

## Sensing a new opportunity

By CHRIS THOMPSON

Bob Schmidt has started six companies, but none are as ambitious as ComSense Technology Inc.

The fledgling company - spun out of work done by [Orbital Research Inc.](#) - has developed a high temperature pressure sensor that helps measure the performance of individual cylinders in automotive and truck engines. Demand for such sensors is expected to grow - to \$5 billion by one estimate - as engine makers try to fine-tune the operation of their engines to boost efficiency and reduce pollution.

Presently, engine sensors are used to manage the performance of all of an engine's cylinders at the same time. However, it is usually only one cylinder that needs to be modified. Cylinder sensors developed to date are too expensive. Fred Lisy, president of Orbital and interim president of ComSense, insists the sensor his scientists have developed will cost about \$20, compared to a \$2,500 sensor made by the competition.

Engine makers are committed to begin testing cylinder sensors in early 2005 so that they can comply with new federal regulatory standards that will take effect in 2010. And ComSense wants to be in a position to take advantage of that opportunity.

To achieve their vision for ComSense, Messrs. Schmidt and Lisy are hoping to raise \$1.5 million from outside investors early this year to develop the next generation of prototype. Orbital has used U.S. Air Force research grants to develop the high temperature pressure sensor to work in turbine engines, Mr. Lisy said.

Several million dollars has already been spent on developing the sensor, which depends on micromechanical systems, or MEMS, technology. And it will take millions more to get the technology to the production stage. Mr. Lisy estimated a second round of investment totaling \$10 million would be required in the 2005-06 time period.

"This is not without risk," Mr. Schmidt said. "But I'm betting all my money on it."

In addition to seeking outside investors, the founders of ComSense need to recruit an experienced management team that can handle the business-side of the operation. Mr. Lisy, a scientist who oversees sophisticated research and development projects for the defense and aerospace industries at Orbital, said he has learned that experienced business hands are needed to grow businesses.

That's why he and Mr. Schmidt brought in a former Invacare executive, Collin Drummond, to run another of their MEMS-based spin-offs, [iActiv Corp.](#) That company is selling tiny air control valves and is developing a product to be used in computerized Braille readers.

"We're going to need to build a management team to get money" for ComSense, Mr. Lisy said.

While Mr. Schmidt has high hopes for all of his companies, he said ComSense is the most promising.

"If this works the way we think it works, it's very big," he said.

Unlike, Cleveland Medical Devices, the company that Mr. Schmidt is probably best known for, ComSense will not have a long gestation period financed by federal research grants and contracts. [Cleveland Medical](#) now has 35 employees and is beginning to generate steady sales for its wireless physiological monitoring equipment. The company had revenue of \$3.9 million last year, but only about 5% were from sales. The rest came from grants and federal Small Business Innovation Research Grants. The company has \$4.5 million in business booked for this year.

Mr. Schmidt has been nurturing Cleveland Medical Devices for more than a decade. ComSense is on a much faster track and cannot rely on grants to grow.

"SBIR's won't pay for management," Mr. Schmidt noted.

Although he's never been able to attract outside investors for his companies, they have grown.

The clearest evidence of their progress can be seen by driving east of downtown on Euclid Avenue. Three large, bright signs hang on the exterior of the building at 4415 Euclid Ave. touting the presence of Cleveland Medical Devices, iActiv and Orbital. The companies moved into the building last year. And several other technology-oriented tenants have joined them in a building that Mr. Schmidt hopes to turn into a MEMS mecca for Cleveland.

Since most of his business career had been spent in incubator space run by nonprofits, the move into the Midtown building was a significant milestone made all the more noticeable by the prominent signage.

"It's to show people we've grown up," Mr. Schmidt said of the signs. Of course, there'll be a lot more growing if ComSense is able to deliver on its promise.

Mr. Schmidt said a lot of work needs to be done to prove that the sensor can perform as well as preliminary testing indicates.

"Everything we have says it works," he said. "But how will it work on the road?"

He is hoping outside investors will help him find the answer to that question.

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