

■ THE EDITOR'S VIEW

Intel's Network Computer Dilemma

Should Intel Support This Emerging Platform or Oppose It?

Despite the growing attention being paid to the sub-\$1,000 computer market and the network computer (NC) paradigm (see [100804.PDF](#)), the proceedings have drawn no interest from one key hardware vendor: Intel. The microprocessor giant has hitched its wagon to the robust PC market and sees the NC as a threat to its horsepower. But if the NC develops as its backers hope, the PC market of the 2000s could become like the mainframe market of the 1990s: mature, sales flat, profits low.

Intel's public reaction to any threat is to studiously ignore it; the company rarely acknowledges competitors such as PowerPC or AMD, except when partnering with them. Intel is treating the upstart NC the same way, even though more than 70 companies have signed up to support Oracle's NC Reference Profile. Internally, however, Intel must be considering its alternatives in handling the NC.

The reasons for Intel to continue ignoring the NC are clear. If NCs are successful, at least some potential PC buyers may choose an NC instead. Because Intel and Microsoft divvy up most of the profit from any PC purchase, anything that hurts PC sales hurts Intel's profits. From this viewpoint, Intel should try to quash the fledgling NC efforts.

Unfortunately for Intel, the momentum behind the NC is rapidly building; there is probably nothing Intel can do to stop it. Certainly, the NC backers could stop themselves by failing to agree on standards, failing to offer a compelling combination of features and price, or by a dozen other failure mechanisms. There is a growing consensus, however, that the NC fills a market niche—a low-cost, easy-to-use computing device—for which the PC is ill-suited.

Intel's other alternative is to embrace the NC market and dominate it as it does the PC market. This path has its own perils. To sell products for less than \$500, NC vendors will need to buy processors for much less than \$100. Intel, however, prefers to sell chips above that price point; in fact, its business model is based on maintaining high profit margins. Any entry into the NC processor business would drag down the company's margins.

In addition, Intel would not have a proprietary lock on the NC market, as it does on the PC market. The NC Profile does not specify a processor instruction set or even a single operating system; by relying heavily on ROM-based programs and Java applications, the NC is expected to be processor independent. Thus, Intel would compete against RISC CPUs such as MIPS and PowerPC as well as x86 products from AMD and others. Such competition would further erode margins from Intel's current level.

On the other hand, the downside of ignoring the NC market could be enormous. In the U.S., both businesses and high-income households are saturated with PCs; while the upgrade market will provide steady sales, the best prospects for growth are among lower-income buyers and those with less education. To these buyers, an inexpensive easy-to-use NC could be more attractive than a stripped-down PC. Outside of the U.S., the PC market is less saturated, but many of these non-U.S. buyers are also seeking systems that cost less and are easier to use than today's PCs.

Intel is already constructing the fabs that will build its mainstream processors into the next decade. We believe these fabs are designed to service a 20% annual growth rate in the PC market throughout that period. This growth depends on attracting new buyers from the lower-income, less-educated groups mentioned above. It now appears that, in these market segments, the PC will be at war with the NC.

This is a war Intel cannot afford to lose. If the NC gains significant share, the PC's growth rate could be stunted, well below 20% per year. If this happens, Intel's expensive fabs won't be able to operate at their capacity, reducing the chip maker's profits. Without the income from fully loaded fabs, Intel may not be able to invest as heavily in the next round of fab construction, eventually losing its place as the world's top semiconductor manufacturer.

Of course, Intel can keep its head in the sand and hope the wheels fall off the NC bandwagon. A more reliable strategy would be to support both sides. If the company develops NC processors, it ensures its fabs will be full no matter which platform wins in the low-cost market. These low-cost chips, which could be either x86 or not, would reduce Intel's average profit margins, but any profit from NC processors would be better than the zero profit Intel gains from ignoring this market. Incremental profits, not gross margins, go directly to the company's bottom line.

The prospects for the NC remain unclear. In the near term, Intel is likely to publicly obstruct the NC as much as possible while emphasizing its efforts to reduce the cost of PCs and make them easier to use. Behind the scenes, however, the company should consider developing or licensing processors for the NC market; it can't afford to become the steward of a large but aging PC market overtaken by a hot new technology. □

