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Grants helped Metis create emergency notification system

Safe investment

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From left Dave Hochendoner, chief technology officer, Mark Kurtzrock, president and CEO, Ralph Jenkins, hardware/firmware engineer, and Timothy Means, marketing director of Metis Secure Solutions in Oakmont.

On Monday, April 16, 2007, David Ruppersberger, president and CEO of the Technology Collaborative, began his workday by reading through a stack of grant proposals.

The previous Friday had been the deadline for submissions from companies seeking to be included in the collaborative's next round of funding.

A proposal from Oakmont-based Sima Products called for the creation of an emergency notification system meant to cure the weaknesses of existing systems.

The proposal described how such a system might save lives in different types of emergencies; in one of the possible scenarios, a gunman was loose on a university campus.

After reading the proposals, Mr. Ruppersberger went online to check the day's news. The lead story was about a gunman on the campus of Virginia Polytechnic Institute and State University in Blacksburg, Va., engaged in what would become known as the Virginia Tech massacre.

"I got chills and thought, 'Oh my goodness,'" Mr. Ruppersberger said.

Six weeks later, the approximately 50 member companies of the North Shore nonprofit economic development group awarded Sima a grant for about $200,000.

Now, after two years of development and testing, the first Metis Secure system has been sold to Carnegie Mellon University. The system is being installed at Mellon Institute, a columned fortress of a building that also was used to field-test it.

Sima, in business since 1973, formed Metis Secure Solutions in December to produce and market the systems, naming the spinoff after the Greek goddess of wisdom and caution. The new company had secured a $200,000 investment from Innovation Works.

"They have a novel solution to a very large problem on college campuses," said Randy Eager, executive-in-residence of the nonprofit, seed-stage investment group in Hazelwood.

"It delivers the right message at the right time to the right location."

Alerting devices in the new system do more than blast a siren or ring a bell. They also display text messages and transmit voices, allowing emergency system operators to provide more information than an alarm-only system.

In addition, each device includes a call button that can be used to notify the system operator of an emergency.

Sima's chief technology officer, Dave Hochendoner, said many emergency notification systems have had critical shortfalls in the past.

For instance, some rely on cell phone systems.

In an emergency, "What typically happens is everyone on campus starts calling their friends, which jams up the systems and stops the call from going through," he said.

On a campus with 10,000 students, it can take up to two hours for messages to get through in an emergency situation, he said.

Metis Secure, instead, uses two independent communications channels, a wireless mesh network and an FM digital subcarrier that allow it to continue operating when cell towers or Wi-Fi networks fail.

The idea for the system was inspired by another Sima product line: radios designed to receive storm warnings and other emergency signals from the National Oceanographic and Atmospheric Administration.

"They're absolutely great for a big event such as a tornado," Mr. Hochendoner said, but not as effective for smaller emergencies. "If there's an event in Duquesne or Shadyside or whatever ... they have to wake up everyone in Allegheny County."

That made Sima's engineers ask what if a warning system could target a smaller zone.

The company spoke with the Federal Emergency Management Administration, which "basically loved the product" but did not have funding for its development.

That led Sima officials to the Technology Collaborative.

Getting funding for product development is one thing.

Being able to test the product in a real-world environment is quite another.

A water main break at CMU in 2006 opened that door.

"A professor said that his wife had a business that sold weather radios, and that they were developing a system for addressing individual radios, and asked, 'Would you be interested?'" said Madelyn G. Miller, CMU's director of environmental health and safety.

"I said, 'Absolutely.'"

The professor's wife was Sima CEO Ilana Diamond, and the resulting relationship led to design students being tapped for their ideas on a system that could work

without electricity, computers or cell phones. It also led to the use of Mellon Institute as a test site.

With its thick walls and underground spaces that defeat cell phones and police radios, the building was a prime candidate, Ms. Miller said.

"If you can make it work in Mellon Institute, you can make it work anywhere."

After a successful test in January, Ms. Miller ordered a permanent installation for the building and hopes later to install units in classrooms campuswide.

Ms. Miller has become so much of a believer that she plans to do a presentation about Metis to her peers at a national conference this summer.

"I'm selling it," she said. "I don't have any stock in it, but I'm just a fan."

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