

## Adjustments at ADI drive firm's success

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If there's an elder statesman of technology in Ann Arbor, it's Applied Dynamics International. Arguably the University of Michigan's first startup company, ADI began making speedy simulation machines in 1957, back when computers were the size of classic Chevys. Covered with dials and knobs, ADI's first machines let engineers process vast equations, gauging anything from satellites gliding through space to fluid moving through the human eye - and helping make slide rules extinct in the process.

Some 47 years later, ADI sells a much slimmer simulation and testing computer, often running in tandem with a 7-pound laptop computer. The company is leaner as well, employing about 50 people, scaled back from a peak of about 300 in the late 1960s.

ADI's staying power defies convention that says only big tech hardware makers can keep a toehold in the marketplace. With customers ranging from Boeing to Rolls Royce to tank maker United Defense, ADI's machines help manufacturers and suppliers design and tinker with their products well before they build them. Specifically, the machines virtually simulate millions of ways small "embedded control" systems work - such as how antilock brakes perform inside a car if the wheels hit a patch of ice.

Consistency of its technology has led to perseverance for the company.

"A great deal of our business is repeat business for some of the same customers for 10 years or more," said John McIntosh, ADI's president and CEO. But the stalwart has also faced drastic computing changes to survive 47 years in the business, said Melissa Wright, ADI's recently appointed chief operating officer.

"ADI had been primarily a product company," Wright said. "But we've had to switch to (include) solutions. And I think that's helped the company ... because the thrust is product development." About 80 percent of ADI's annual \$10 million in revenues is from hardware and software, and 20 percent from various technology services.

Scott James, who heads up business development at ADI, said the company has learned "huge lessons," in the last decade on how to approach projects and sell its technology. The company's hardware developers serve a "a tour of duty," with customers, returning with ideas on how to make better ADI systems, instead of trying to market products in a vacuum.

"You have a loop of service people close to customers learning what they're doing and then you bring those people in to guide product development," James said.

One result of that practice has been the rtx model, released a year ago. The unit conducts 10,000 complicated equations per second, five times faster than the previous model. The company sells high-end or lower-end versions of the simulator, which allows price flexibility for customers, who in the past had only one price option. The systems start at \$10,000 and can cost \$1 million or more, depending on the complexity of the project.

ADI has seen on-and-off profitability since it returned to independence 12 years ago, when managers bought the company back from Dutch Internatio, which had owned it 17 years. In the last five years, revenues have held around \$10 million. Wright anticipates the company will be profitable this year.

With the "embedded controls" industry expanding by 16 to 18 percent every five years, well-established companies like ADI have reason to hold onto their niche, said Jim Turley, an analyst following the industry for consulting firm Silicon Insider, in Pacific Grove, Calif. The sheer volume of microprocessors found in everything from elevators to greeting cards is driving the growth. The number of electronic devices in cars, for instance, is gaining by nearly 20 percent each year.

"Double-digit growth sounds pretty good and it is," Turley said. "The steel industry would love to have that. In the auto industry, 16 percent would be unheard of."

Consumer electronics, dominated by names like Intel Corp., Cisco Systems and Texas Instruments, is the most well-known aspect of that industry. But those companies cover less than 10 percent of the market, Turley said, leaving the door open for smaller players.

"The market is so big, that no single player can hope to dominate it," he said. The strength of that market is one reason that McIntosh, ADI's as vice president of engineering from 1965 to 1970, has stayed with the company. McIntosh returned to ADI in 1992 during the management buyout, intending to stay just three years. He continues as ADI's chairman and is among 11 company owners today. "It's like trying to leave a lover," McIntosh said. "It's hard to do."

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