THE EDITOR'S VIEW

Digital Bets Company on Weak Hand

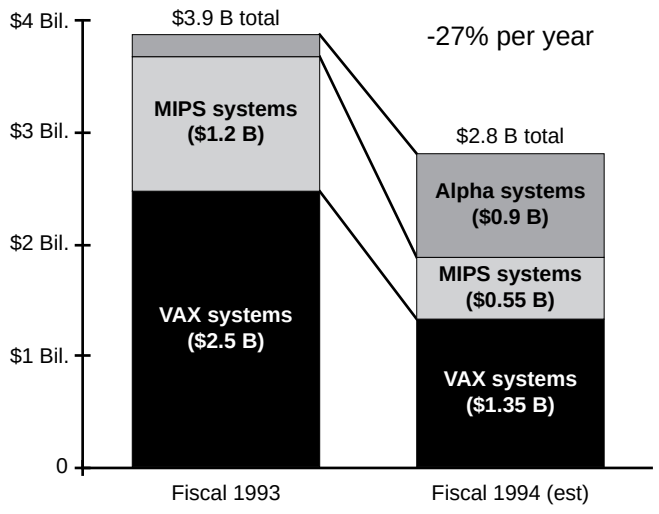
With Corporate Revenues Falling, Alpha Appears Too Little, Too Late

When the Alpha architecture was introduced in 1992, Digital officials admitted that they were betting the company on the new technology. Two years later, Alpha appears at best to be an inside straight: without a lucky draw, Digital may lose its bet, leaving Alpha as the in-house architecture of a much smaller company.

The graph below illustrates the crux of Digital's problem: its legacy VAX and MIPS customers are not buying new Alpha boxes in large enough numbers. In fact, the company's core hardware business shrank by more than $1 billion over the past year. Digital also derives nearly half of its revenue from servicing its installed base; although service revenue (not shown in the graph) declined by only 7% in fiscal 1994 (which ended in June), the decrease in system sales will inevitably impact service revenue in future years.

For both technical and business reasons, 1992 was too late to introduce a new RISC architecture. Architecturally, Alpha is too similar to earlier RISC designs to have much of an advantage. Although processors like the 21164 *(see **0811MSB.PDF**)* have maintained a performance edge, this edge is not big enough to entice system vendors, nearly all of which have already adopted a RISC architecture, to switch to Alpha. Similarly, Digital's customer base, forced to make a change, can consider other RISCs as well; Alpha's performance is not compelling enough to overcome its limited range of systems and software.

Without significant external sales of chips, Digital must fund Alpha itself. Yet HP, which generates $10 billion in PA-RISC system revenue, has turned to Intel to develop its next-generation processors, tacitly admitting that it can't support an in-house architecture. How can Digital, with far lower system revenues, support Alpha?



Digital's system revenue is declining rapidly as Alpha sales fail to make up for the loss of legacy customers. (Source: Dean Witter)

This lack of resources has already prevented Digital from designing a separate processor core for its low-cost 21066 processor, leaving that chip uncompetitive in cost/performance. Even Digital has so far declined to release a system based on the 21066. It appears that the company can't afford to develop both strong low-end and strong high-end processors for Alpha.

It is cruelly ironic that Digital has done nearly everything right to establish its new architecture in the market: merchant processor and chip set availability, adoption of standards such as NT and PCI, establishing a separate business unit for chip sales. But Alpha has been undone by the poor timing of its market entry.

Digital would have been better off had it simply built processors based on the MIPS architecture, perhaps with enhancements for VAX floating point, as we suggested in our original analysis *(see **060301.PDF**)*. The company could then have concentrated only on high-end processors, using standard MIPS chips for its low-cost systems. Digital's merchant sales of such high-speed MIPS processors would be much better than merchant Alpha sales because of the compatibility with an existing installed base. Finally, an architecture backed by both Digital and the MIPS partners would be a much stronger contender in the NT market against PowerPC and the x86. This strategy might not have saved the VAX installed base, but at least R&D costs would be lower and MIPS system sales would be solid.

After losing $5.8 billion over the past four years, Digital has resorted to selling parts of the company (most recently, its disk-drive operation) to sustain its investment in Alpha. But once the company runs out of expendable body parts (perhaps the booming PC business will go next), it will not be able to invest enough to keep Alpha competitive. Unless Digital somehow lands a major PC partner, the company will continue to melt slowly, like an ice-cream cone in the heat, its customer base gradually dripping away. Alpha may continue to exist as a means of supporting that customer base, but the architecture will probably become irrelevant to the