

National Quits PC Processors

With No Profitability in Sight, Cyrix to Be Sold or Shuttered

by Michael Slater

This article reprises and updates the news flash inserted in the previous issue.

Less than two years after acquiring Cyrix for \$550 million (see MPR 8/25/97, p. 1), National has thrown in the towel on its PC processor efforts and will sell or shut down its Cyrix operation. National will continue to pursue information appliances, with integrated processors based on the MediaGX. The company also is seeking a buyer for its new fab in South Portland, Maine.

Although National executives say they expect to sell the Cyrix operation, the fact that the decision to exit the PC processor market was announced without a buyer in hand suggests that initial efforts to sell Cyrix were not immediately successful. The decision to make the announcement was prompted, in part, by widespread rumors in the financial community. Now that the announcement has been made, every Cyrix design win is in jeopardy, with no guarantee of continued supply, and Cyrix employees are likely to begin dissipating. Thus, the value of the Cyrix asset was substantially reduced by the announcement.

Although a Cyrix spokesperson said only weeks ago that he expected the product line to be profitable in the fall, apparently National's projections didn't agree. National CEO Brian Halla said losses from the Cyrix operation would have driven the company into a loss position through fiscal 2000, but the company now expects to return to profitability in the fiscal quarter that begins in September. This statement implies that the company expects to sell or shut down Cyrix no later than August.

Despite Halla's statement that the company would "immediately cease slugging it out in the PC processor market," National says it remains committed to the Cyrix roadmap (see sidebar) until a buyer is found. Just what will happen if a sale does not occur quickly remains unclear. Rolling out Cyrix's next-generation Gobi processor, due to ship in the third quarter, will require further investment; but as long as National has the South Portland fab and has customers for the chip, it presumably will manufacture Gobi. Potential customers may be wary of a chip with an uncertain future, however. If Cyrix is sold, it is likely that some products will be delayed by the transition.

Richardson Team for Sale

Included in the potential sale are the 300-person team at Cyrix's original location in Richardson, Texas, the M II processor design and its successors, and the Cyrix brand name. The fab is likely to be sold separately, possibly to a foundry

company; National hopes to retain a minority interest in that facility and to continue to use it for some production.

National is retaining its design team in Longmont, Colorado, which developed the MediaGX processor that is at the heart of the company's efforts in the information appliance market. It will also keep its team in Tel Aviv, Israel, which has been working on PC-on-a-chip products. Both of these teams will focus on developing integrated processors for information appliances. The Richardson team has been working on the Jalapeno processor core (see MPR 11/16/98, p. 24) and the Mojave chip that includes it, due in the first half of 2000.

National's announced plan to lay off 550 employees, including 165 at its Singapore assembly plant and 184 in various functions in Santa Clara, does not include the 300 people in Richardson; these layoffs are part of a broader austerity campaign aimed at bringing the non-PC processor businesses to profitability.

In addition to selling the South Portland fab, National is closing its R&D fab in Santa Clara and ceasing most of its work in process development. The company will continue to operate an analog fab in Arlington, Texas, but is moving to a largely fabless model for its digital products. This shift is a striking reversal of Halla's strategy; he had led the company to invest heavily in advanced fab capability after his predecessor, Gil Amelio, had neglected National's fabs.

National simply couldn't afford the South Portland fab, given the size of Cyrix's business, and the company didn't have enough other products that needed the advanced capacity. Shortfalls in processor sales are very painful when the full overhead of a large fab must be carried on those sales. One change in the environment from earlier years is that Asian foundries, such as TSMC and UMC, now offer processes surprisingly close to the leading edge (see MPR 5/31/99, p. 4).

Cyrix Strategy Unravels

Just six months ago, National was so enthusiastic about its PC processor business that it spent millions of dollars to become the sole supplier of Cyrix-designed chips, buying out IBM's right to sell those products (see MPR 10/5/98, p. 4). Cyrix's enthusiasm derived from its success in the low-cost PC market, and the company believed it could achieve profitability by capturing the roughly 50% of sales that were being made directly by IBM.

National greatly underestimated Intel's determination to recapture the market share it lost in 1998, however. In retrospect, Cyrix's gains in 1998 came more from Intel's failure to adequately address the low-cost PC market than from any great strength of its own. With the poor performance of

the initial Celeron processors, Cyrix and AMD were both able to make great strides in the second half of 1998 as the sub-\$1,000 PC market exploded.

Early this year, however, Intel attacked the low-cost market with a vengeance (see MPR 1/25/99, p. 18). It accelerated its debut of higher-speed Celeron processors at the same time that it sharply lowered the entry-level price, bringing it down to levels not seen since the days of the 486. In 4Q98, M II shipments from Cyrix and IBM exceeded 3.5 million units; in 1Q99, Cyrix shipped only 1.55 million as Intel's Celeron gained share.

At the heart of Cyrix's difficulties is its inability to achieve clock rates comparable to Intel's, which limited its average selling price (ASP) to less than \$50. Cyrix has been slow to roll out new products: the M II has anchored the product line for nearly two years, with delays of up to nine months between speed grades (see MPR 5/10/99, p. 4).

Few Possible Purchasers

National is likely to be able to sell its fab, since this is a high-quality asset that can be used by many different companies and is in no way tied to the PC processor business. Finding a buyer for Cyrix, on the other hand, may be challenging.

National is rumored to have approached IBM Microelectronics, but apparently IBM declined the offer. Until late last year, IBM had a successful business selling Cyrix-designed chips; it was profitable, while Cyrix was not, because IBM incurred no design costs, had royalty-free access to the Cyrix designs, and shared a fab among many products. IBM may return to the PC processor market, but it isn't clear that buying Cyrix would be its best strategy. With the added cost of supporting the design team, and with Intel's increased aggressiveness, the economics wouldn't be as attractive as they were for IBM in the past.

Former Cyrix partners STMicroelectronics and Texas Instruments are possible buyers, but both companies have proclaimed their desire to stay away from PC processors.

AMD might consider picking up the Cyrix design team, but it is short on cash and, with an aggressive recruiting campaign, could simply cherry-pick the top staffers. The Cyrix designs are of little apparent value to AMD. Cyrix's Socket 370 chip design might be of interest to AMD as an alternative to Slot A, but AMD's patent-license agreement with Intel would prevent the company from selling the chip.

This leaves Asian semiconductor companies; Samsung has been mentioned as one possibility. These vendors are in difficult financial straits, however, and it seems unlikely that they could muster the resources needed to complete the acquisition, maintain the team, and rebuild market share.

Effects on the Market

As companies with Cyrix-based systems scramble for alternative suppliers, AMD is the company most likely to pick up this business. AMD's ability to capitalize on the opportunity, however, depends on how fast it can ramp up its production

Cyrix Reworks Roadmap

Just a few weeks after National announced its intent to get out of the PC processor business, Cyrix unveiled major changes to its roadmap. At the heart of the changes is the decision not to pursue the PC market with integrated processors but, instead, to stick with processors that follow Intel's interfaces and integration level.

The M II has been moved to National's 0.18-micron process, boosting it to PR ratings of 400 (285-MHz core, 95-MHz bus), 433 (300/100 MHz), and 466 (333/95 MHz). The first 0.18-micron chips are due to ship this month, with the top speed grade debuting in July. Cyrix also plans a mobile M II, at performance ratings up to 433, using the new process.

The first chip due to roll out under the new strategy, code-named Gobi, combines the Cayenne core (an enhanced derivative of the M II), a 256K on-chip L2 cache, and a Socket 370 interface. This chip, which is due to ship in the third quarter, could be the first pin-compatible competitor to Celeron. The on-chip L2 cache should provide a significant speed boost, since the M II is held back by its Socket 7-based L2, and the CPU core enhancements significantly improve MMX and floating-point performance—two weak points of the M II. Gobi also adds 3DNow support.

Cyrix plans to support a 133-MHz bus on Gobi, matching Intel's future Pentium III, whereas Intel currently limits its Celeron processors to a 66-MHz bus. As for performance, National says only that it expects the initial version to exceed the performance of a Celeron-433. It should do much better than that, since the M II is due to hit the 466 level without an on-chip L2 and with a slower core and bus interface.

Cyrix has dropped its plan for the chip code-named Jedi, which was to be a Socket 7 version of Gobi. It has also indefinitely delayed the MXi, which was to be an integrated processor based on the Cayenne core; this chip had neither the performance needed for the PC market nor the low cost needed for information appliances.

Following the new strategy, the previously planned M3 (see MPR 11/16/98, p. 24) has been shelved. This processor was to include a 3D-graphics unit, memory controller, and dual DRDRAM channels. Instead, the roadmap now shows Mojave, which uses the same Jalapeno core but follows the Intel-standard Socket 370 interface; it has an on-chip L2 but no 3D-graphics unit or DRDRAM channels. Mojave is due to ship in 2Q00.

When, or even if, Gobi or Mojave sees the light of day depends on how quickly Cyrix is sold, the buyer's plans, and the difficulty of the transition. The new chips could put the product line on a more competitive footing, if they can be delivered on time and at sufficient clock speeds.

capacity. Cyrix's business has been at half the ASP AMD is targeting; AMD isn't likely to take this business if it can fill its capacity selling higher-speed parts.

IDT and Rise are the two suppliers that have focused on the low-cost market, with ASPs below those of Cyrix. Today, however, they can match only Cyrix's lowest speed grade, and their ability to ship in comparable volume remains unproven. IDT is struggling to ramp up its WinChip 2, due to continued fab difficulties, and the company is reportedly looking for a partner to help finance its x86 efforts.

Rise plans to intercept Cyrix's performance levels in the second half of this year (see MPR 5/31/99, p. 15), and it hopes to step into any gap left by Cyrix's clouded future. It also plans to offer a Socket 370 part by year-end, joining Cyrix's Gobi. The company has yet to make any significant shipments, however, and its ability to execute on its plan remains uncertain.

To the degree that makers of low-cost PCs are forced to switch to more-expensive AMD or Intel processors, prices for the least expensive PCs may rise. This amount should be modest, however; AMD and Intel are likely to offer chips with no more than a \$20-\$30 premium over Cyrix's pricing.

Information Appliance Strategy Continues

National is not exiting the x86 processor business; it intends to continue vigorous pursuit of the information appliance market, where it has already had some success with the MediaGX. The company plans to roll out higher-performance and lower-power versions of the MediaGX, as well as even more

highly integrated products that build upon that design to create single-chip solutions for products including thin clients, set-top boxes, and Internet appliances (like the prototype WebPad).

Ever since National's acquisition of Cyrix, the company's public statements have focused on the information appliance market. So far, this market remains small, however; MediaGX shipments were only 170,000 units in 1Q99, accounting for less than \$5 million in revenue. National is banking on rapid growth in this arena, and it recently scored an important win in the AOL set-top box. It will not be without competitors in this market, however; former Cyrix partners STMicroelectronics and IBM Microelectronics both have established efforts, and Intel in stepping into the fray with StrongARM. Many vendors, from LSI Logic to the Japanese chip makers, will pursue this market with RISC-based solutions.

One challenge National will face is finding new processor cores for future integrated processors. Depending on the purchaser, National may be able to retain rights to use the Cayenne and Jalapeno cores in future integrated processors, which would carry the product line for many years. National also has an ARM license and may develop integrated processors based on that architecture as well.

National and Cyrix each have major challenges going forward, but they may be able to face them apart more effectively than they could together. In the hands of an owner able to share a fab and process technology development among multiple product lines, Cyrix would have a better chance to achieve profitability. □