PERSONAL COMPUTERS

A Future Role for the Videodisk

By ERIK SANDBERG-DIMENT

Chances are the personal computer will become an essential facet of future home life — but not necessarily in the way many computer buffs currently envision it. The computer could have powerful consequences for doing business or school work at home, of course. Financial programs like those involving the stock and commodity markets are apt to become even bigger hits than they are now, especially with serious investors, who can take advantage of the many time-saving benefits such software offers.

Word processing certainly seems to offer an exciting opportunity. But the truth is that the vast majority of the population probably haven't written more than a dozen letters a year since the installation of their telephones. Word processing for personal use — students excepted — really doesn't offer those people much.

As to the handy software designed to sort and store your recipes, would you really spend the weeks needed to enter the data from, say, "Joy of Cooking" into your computer?

Checkbook balancing, budgeting and other such computerized family-finance fiascoes will also no doubt be shelved by most people once their novelty wears off.

So what possible use is there for a home computer if you don't do work at home and don't write and aren't a student? Computer games as they become increasingly sophisticated may save the home computer from becoming an electronic lemon for those who have no other reasonable use for them. The home computer may be destined to become the nerve center of the electronic entertainment room.

It can do that especially well, it seems to me, if it joins up with another heralded consumer commodity that until recently appeared headed toward the great discard yard already inhabited by radio scanners and CB radios. I'm speaking now of the videodisk recorder. The recorder, instead of being used for video pictures, could someday soon be employed to store digital computer data and — what else? — play games.

This marriage of computer and video came to me recently in a flight of fancy. Then I was startled to learn that the concept has gone well beyond fantasy among researchers who are developing working systems, albeit crude ones.

Video cassette recorders, or VCR's,

have more or less trampled videodisks to death in the marketplace, for one simple reason. You can copy programs off your television onto the blank tapes. You cannot do that with videodisks. Yet the very fact that copies cannot readily be made from a videodisk contributes a great deal to its potential popularity with software firms, which are plagued at the moment by pirates making illegal copies.

ANOTHER advantage videodisks have over video tapes for software is quick memory retrieval. Called upon to use information at the beginning, then at the end, then again at the beginning of a series of data, a computer using tape must wait while the tape is spooled back and forth in a very time-consuming process. With videodisks it is possible to pick up information quickly from any part of the disk in any sequence.

The amount of information a single videodisk can hold is truly staggering. A videodisk can store two gigabytes on a side, for a total of four gigabytes, or four billion characters. This is equivalent to the storage capacity of roughly 5,000 of those familiar little double-density floppy disks standard with today's personal computers, or the equivalent of 500,000 pages of text.

But because videodisks were originally designed to hold images, the real breakthrough in the permutation of the personal computer and the videodisk lies in the visual realm. A demonstration of the image-handling terminal resulting from their joinder can be seen at Disney's Epcot Center in Florida. The display uses a touch screen to carry the operator along. Touch one of the selections listed on the video screen, and the appropriate images are called up in any sequence you de-

sire. At Epcot, you can even create your own roller coaster on screen, with you yourself controlling the course of the visual ride.

A more complex coupling of video images and actions in the real world has been developed by Dr. Myron Krueger of the University of Connecticut and is chronicled in his book "Artificial Reality." Using several high-speed computers, he has created a playful graphic creature that darts around your image on the video screen, at times hiding behind your back and responding to all your movements as picked up by the computer system via a video camera.

Take this process a few steps further and you have the personal computer game room of the future. You stand surrounded by four small video cameras hooked up to feed their received images to your computer. A video recorder with a disk of "Star Raiders," "Murder in the Mansion" or whichever other game you select is also connected to the computer. As the game, say "Murder in the Mansion," begins, the image of an old Tudor house on a hill appears on the video projection screen, occupying the entire wall opposite you. A camera switches on as you start walking in place. Suddenly you appear walking on the road leading to the mansion.

The computer has taken the camera's image of you, masked out the background, overlaid it onto the frames from the disk and synchronized two representations so that they are one. You notice a wallet dropped on the ground. Stooping, you grasp at the floor; your video doppelgänger reaches into the grass. As you see yourself touch the wallet, you pick it up. A shot rings out in the mansion. You hurry on up the road, no longer playing a game, but living it.