



Technology

Timing is right for high-tech firm

Mobius, a former U-M project, could employ 500 people in Detroit and generate 1,100 spinoff jobs

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Max Ortiz / The Detroit News

Gordy Carichner of Mobius tests a USB bridge controller with Mobius integrated clocking at company offices in downtown Detroit.

Mobius Microsystems Inc., a case study in how to turn academic research into commercial enterprise, is poised to bring hundreds of jobs to downtown Detroit.

Since late 2003, the company has evolved from a research project at the University of Michigan into a fledgling business with 10 employees, two customers, \$1 million in venture capital and a new Detroit headquarters.

Mobius' first product -- a tiny clocking device that uses radio frequencies to drive microprocessors in video games, personal digital assistants, cell phones and other electronics, -- enters an expanding market estimated at \$300 million annually.

The growth potential is such that Mobius could eventually employ 500 people and generate nearly 1,100 spinoff jobs, Michigan Economic Development Corp. spokeswoman Susan McCormick said.

In September, the state granted Mobius a \$4.4 million, 10-year tax abatement to keep the company here - it moved to Detroit from Ann Arbor -- and sway them into turning down an offer to relocate to Columbus, Ohio.

Mobius co-founder and CEO Michael McCorquodale liked the idea of joining Detroit's downtown revival. "We wanted to stay close to U-M, which is a great resource for recruiting," McCorquodale said. "As we grow, it will help the community. We feel we're really making a difference here."

Mobius' rapid expansion bucks industry trends, said Scott Smyser, a senior analyst at iSuppli Corp. of El Segundo, Calif., a consultant to the semiconductor industry.

"I've looked at Mobius' technology and at their potential products," Smyser said. "It says a lot that within a year they've got traction with two customers already. Usually you'd expect that to take longer."

All electronic products need timing devices to drive their operations. Smyser said Mobius' integrated clocking device is more accurate and cheaper than larger ceramic oscillators, which represent a \$300 million market in the United States alone. Higher-end items such as personal computers use more precise quartz crystal resonators.

Mobius faces stiff competition in the ceramic- oscillator sector from Maxim Integrated Products of Sunnyvale, Calif., and Linear Technology Corp. of Milpitas, Calif., as well as Micro Oscillator Inc. in Philadelphia.

But Mobius officials think they can eventually make devices precise enough to compete with quartz oscillators -- a \$4 billion U.S. market, according to Smyser.

As a start-up company, however, it may take time for Mobius to become profitable. McCorquodale declined to disclose the company's revenues, but said product development costs will keep the company from having a positive cash flow until 2007.

McCorquodale founded Mobius in 2002 when he was a doctoral student in electrical engineering at U-M. He partnered with his faculty adviser, Rich Brown, who is now a dean at the University of Utah. Eventually, U-M business student Jeffrey Wilkins joined the staff and is now chief operating officer.

McCorquodale's research under Brown evolved into a product called the "Copernicus Clocking Solution." It replaces a ceramic component --which has to be soldered onto a silicon chip and is about half the size of a postage stamp -- with a tiny radio-frequency device nearly as small as the period at the end of a sentence.

The device allows for better efficiency and reliability at a cost of about 4 cents per device versus 20 cents for ceramic oscillators, McCorquodale said. His two customers -- one Asian, the other American -- are testing the device with shipments expected to begin later this year.

Future Mobius products will use radio-frequency technology to shrink components of devices used in wireless communications.

Ann Arbor's Waypoint Ventures, which provided \$1 million in initial funding to Mobius, will also be part of a fund-raising round of \$8 million scheduled to be finished by April, managing partner Marc Weiser said.

"(Mobius) had an understanding of their customer and where the market was going," Weiser said of the company's quick start. "They are capital efficient and a perfect example of what you want a university spinoff to do."

**Mobius
Microsystems Inc.**

Headquarters:
Detroit.

Product:
Radio-frequency-
based timing device for
microprocessors about
the size of a dot at the
end of a sentence to
replace larger ceramic
oscillators that must be
soldered on to
computer chips.

Customers:
Semiconductor
component makers

Employees:
10 today, up from
three a year ago.
Projections are to be at
20 by mid-2006.