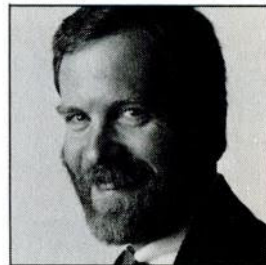■ **WILLIAM F. ZACHMANN**

IBM AT WAR WITH THE WORLD

IBM thought it could eliminate competition by introducing the Micro Channel architecture. The creators of the EISA bus don't agree.

The Great Bus War between the Micro Channel architecture (MCA) from IBM and the Extended Industry Standard Architecture (EISA) from everybody else is likely to be the single most important hardware conflict of 1989. The battle really is over who controls future standards for the most widely used personal computers in the world.

It all started with IBM's attempt to solve a serious problem it was having with personal computers: competition. The Micro Channel architecture was, first and foremost, IBM's attempt to eliminate as much competition as possible from other vendors of personal computers built around the dominant Intel microprocessor architecture.

The problem has three causes. The first is that IBM corporate management failed to understand, at the start of the 1980s, just how important personal computers were going to be by the end of the decade.

Second, as a result of this, the company entrusted the development of the original IBM Personal Computer (introduced in 1981) to what was—for IBM at least—a highly independent business unit in Boca Raton, Florida. There, relatively unencumbered by the bureaucracy normally surrounding future product planning at IBM, the IBM PC, XT, and AT were born.

The third aspect of the problem is that IBM's Don Estridge and his developers in Boca Raton emulated much of the best work being done by independent entrepreneurs at the time and thus built the most open system ever to receive an IBM label.

Its freely available specifications made it easy for other vendors to develop software, add-in boards, and peripherals for it—and it also made it easy for others to build entire systems that would be compatible with it.

FAILURE UNDER FIRE   The result, by 1986, was that hundreds of vendors all over the world were selling PCs that were effectively compatible with IBM's PC, XT, and AT systems, and IBM's market share was declining. IBM was losing out to compatible competitors. That would have been bad enough even if personal computers had remained the "toy" market IBM management seemed originally to have thought them to be. The situation was much worse given that PCs were becoming a fundamental part of corporate information systems.

In retrospect, it's hardly surprising that IBM suffered losses when faced with direct competition. IBM was accustomed to the very limited competition among traditional, proprietary-architecture-based mainframe and minicomputer systems of the past, not to the open competition among increasingly standardized, commodity-like microprocessor-based systems of the future.

IBM was never really aggressive on pricing. You don't need to be when you have dominant market share in a market that has very limited competition and therefore permits you to engage in almost monopolistic pricing practices.

IBM was never really aggressive when it came to innovation, either. You don't need to be when, because of the lock-in between the software and the training investment of your customers, they really have no place else to go.

So when IBM was faced with hoardes of competitors offering personal computers that were much more aggressively priced or much more innovative than IBM's, Big Blue had a very difficult time responding adequately. The company just wasn't used to real competition.

Consider the almost-forgotten humiliation IBM suffered when it tried to regain territory lost to Compaq's innovative (for its time) transportable system. Except for the hapless members of the entering class at the Harvard Business School who were ordered to buy them, hardly anyone bought IBM's luggable units. Quite simply, they weren't as good as the competitive product.

By mid-decade it was becoming evident that if IBM had to compete on a level play-
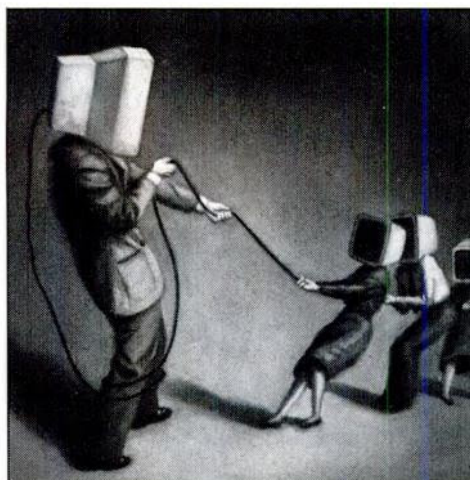
■ **WILLIAM F. ZACHMANN**

ing field with everybody else, it was probably going to lose. Even though some of the compatible vendors didn't make it, others quickly moved in to take their place. IBM's total market share was sinking. Its workstation-category revenues, of which personal computers are the major part, actually declined more than a billion dollars between 1985 and 1986 and have yet to recover more than a fraction of that loss.

THE SECRET WEAPON Unable to compete effectively, IBM chose to fight back in another manner. It set out to eliminate competition. The IBM Micro Channel architecture was to have been the major weapon. Incompatible with the AT standard and protected by a bevy of "intellectual property rights" in the form of patents (and an army of lawyers to enforce them), the MCA was supposed to be the weapon to slay competitors—or at least beat them into submission.

IBM's Micro Channel architecture was meant to become the new industry standard—but a "standard" that was proprietary to IBM. From the start, IBM intended to use its patents as a way to prevent other vendors from building MCA-compatible systems, or at least to control their ability to do so, protecting its own pricing or market share by making the others pay substantial royalties.

The problem was that IBM neglected to build into the MCA anything that anybody really needed. The MCA offered no significant functional capabilities or performance advantages over the AT design: MCA bus systems performed no better than AT bus systems with comparable clock speeds and disk drives. At best, IBM could weakly claim potential advantages due to the MCA's 32-bit data path or its multimaster capabilities.

With the introduction of the Extended Industry Standard Architecture last fall, however, IBM's competitors were able to promise all the still-hypothetical advantages of the MCA and more. The EISA specification not only has the same technical advantages, but it also offers strict upward compatibility with existing AT-bus-standard cards.

As EISA starts to deliver on that promise in 1989, the ultimate battle between IBM and its competitors will be waged. Given how badly things have gone for IBM thus far, it is hard to see how EISA can fail to make things even worse for the company. For users, however, EISA promises to be a real standard that will enhance competition and accelerate innovation. Perhaps it will also finally convince IBM management that it is more worthwhile to compete effectively than to eliminate competition. Everyone—even IBM—would benefit in the end. **PC**