

‘Sensing’ a Change

Carmel Start-up Seeks to Prevent Disasters

By Matt L. Ottinger

U.S. cities from New York to Houston experienced major crane disasters in 2008. While many mechanical reasons for the collapses can be given, the crux of the matter is that the machines were too stressed to function properly.

Tragic events like these are what Delta Technologies, a Carmel start-up, is working to prevent by perfecting sensors that will communicate when structures are compromised.

“Our vision of the world is that we can’t communicate very well,” says company president Berin McKeown. “For example, your house can’t tell you if it has a leaky roof or if it has mold. And then you don’t find out until it’s too late.”

He adds, “It’s the same with cranes; we want to put sensors in places they haven’t been before.”



Small, but mighty

While walking through Delta’s office, a visitor is enlightened by a common theme: potential. The empty rooms are soon to be filled by the company’s new employees. And in a literal sense, potential energy is clearly illustrated when McKeown pens educational scientific diagrams in the conference room; he is a man who is obviously passionate about physics and eager to communicate what his products can do.

The company’s pioneering project is the Clearview Sensor, which can be affixed to a structure’s frame and features a traffic light-style color system to inform a maintenance worker or inspector when too much pressure is being applied. For example, green indicates the proper amount, yellow means it’s too little and red indicates too much pressure. Actual statistical measurements can also be transmitted via wireless technology.

Roughly the size of a quarter, McKeown explains the sensors can be applied to virtually any surface. He also states they can withstand severe temperature extremes and are relevant for all types of users.

“Three markets we serve are transportation, industrial and construction,” he remarks. “But we’ll serve other markets in the future too.”

Practicality is king

According to McKeown, Delta’s approach is not one of mass production.

“What makes us unique is we identify an industry need, talk to customers, and customize and configure the technology,” he observes. “We don’t make a bunch of (sensors) and then go looking for customers. We can select resolutions for specific customers; that way they don’t end up paying extra costs for features they don’t need.

“We build prototypes and then source them out to third parties,” he adds, pointing out that’s how Microsoft produces the Xbox. “We’re not manufacturers and we’re also not a research and development company. We take existing technologies and gear them to customers’ needs.”

Not only are Delta’s products innovative, but they are functional



Delta Technologies President Berin McKeown enjoys explaining the science behind the technology that drives his Carmel start-up. The company’s Clearview Sensor can be attached to any structure and its easily interpreted color system notifies inspectors that a structure is being compromised.



Delta's Clearview Sensors can be affixed to beams of cranes, wind turbines and most structures.

in a world that's more aware each day of environmental impact.

"We can power our units with energy harvesting techniques," he says. "We want our technology to be green and socially responsible. That's why it's lead-free and RoHS (Restriction of Hazardous Substances Directive) compliant. We don't want to put more toxins in the environment."

He adds that Delta can power its systems using energy in the ambient environment, such as solar, thermal and kinetic.

Everyday uses in a dangerous world

To contemplate the breadth of Delta's capabilities, one must think on a wide scale. Relevant to much more than cranes, McKeown explains his technology can provide crucial information during the most critical times. He uses a burning building as a prime example.

"If a building heats up, the columns lose tensile strength," he explains. "If sensors are in the columns, they can tell you there's a fire and then send that strength information to the fire department. Then, a fireman would know if they only have two minutes to get people out of the building."

He also maintains that bridge collapses, like the one that occurred in Minneapolis in 2007, could be avoided if inspectors are aware the structures are unstable.

"Now is the time to put this (technology) in place; most of our infrastructure is over 50 years old," McKeown asserts. "There are over 500,000 bridges in the United States, and about 250,000 are categorized as deficient."

Additionally, Delta could help prevent tragedy on American highways, according to McKeown.

"On U.S. highways every day there are four trucks that lose a wheel – not a tire, but the whole wheel," he says. "Many of those are at high speeds and fly into oncoming traffic. Sensors on those parts would let the truckers and fleet management know the wheel needs to be fixed before that happens."

Rising above

The company began in 2008, and initially planned to work with original equipment manufacturers. However, the struggling economy forced it to change its business paradigm and focus on end users.

"That move worked well for us," McKeown says. "We already have two contracts since we changed our strategy."

While establishing a start-up during a recession and in a world with seemingly little available capital is challenging, McKeown notes some positives for his business.

"It's easier to get SBA (Small Business Administration) loans now because marginal businesses have been taken out of the loop," he offers. "That frees up more for people with proven technology."

He also contends that slow and steady growth is ideal for companies such as his, which utilized contractors in the early going (the company had four employees at the time of this writing with plans to grow in the near future).

"I believe one reason tech companies fail is they have too much overhead up front," he asserts. "I'd rather have more work than we can do in the beginning and then farm it out just to be safe."

"As we start picking up additional contracts, I want to pick up more technologists and commercialists," he adds.

Delta is also appreciative of the Indiana Economic Development Corporation and Small Business Innovation Research efforts in Indiana, which McKeown cites as being quite beneficial in a state that's already well-suited for investment and business.

"Indiana has great universities and a great labor pool," he surmises. "It's also ideal because it's a central hub."

McKeown, a military veteran who served in the Balkan Wars in the 1990s, adds that he's lived in seven countries in the past 18 years and eagerly calls Indiana "one of the best places to raise a young family in the world." It's a world he hopes his company will make safer for years to come, as he concludes by expressing why taking this technology to market is truly imperative for him.

"I've seen a lot of needless death," he reflects. "I'm proud this technology can save lives."

INFORMATION LINK

Resources: Berin McKeown, Delta Technologies, at www.delta-techs.com