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Inside the Failed Patent Litigation Strategy of Rambus, Inc.

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Few Silicon Valley companies inspire a wider range of emotions than the computer chip designer Rambus, Inc. In the view of its leaders—as well as fiercely loyal shareholders who have flown around the country to watch its lawyers in court—the company is a visionary turned victim. Rambus revolutionized the computer industry in the 1990s, they say, when the company debuted state-of-the-art chip technology and licensed it to chip manufacturers. Rambus hasn't been fairly compensated for those innovations, its defenders maintain, because rivals copied the technology and refused to pay up. Confronted with brazen collusion and theft, Rambus had no choice but to seek relief in court by suing its rivals.

"We really didn't plan on being a litigation company," says Thomas Lavelle, Rambus's general counsel since 2006. "Our founders had breakthrough innovations and great patents, and they believed that would lead to success. I don't think it occurred to them that—as cynical as the world can be—the better product might not be adopted."

But some of Rambus's rivals have a very different take. They've argued that the company delivered a flawed product; that it defrauded the Joint Electron Device Engineering Council (the body tasked with creating industry standards for computer memory); and that it ambushed JEDEC participants with unreasonable demands for royalty payments. When that plan stalled, Rambus allegedly turned to a Plan B: litigation against rivals Hynix Semiconductor Inc.; Infineon Technologies AG; Micron Technology, Inc.; and Samsung Electronics Co., Ltd.

The latter narrative gained traction after Rambus's first test case, against Infineon, became a public relations nightmare. First, in 2001, a judge dismissed Rambus's patent infringement claims. Then, a jury found that Rambus committed fraud by quietly amending its patent applications to include technology that would become part of the industry-wide JEDEC standards. An appeals court vacated the jury's verdict, but then the case took another embarrassing turn for Rambus. In 2005 a judge ruled from the bench that he would dismiss the case on the grounds that Rambus shredded evidence in anticipation of litigation. Rambus eventually settled all pending litigation with Infineon for approximately $145 million, but not without heavy damage to its reputation.

Still, the Rambus faithful stood behind the company because of wins like a $306 million patent infringement verdict against South Korean chip manufacturer Hynix in 2006. (That award was vacated and remanded on appeal last year.) And the biggest case of all was yet to come: a massive antitrust suit that Rambus brought against Hynix, Micron, and Samsung. Rambus first alleged in 2004 and 2005 that executives of the three companies had tried to drive it out of

business by fixing chip prices; it sought $4 billion in damages. After Samsung settled for approximately $900 million in 2010, many analysts were optimistic about Rambus's odds against the remaining defendants, Hynix and Micron.

The case finally went before a San Francisco state court jury last summer. There were two keys facts on Rambus's side: Hynix had pled guilty to price-fixing charges in a criminal case brought by the U.S. Department of Justice, and Micron had cooperated with prosecutors as part of a confidential amnesty agreement in that case.

But after three months of trial and four months of jury deliberations, Rambus walked away empty-handed when jurors returned a 9-to-3 verdict in favor of Micron and Hynix last November. Ever since, many observers in the IP world have been asking if 12 years of litigation was worth it. According to regulatory filings, the company spent more than $300 million in legal fees in the fight against its rivals.

Rambus officials, for their part, strike an optimistic tone. "We're the small company that went into battle and found ourselves up against a couple of armies and somehow survived," says Lavelle. "While we haven't been successful in all of our litigation, we have plenty of assets, resources, and spirit to go forward. I think that's a remarkable story in and of itself."

THE RAMBUS STORY began in 1988 at a restaurant in downtown Palo Alto, according to the company's opening statement in the Infineon trial. Over dinner, Michael Farmwald, a professor at the University of Illinois at Urbana-Champaign, and Mark Horowitz, a professor at Stanford University, discussed their research on computer chips. Microprocessor speeds were increasing exponentially at the time, but memory capacity lagged behind. Farmwald told Horowitz that he was on the cusp of developing a new kind of dynamic random access memory (DRAM) that could store data at a speed unheard of at the time. The two researchers also discussed what was then a novel business strategy. Lacking the hundreds of millions of dollars in financing that they would need to mass-produce their own chips, Farmwald proposed a different plan: He and Horowitz should join together to patent their eventual discoveries and license the technology to chip manufacturers.

Horowitz was initially skeptical of the patent-licensing model, but Farmwald won him over. In 1990 they incorporated Rambus and submitted their first batch of patent applications. They also hired Geoffrey Tate from Advanced Micro Devices, Inc., to be CEO, and named themselves as vice presidents. Farmwald and Horo-witz then went on a road show, pitching their technology to executives at computing companies around the world. They also lobbied for Rambus's technology at JEDEC meetings, the forum where wary rivals tried to hash out industry-wide standards for DRAM.

By 1993, Toshiba Corporation, Hitachi Ltd., and NEC Corporation had all signed up to license the company's technology, which would come to be known as Rambus DRAM (RDRAM). Farmwald and Horowitz inked their biggest deal yet in 1996, when Intel Corporation announced that its best-selling microprocessors would be compatible only with RDRAM. Flush with cash from its licensing deals, Rambus hired more than 100 engineers to keep working on RDRAM. They would go on to help the company secure several families of patents. Rambus's stock price

eventually soared to more than $400 a share. After a 4:1 stock split in June 2000, the share price peaked at $117.

The Rambus-Intel partnership soon soured, however. In 1999 Intel delayed shipments of a new microprocessor because of alleged technical problems with RDRAM. The next year, Intel announced that its future chips would no longer be exclusively compatible with RDRAM. "We made a big bet on Rambus, and it did not work out," Craig Barrett, Intel's then CEO, told *Financial Times* at the time.

Rambus, for its part, maintains that Intel overhyped minor problems. "Having been in the semiconductor business since 1983, I don't remember any design of any product ever that wasn't difficult to implement. That's just the way the industry is," says Lavelle, who spent 16 years at Intel and seven years at Xilinx, Inc., before he was hired as GC in 2006 by current Rambus CEO Harold Hughes.

In 2001 Infineon added to Rambus's woes by accusing it of a patent "holdup." Rambus had sued the German chip maker for patent infringement in 2000; Infineon not only convinced a jury to dismiss the claims, it also won a jury verdict that Rambus committed fraud when it amended pending patent applications after attending JEDEC meetings in the 1990s. Rambus's motive, Infineon said, was to lock manufacturers into using its technology.

THE Federal Trade Commission made the "holdup" allegations the focus of a 2002 antitrust complaint against Rambus. The company argued that it had no duty under JEDEC's vague rules to disclose its amended patent filings. In 2003 its lawyers convinced the U.S. Court of Appeals for the Federal Circuit to vacate the fraud verdict in the Infineon case. Rambus also won a ruling from an FTC administrative law judge that it hadn't misled JEDEC or violated the group's rules. The FTC judge wrote in his ruling that Rambus had a monopoly because it offered "superior" technology, not because of a patent ambush. His ruling was later overturned, but the Federal Circuit eventually sided with Rambus, prompting the FTC to drop its complaint in 2009.

According to John Danforth, Rambus's general counsel from 2001 to 2006, the company amended its patent applications only to protect itself from what it regarded as brazen IP theft. He maintains that Rambus's rivals were putting its inventions into a series of competing DRAM products to avoid paying licensing fees. "Even after Rambus left JEDEC and began to assert its patents in court, JEDEC kept coming back for more Rambus inventions," adds Danforth, who now serves as a consultant to tech companies.

While Rambus eventually prevailed with the FTC, it suffered from more embarrassing allegations in the meantime. In 2005 federal district court judge Robert Payne in Richmond ruled from the bench that he would toss Rambus's patent case against Infineon. The reason? Internal documents had revealed that a Rambus vice president organized what he called a "shred day" in 1998 and another "all-day shredding party" in 1999 in which employees destroyed hundreds of boxes of documents. Rambus paid dearly for the vice president's remarks. Shortly after Payne's ruling, Infineon and Rambus settled all pending litigation for approximately $145 million—a sum many analysts called a huge disappointment for Rambus. The company also had trouble in a patent infringement suit against Hynix. Rambus won a $306 million jury verdict against Hynix in

2006, but that award was vacated and remanded on appeal last year because of the document destruction.

In the view of Gene Quinn, a patent lawyer at Zies, Widerman & Malek in Florida, "Rambus had great technology and was in some ways a victim, but their own behavior came back to haunt them." Quinn, who has not represented any of the parties in the Rambus litigation, adds, "As a lawyer, you want to characterize your client as Snow White, and that was simply not possible with Rambus." The company "made a bad situation far worse" by not acknowledging the damning nature of the "shred day" e-mails earlier, he explains.

Lavelle defends Rambus's actions. The much-hyped shred party was part of a lawful, routine document destruction policy, he says: "Everybody does that, but calling it a shred day was probably a really bad idea." He adds, "We have been victimized by the sarcasm of some of our employees who hadn't been trained better." According to Lavelle, "The truth is that all of the documents that are relevant have been produced."

In addition to the patent litigation, Rambus was pressing on with its antitrust suit against Hynix, Micron, and Samsung in which it accused the three companies of conspiring to fix prices for DRAM. Samsung settled for about $900 million in 2010, but Hynix and Micron refused to back down. After many delays, the case finally went to trial last summer before San Francisco superior court judge James McBride. Lawyers for Hynix and Micron hoped to show the shred party e-mails to the jury. But Rambus's attorneys at Munger, Tolles & Olson convinced McBride to block the Federal Circuit's ruling against Rambus from coming into evidence.

Unable to exploit the shredding issue, Hynix's lawyers at O'Melveny & Myers and Micron's lawyers at Quinn Emanuel Urquhart & Sullivan took another tack: They claimed that Rambus's chip design was defective. Flaws in RDRAM relegated the company to the sidelines, they argued, not collusion and price-fixing by Micron and Hynix. Five defense witnesses from Intel helped bolster this argument. The testimony got particularly emotional when Paul Fahey, the former project manager for RDRAM at Intel, took the stand. "I had colleagues whose marriages were ruined because they worked so hard on this project," he testified. The folks at Rambus, on the other hand, "didn't work as hard" and "went home" because, Fahey contended, Rambus already had a "Plan B": litigation. "That's how they were going to make their money," Fahey alleged.

Still, it seemed that Rambus would be able to counter Intel with a powerful ally of its own: the federal government. The Justice Department had opened an investigation into memory price-fixing in 2002. Infineon, Hynix, and Samsung all eventually pled guilty and paid multimillion-dollar fines, while Micron entered into a secret amnesty agreement to avoid prosecution. Rambus couldn't enter the Samsung guilty plea as evidence because of its settlement with that company, but it could tell jurors about Hynix's guilty plea and Micron's cooperation.

Also, Rambus's lawyers at Munger tried to make use of an e-mail purportedly revealing a scheme by Micron to fix prices of its chip technology, known as DDR SDRAM. Micron executive Linda Turner wrote to her sales team in 2001 that "we have . . . actually been requesting Infineon, Samsung, and Hynix to lower their DDR pricing to help it become a

standard (and drive Rambus away completely)." The Rambus faithful have long felt that the Turner e-mail was a smoking gun of price-fixing.

But jurors weren't convinced. On November 16 they rejected Rambus's claims in a 9-to-3 vote. The loss was a bitter one for Rambus. "Going into the trial last summer, many of us saw this as Rambus's case to lose, given the strong evidence of a joint boycott laid out in the initial FTC decision," former GC Danforth said in an e-mail. He attributes the loss to several factors: "errors in the special verdict form, an apparently fatigued jury after a long, drawn-out trial, masterful lawyering on the defense side, and numerous evidentiary rulings that may yet prove to be reversible error."

Rambus's settlement with Samsung in 2010 also proved to a be costly strategic error, Danforth believes: "It had the effect of delaying the case [against Hynix and Micron] an additional 18 months, and keeping from the jury Samsung's criminal guilty plea." According to Danforth, the Samsung plea contains an "express admission of the industry fixing RDRAM prices specifically, not just DRAM prices in general."

Rambus says it will likely appeal on the grounds that Judge McBride improperly blocked the jury from hearing crucial evidence. But Lavelle is less than confident about the company's odds. "I think there are grounds for having the case overturned, and we are in the process of doing that," he says. "But at what point would we ever go to trial? Part of the problem is that it took way too long to get to trial in the first place. Wait another four or five years, and how's that case going to go?"

For Several observers, the Rambus saga is a cautionary tale. As Quinn, the patent lawyer at Zies, Widerman, sees it, "Rambus felt wronged and said, 'We are going to litigate to get the result we know we deserve.' " That's a dangerous mind-set, Quinn continues: "Once they did that, they crossed a bridge and burned it. There was no going back." Jordan Sigale, a partner at Loeb & Loeb who has not represented Rambus or its opponents, agrees that Rambus should have struck a different tone. "If your model is to have other companies license your technology, when you have to litigate, you do so professionally and without bravado, so that you don't burn bridges," he says. Instead, Rambus went for a "scorched-earth policy." Sigale adds, "I think it's going to be a long time before Micron and Hynix come back to Rambus and license anything."

Rambus may not need them, however. It continues to license DRAM patents, both old and new, to companies such as Samsung and Panasonic Corporation. And it got a morale boost in December, when Broadcom Corporation signed an agreement to license DRAM patents. (Rambus had sued Broadcom at the International Trade Commission, alleging infringement of six DRAM patents.)

Perhaps sensing an uncertain future in computer memory, Rambus is branching out. Last year it paid $342 million for Cryptography Research, Inc., a company that provides security to semiconductors. It has also acquired the rights to portfolios of LED lighting patents from smaller companies. "That's where we are really putting most of our focus going forward," says Lavelle. "I like to think that over time, we are going to be a role model for how to do what the U.S. is good at—innovate and turn that innovation into revenue.