The Right Stuff

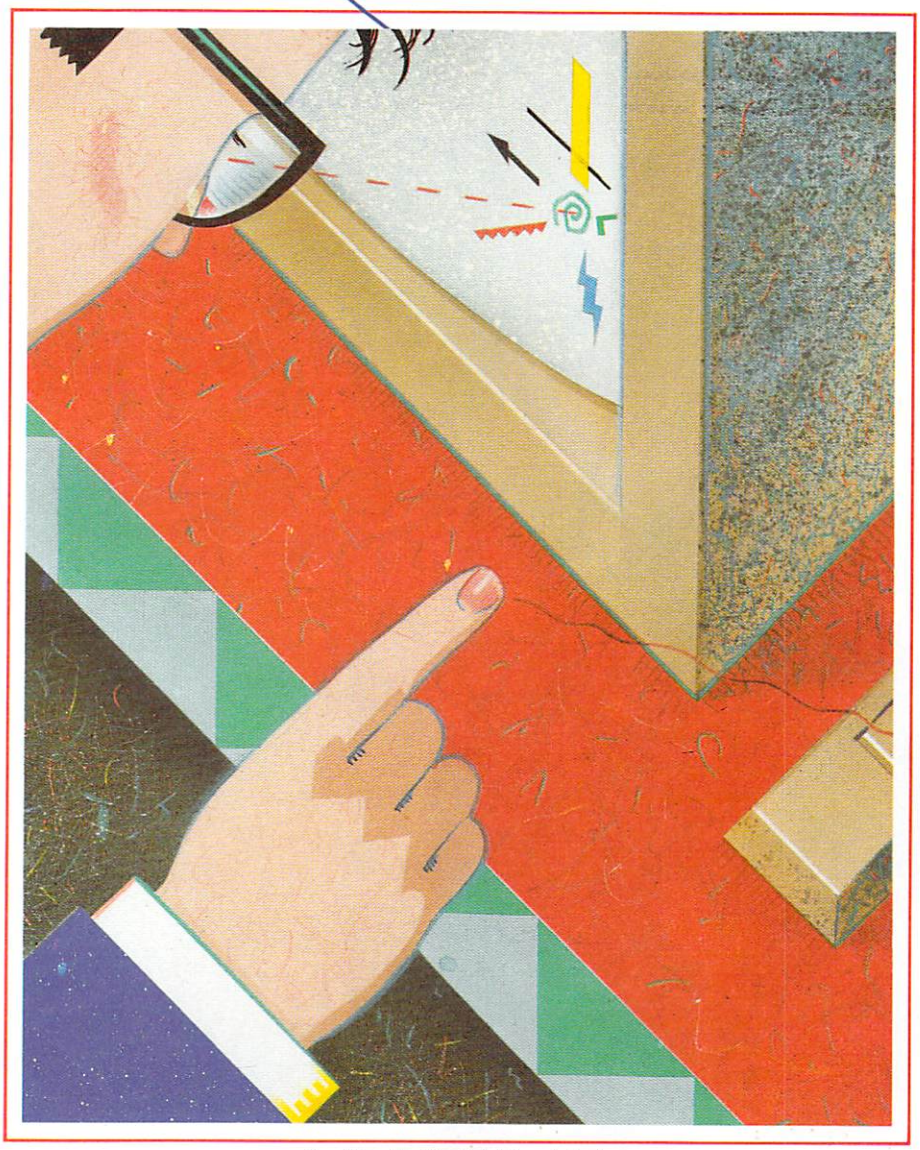
The Amiga In the Marketplace

By Douglas Watt

Given the turmoil in the microcomputer market, in which even a giant like Apple is in some serious trouble and many lesser firms are simply folding, one might wonder about the wisdom behind Commodore's decision to release a 32-bit microcomputer into a section of the market that is currently in upheaval and embroiled in fierce competition. One might also legitimately wonder whether any "high-end" microcomputer, including even the Macintosh, can be a success in the business or even the home environment if it bucks the growing MS-DOS software base. Well, in this writer's opinion, a

Large Addressable Memory

Illustrations by Steven Lyons



Graphics-Supported User Interface

◄ more careful look at trends in the marketplace plus a close look at the Amiga and its competition suggests that Commodore's decision may have come at the most opportune moment possible.

Being Peerless

First things first—there is *no* competition for the Amiga in terms of its hardware capabilities in its price range, or even at twice its price. It has, simply, the best graphics this side of CAD stations, and for a fraction of the cost. Its graphics capabilities run circles around both the IBM PC and the AT, which are stuck with the same basic graphics package as the PC for maximum compatibility. The Amiga's graphics are even superior to machines such as the Tandy 2000, which cannot run much standard off-the-shelf MS-DOS software due to screen management differences between it and the IBM PC.

Forget about comparing the Amiga's sound capabilities with any of the MS-DOS machines—there is even a greater contrast here than on the question of graphics. Even the Commodore 64 with its fine SID chip has far better sound capabilities than any of the MS-DOS machines or anything made by Apple, and the Amiga's capabilities are a giant step up from the 64's.

Mac Attack

The Amiga has been called a color Macintosh, but this statement is misleading since the Amiga has many capabilities that the Mac doesn't—capabilities that were in some sense "designed out" of the Macintosh. First of all, Commodore did not make the serious design error that Apple made in failing to provide the Motorola 68000 CPU with much support. (The Amiga and Mac both use this chip.) In the Mac, the CPU is forced to handle virtually all of the screen graphics chores and I/O operations, slowing the machine down significantly (one reason why the disk drive for the machine is so slow and why Mac owners spend a lot of time watching the wristwatch icon). Such is not the case with the Amiga. With its use of co-processors, it is many times faster, plus its drive holds more than twice that of the Mac's.

Undercurrents

Although the marketplace, to the casual observer, might look saturated at this point, it would be more accurate to view it as "soft." Some signs imply that pockets of potentially intense demand are waiting to be tapped if manufacturers can convince consumers to buy now rather than wait. A brief review of some of the most significant developments over the past two years suggests that the Amiga *is* in the right place at the right time with the right capabilities. Let's look briefly at some of these trends:

► *The demand for large addressable memory.* Although CP/M is not totally dead, it clearly is not going to be a popular operating system, and virtually nothing new is being written for it. There is probably one basic overriding reason for this: CP/M could not readily run Lotus 1-2-3 due to the limitations in addressable memory of the Z-80. This, and not speed, is the big advantage that the 8088 family has over the Z-80. (Many Z-80B machines are in fact faster than the IBM PC.)

The trend towards increasingly complex integrated business software has meant that 8-bit computers (at least outside the home) are going to be left behind, since they are forced to use the cumbersome process of bank switching in order to address more than 64K. Bank switching introduces new problems, such as the issue of a standard for the addressing of the two (or more) banks. Interestingly, the 640K RAM memory limit of the 8088 family, which several years ago seemed astronomical, is now being filled by some programs and applications, and Intel and Lotus have combined to develop a new hardware/software package

(Above Board) to extend the addressable memory of the PC family to two megabytes. The Amiga can address 8.5 megabytes without any such add-ons, so it is clearly in the right place on this issue.

► *The demand for a visually-oriented, graphics-supported user interface.* The efforts to develop programs such as IBM's Topview and Digital Research's GEM illustrate that even within the world of MS-DOS, there is dissatisfaction with the distinctly unfriendly user interface of MS-DOS, with its rather barren ">" prompt. MS-DOS (like CP/M) demands that the user master esoteric and difficult DOS commands to perform common functions such as copying files. Obviously, the impact of the Macintosh (derived from Xerox's Star system) has set the tone here. It would seem that in this area (i.e., the market's growing demand for a visually-oriented user interface supported by bit-mapped graphics), that the Amiga is, again, in the right place at the right time with the right stuff.

► *The success of open-architecture machines.* The success of the Apple II family and of the IBM PC can be traced in part to their open architecture—meaning that there is an open processor bus in the machine so that additional boards can be added—allowing for relative ease of installation for hard disk drives, co-processor boards, RAM expansion and other multifunction boards. The sales of the closed-architecture Apple IIc have not lived up to Apple's expectations, while sales of the IIe, with its open architecture, have continued to be strong and have not been hurt significantly by the sales of the IIc.

A general consensus is growing that the Macintosh has been hurt by its closed architecture. It is a strong plus for the Amiga that its open architecture will allow for special co-processors, including MS-DOS emulation and even CP/M and C-64 emulator boards, so that users can immediately access these existing software bases as well as the more sophisticated software that will take fuller advantage of the Amiga's superior capabilities. This open architecture will also allow for both the future expansion of the Amiga and the active involvement of third-party developers, guaranteeing good support for the machine.

► *Hardware/software symbiosis.* There is clearly a very powerful synergistic relationship between hardware capabilities, hardware sales and software support. The huge existing base of MS-DOS software practically guarantees the continued success of the IBM PC and the PC AT, even if significantly better hardware capabilities are available elsewhere for less money (which, until the Amiga's introduction, wasn't the case). New, truly innovative hardware offering unusually great capability in a given price range (or that undercuts the competition in price) is likely to sell well enough to encourage third-party software writers to turn their attention to the machine.

Open Architecture Machines

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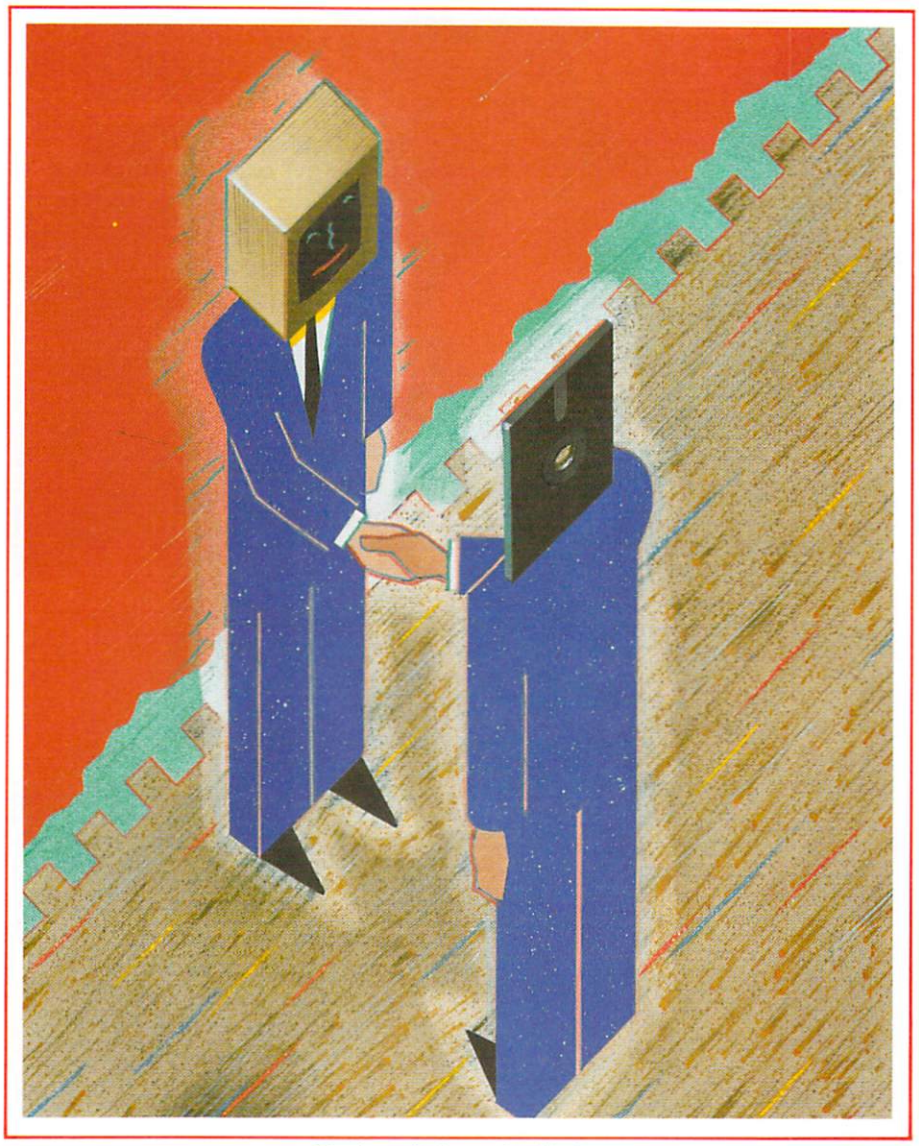

Hardware/Software Symbiosis

No competition exists for the Amiga in terms of its hardware capabilities in its price range, or even at twice its price.

This is exactly what happened with the Commodore 64/Atari 800 competition. The Atari initially had a better software base, but as Commodore consistently undercut Atari in a price war during a crucial 18-month period, first-rate software became more and more plentiful for the 64. Currently, there is better software support for the 64 than the Atari, which many companies are now reluctant to write for due to the company's (and therefore the machine's) uncertain future.

The unique hardware capabilities of the Amiga should ensure strong initial sales of the machine, and such sales produce good software support. Indications are that Commodore has learned from past mistakes in dealing with third parties, and that software developers for the Amiga are being given every consideration and meaningful support. Thus, the hardware sales/software development "snowball" should start rolling downhill and pick up speed and momentum quickly.

Futurology

The question of what will happen to personal computing through the late 80s and early 1990s is certainly open to much speculation, but there are indications that the following are going to be big factors:

1. Businesses and home users will want to routinely access mainframes and minicomputers with micros through telecommunications and local area networks (LANs). This will lead to increased use of large databases by the so-called "power users" (businesses with large data processing demands) and a growing integration-of-information power at the hands of the consumer. It will demand good terminal emulation software, as well as multitasking capabilities, both of which will be a breeze for the Amiga.

2. In the home, there will be a trend towards the integration of entertainment systems and data processing systems, particularly around their joint access to laser disks that could be used as ROM or even as mass storage devices for the computer, as well as for storing audio/video entertainment material. In this area, the Amiga's ability to mix incoming analog video signals with computer-generated digital video material will place it far ahead of the competition, and, along with its sound capabilities and sprites, will make it the greatest entertainment computer ever.

3. Low-cost, high-quality dot matrix print will be a standard. New printers using 24-pin printheads have already taken a real bite out of the daisy wheel printer market, and will make it possible to do both hi-res graphics printouts and true letter-quality (not correspondence-quality) text on the same page. This new generation of dot matrix printers will take good advantage of the Amiga's bit-mapped graphics capabilities.

Therefore . . .

After adding all this up, my advice is: If you don't get an Amiga, you might as well at least buy stock in Commodore. Point for point, the Amiga, especially once a large software base exists for it, will leave other micros in the technological dust.

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