we get the feeling that someone is willing to listen. Yes, the company has its own huge bureaucracy; and yes, you often have to shout to be heard, but you get the impression that you are talking with real people, and that they are listening to what you are saying.

After all, Digital put two processors in the Rainbow, including that ever-important Z-80, and the CP/M 86/80 operating system was offered as the standard on the Rainbow. The vast CP/M market gave Digital that message and the company listened. IBM ignored this signal completely — going to Microsoft for the MS-DOS operating system. There is much other evidence to support the claim that Digital is the better listener, including the amount of disk storage offered and the layout of the keyboard.

This willingness to listen to the marketplace combined with the superiority of Rainbow over the IBM PC indicates to us that the Rainbow is the current best choice for a personal computer to be used for business or other serious purposes.

Why then has IBM done so much better than Digital to date? The answer is simple and in two parts: (1) IBM's name identification and (2) Digital's entering the market a year after IBM.

While, it's popular for the media and the industry analysts who are great at 20/20 hindsight to predict that IBM's lead is insurmountable, I recall the story of *The Hare and the Tortoise* and believe that the tortoise can still win the race, or at least come in a close second.

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*IBM Personal Computer.*

