Hits and Misses

Chip Makers Have Done (and Said) Some Strange Things

Prospective PS/2 Clone Makers Still Leery of IBM

JANUARY, 1988—In a recent interview with *PC Week* editors, IBM Entry Systems Division President William C. Lowe said, "We (have) copyrights, patent applications, and some proprietary design wrapped up in the Micro Channel...It's a substantial investment, and at the same time that we want to support an open architecture and encourage other people to work with us, we have to protect that investment ... So, I have no intent to license the Micro Channel."

Is it open, or isn't it? Confused PC makers decided to ignore Micro Channel and develop EISA instead.

Motorola Considers, Then Drops MIPS Deal

DECEMBER, 1988—The [MIPS] deal was under consideration at the highest levels within Motorola, but is now thought to be dead, due at least in part to the great embarrassment such a move would cause to the 88000 program. In response to published reports of a pending deal with MIPS, Motorola issued a statement saying that the company is "totally committed to the 88000 RISC architecture and under no circumstances will we sell or market an alternate RISC chip set."

Eighteen months later, the company would ink the PowerPC pact with IBM and Apple.

Stratus Defects from 88000 to i860

APRIL, 1989—Stratus Computer, a maker of fault-tolerant computer systems, has abandoned its plans to build an 88000-based system and has adopted Intel's i860. … A Stratus spokesman said that it was "not a technical decision," but was made for business reasons, and cited the "building momentum for the i860."

This decision appears to make little sense, given that there is much more publicly announced support for the 88000 than for the i860.

Unlucky Stratus later dropped the i860 in favor of PA-RISC; it is now seeking another new architecture.

First Ferroelectric Memories Sampled

JULY, 1989—Recently, it has become possible to integrate capacitors made of ferroelectric materials onto conventional CMOS circuits to produce non-volatile storage devices. Ferroelectric materials have an asymmetric ionic crystal lattice which results in a permanent electric charge. The direction of this permanent charge can be reversed by applying an external electric field in the opposite direction. This unique property can be used to store and retrieve digital information.

FRAMs have found a niche in game cartridges and other devices but have not displaced EEPROMs.

After RISC, MISC?

AUGUST 22, 1990—Teraplex (Champaign, IL) has licensed its Minimum Instruction Set Computer (MISC) design to Atmel on a non-exclusive basis. … The architecture is said to include only nine instructions, which the company calls atomic instructions. The company calls it a "long instruction word" design, and says that instructions require no decoding. … Teraplex hopes to establish MISC as a new standard, but it faces an uphill battle in today's crowded market.

Apparently, nine instructions were not enough; Teraplex is no longer in business.

Startup to Watch: Rambus

JULY 18, 1990—A trickle of information about the startup Rambus is beginning to leak out. The company currently has only six employees. [They] will say only that they are "developing new technologies for breaking the bottleneck between processors and memory"; given the company's name, it seems reasonable to assume their product will have something to do with RAMs and buses.

Virtually all major DRAM makers have now licensed the Rambus technology.

OS/2 for MIPS

NOVEMBER 28, 1990—Microsoft is widely believed to have chosen the MIPS architecture as the first RISC OS/2 platform. This support could give MIPS a much-needed boost, but it's not going to happen overnight. The portable version of OS/2 initially will be targeted at the 386/486, with RISC versions following. Before OS/2 for MIPS can be significant, OS/2 itself must become established, and the applications—as well as the operating system—must be ported to the MIPS architecture. Presumably, most OS/2 applications are written entirely, or almost entirely, in a high-level language, but "simply recompiling" never seems to be as simple as it should be.

Microsoft's portable OS/2 became Windows NT, which was ported to MIPS but eventually abandoned due to lack of hardware and software support. It seemed like a good idea at the time.

S3 Abandons System Logic

DECEMBER 26, 1990—Startup S3 has abandoned development of their PC system logic chip sets that were introduced with much fanfare earlier this year (see μPR 5/18/90, p. 1). The company has decided to focus on an as-yet unannounced graphics controller product, and it has laid off 18 of its 41 employees.

S3 is now the leading vendor of graphics chips and employs more than 600 people.

Startup Reveals Superscalar 386-Compatible CPU

MARCH 6, 1991—Meridian Semiconductor, a small design group in Irvine, CA, has demonstrated a 386-compatible processor design implemented on six large circuit boards using PLDs and standard logic chips. The emulator connects to a standard 386 socket, thereby demonstrating both hardware and software compatibility. [Meridian] is now seeking a semiconductor partner … for the single-chip implementation.

Meridian's design was picked up by UMC of Taiwan, which briefly marketed the product in 1995 before exiting the x86 microprocessor business.

Andy Heller Leading Computer Startup

MARCH 20, 1991—Startup HaL Computer Systems, headed by Andy Heller, recently ran a recruitment ad with the headline, "Every quarter century, a company is born that will revolutionize technology." We wouldn't have expected this group to be humble. … "Our superscalar RISC computers, servers, OLTP systems, and software will provide superior processing and storage capabilities at very competitive cost."

HaL failed to make a dent in the market, and it was ultimately acquired by Fujitsu.

The Future of Intel (by Nick Tredennick)

MAY 29, 1991—Intel now makes three different parts using essentially the same 486 die: the full-function 486DX ($588), the 486SX with the floating-point unit disabled ($258), and the full-function 487SX [an upgrade to the 486SX] ($799). Has Intel finally done it? Have they finally gone too far with their blatantly avaricious and transparent scheme?

As you and I sit here with our stomachs churning at Intel's ploy, it's hard for us to believe their strategy will succeed. But I think it will. … The 486SX is good for MIS managers and it's good for individual PC owners. Sold. Success. Intel. Those technically savvy enough to know the difference between a 387 and a 487 represent 0% of the market (to a first approximation).

The 486SX was a big success.

Apple, IBM, Motorola Collaborate

OCTOBER 16, 1991—The planned object oriented system software, widely discussed during the past few months using its code-name "Pink," will be taken over by the newly formed Taligent. The Taligent operating system will be based primarily on Pink, under development at Apple for the past three years and claimed to already include over one million lines of code. Apple will apparently provide the majority of the personnel and technology. IBM will contribute technology from Patriot Partners, and it will presumably aid in providing compatibility "adapters" for DOS, OS/2, and Windows software. Information about the Taligent software is sketchy, and the first product is planned for the "mid-1990s."

Apple and IBM struggled mightily to bring forth a state-of-the-art operating system, but to no avail.

Oki Licenses PA-RISC

OCTOBER 30, 1991—HP has signed its third PA-RISC semiconductor licensee: Oki Electric Industry Co. … While the PA-RISC architecture itself is as suited for embedded control as any other RISC, the implementations to date have not been cost-effective. EE Times quoted an Oki spokesman as saying that they chose PA-RISC because it is "very likely to become the de facto standard in the future." We're not sure if this is a mis-quote, wishful thinking, or a serious delusion. … PA-RISC is not yet even a contender, much less a winner.

PA-RISC is still not an embedded contender.

Wave of High-End Processors Due

FEBRUARY 12, 1992—[VP Brian] Halla said that LSI remained committed to the out-of-order, speculative execution technology that was the heart of the Lightning [SPARC] design, but that it would be applied to other instruction set architectures. The technology may eventually appear as part of LSI's core processor program for ASICs [CoreWare], which will be announced later this month.

LSI never built an out-of-order processor or an out-of-order processor core. Halla is now CEO of National Semiconductor (see MPR 8/25/97, p. 1).

Sony and HDL Detail Embedded MIPS Cores

NOVEMBER 15, 1993—"We would like to make MIPS processors the Z80 of the future."—Tuan Luong, Sony America

With little help from Sony, MIPS has been successful, but perhaps not at the level of the Z80. ♦