

The worst-selling Microsoft software product of all time: OS/2 for the Mach 20

 devblogs.microsoft.com/oldnewthing/20221226-00

December 26, 2022



Raymond Chen

In the mid-1980's, Microsoft produced an expansion card for the IBM PC and PC XT, known as the Mach 10. In addition to occupying an expansion slot, it also replaced your CPU: You unplugged your old and busted 4.77 MHz 8088 CPU and plugged into the now-empty socket a special adapter that led via a ribbon cable back to the Mach 10 card. On the Mach 10 card was the new hotness: A 9.54 MHz 8086 CPU. This gave you a 2× performance upgrade for a lot less money than an IBM PC AT. The Mach 10 also came with a mouse port, so you could add a mouse without having to burn an additional expansion slot.

Sidebar: The product name was stylized as MACH in some product literature.

The Mach 10 was a flop.

Undaunted, Microsoft partnered with a company called Portable Computer Support Group to produce the Mach 20, released in 1987. You probably remember the Portable Computer Support Group for their disk cache software called Lightning.

The Mach 20 took the same basic idea as the Mach 10, but to the next level: As before, you unplugged your old 4.77 MHz 8088 CPU and replaced it with an adapter that led via ribbon cable to the Mach 20 card, which you plugged into an expansion slot. This time, the Mach 20 had an 8 MHz 80286 CPU, so you were really cooking with gas now. And, like the Mach 10, it had a mouse port built in. According to a review in Info World, it retailed for \$495.

The Mach 20 itself had room for expansion: it had an empty socket for an 80287 floating point coprocessor. One daughterboard was the Mach 20 Memory Plus Expanded Memory Option, which gave you an astonishing 3.5 megabytes of RAM, and it was high-speed RAM since it wasn't bottlenecked by the ISA bus on the main motherboard. The other daughterboard was the Mach 20 Disk Plus, which lets you connect 5¹/₄ or 3¹/₂ floppy drives.

A key detail is that all these expansions connected directly to the main Mach 20 board, so that they didn't consume a precious expansion slot. The IBM PC came with five expansion slots, and they were in high demand. You needed one for the hard drive controller, one for

the floppy drive controller, one for the video card, one for the printer parallel port, one for the mouse. Oh no, you ran out of slots, and you haven't even gotten to installing a network card or expansion RAM yet! You could try to do some consolidation by buying so-called *multifunction cards*, but still, the expansion card crunch was real.

But why go to all this trouble to upgrade your IBM PC to something roughly equivalent to an IBM PC AT? Why not just buy an IBM PC AT in the first place? Who would be interested in this niche upgrade product?

Well, for one thing, at \$495, the Mach 20 card cost a lot less than a new IBM PC AT, which would set you back \$4000. You don't get to plug new AT-style peripherals into your modded XT, and the video card is still a piece of junk, but if you're just using it for number-crunching, the CPU performance is really what you're after.

This bias toward upgrading an old computer to a pale imitation of a more advanced computer was exacerbated by tax laws and generally-accepted accounting principles.

During this era, technology was advancing far faster than the accounting industry could keep up. Computers were classified as office equipment, which at the time had a seven-year depreciation schedule. But computers were improving so rapidly that a seven-year-old computer was beyond obsolete. Companies needed to upgrade their computers, but their accountants wouldn't let them just throw out the old ones since they still had several years of depreciation left and consequently had no budget for buying new computers. "The government says that these have to last seven years, so by golly, you're going to make them last seven years!"

These upgrade cards were much less expensive than a new computer and could be more easily hidden inside your office equipment budget, thereby avoiding a lot of arguments with accountants.

The Mach 20 sold better than the Mach 10, but then again, that's not saying much.

Okay, that was a very long set-up for the actual story. Because I'm not here to ridicule the lackluster sales of the Mach 20 hardware. I'm here to ridicule the lackluster sales of the Mach 20 *software*.

The Mach 20 allowed you to run Windows 2.0 in standard mode, which took advantage of the 80286 processor and expanded memory.

Microsoft also produced a customized version of OS/2 for the Mach 20. Despite being tailor-made for the Mach 20, it still had terrible performance problems.

One of my former colleagues spoke with the person who took over from him as the support specialist for OS/2 for Mach 20. According to that person's memory (which given the amount time that has elapsed, means that we should basically be saying "according to legend" at this

point), a total of eleven copies of “OS/2 for Mach 20” were ever sold, and eight of them were returned.

That leaves three customers who purchased a copy and didn’t return it. And the support specialist had personally spoken with two of them.

If these numbers are accurate, I believe this makes OS/2 for Mach 20 a strong candidate for being the worst-selling actually-shipped Microsoft software product of all time.¹

Bonus chatter: The leader in the “expansion card to give your IBM PC new life” product category was the Orchid Tiny Turbo 286, which you could find for around \$300 if you shopped around. Some time later, Intel joined the fray with the Inboard/386, which let you upgrade your IBM PC, PC XT, or PC AT to an 80386 processor. The Inboard/386 took even more advantage of the tax accounting mismatch between depreciation schedule and practical lifetime.

Bonus reading: [We got around three.](#)

¹ If you’re one of those retro-computing archivists, I guess this poses an extraordinary challenge even greater than [possessing a Tandy Video Information System](#): Can you track down one of the three remaining copies of OS/2 for Mach 20?

[Raymond Chen](#)

Follow

