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Spotlight on Education

U-M transit research leads to biz

Premium content from Minneapolis / St. Paul Business Journal by Katharine Grayson, Staff reporter

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When [Henry Liu](#) began researching ways to make traffic signals more efficient, he never considered that his discoveries could one day become marketable products.

But Liu might one day see technology he and his research team developed at the **University of Minnesota** improve traffic conditions in a growing number of U.S. cities. His technology will become a core product for Smart Signal Technologies, which is one of two transportation-related startup companies that have spun out of the university in recent months. The other is Drive Power, which will market a mobile application for teen drivers.

The university has a long history in transportation research through groups such as the Intelligent Transportation Systems Institute, the Centers for Transportation Research and Intelligent Vehicles Laboratories. That expertise is now translating into business opportunities.

St. Paul-based Smart Signal is preparing to roll out a software product that will help cities better manage traffic flow. The company analyzes data collected from traffic signals. Cities can use that information to adjust traffic lights in real time if there's an accident or other incident creating congestion. It also allows municipalities to better study traffic patterns and adjust "green time" on signals accordingly, Liu said.

While transportation departments are frequently aware of traffic issues on freeways, that's often not true for other roadways.

"People don't know what's going on on parallel arterial roads," said Liu, an associate professor of civil engineering.

The university licensed Liu's technology to Smart Signal in October and hired [Ken Shain](#) to serve as president and CEO of the firm. Shain has led several technology companies and is a former vice president of sales and marketing for **Image Sensing Systems Inc.**, a St. Paul-based traffic-technology company.

Smart Signal has yet to fully roll out its technology, but it's seen strong interest from municipalities, Shain said. The Minnesota Department of Transportation, which helped fund Liu's research, uses the technology along Highway 55 in Golden Valley, as well as at sites in Bloomington and Eden Prairie. Pasadena, Calif., also uses it.

Smart Signal will sell its software as a service, meaning that cities would pay a subscription to access it. Customers won't have to buy high-priced hardware and install it in traffic signals, which keeps costs down.

The market for traffic technologies is large, totaling about \$48 billion in 2009, but it's overly crowded with competitors, Shain said.

Chasing distracted teens

While Smart Signal aims to grab the attention of cities, Drive Power will chase after an entirely different group of customers: teenagers and their parents. The company developed a smartphone application that helps teens avoid distractions while driving. It blocks text messages and prevents teens from making calls, unless they dial 911. The app, called DriveScribe, also monitors the speed of the car and compares that against a database of legal speed limits.

With the goal of reducing crash rates among teen drivers, the university initially developed a "big honking computer" that connected to and monitored a vehicle, said [Alec Gorjestani](#), a University of Minnesota research fellow who worked on the technology. He now also serves as vice president of technology of Minneapolis-based Drive Power. The university later shifted its approach to focus on ubiquitous smartphones, which have built-in GPS technology.

After the university's research steered toward mobile phones, Gorjestani recognized the technology could become a product.

"I saw the potential in it," he said. "As Android started developing, and everyone was reading accounts in the newspaper of the teen crash problem, it was clear that there was a need, and we had a potential solution."

Drive Power plans to roll out its app in April. The company hasn't set a firm price for the product, but plans to charge less than \$10 per month, said CEO [Will England](#).

While teens may not always be motivated to become safer drivers, Drive Power officials expect the concept will appeal to parents, who will be able to monitor their children's activities via a website. The company also plans to incorporate social-media features into the product. It also may build in a loyalty-marketing component, where teens could win rewards for safe driving habits.

Meanwhile, Drive Power also is working on plans to target another market: auto insurance companies.

Insurers are increasingly interested in charging drivers based on their real-life driving habits, England said. For instance, The Progressive Corp. provides drivers with a device called Snapshot that tracks how many miles people drive, their speed and other behaviors. The company bases insurance rates on that data.

“The whole auto insurance industry is shifting to that type of model,” said England, who previously developed analytical models for the financial-services industry.

That shift in strategy presents opportunities for Drive Power, as its application can collect that data and provide a driver score to companies.

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A roundup of University of Minnesota spinoffs in 2011

The University of Minnesota spun off 10 startups in 2011. Here’s a list of those companies, according to information from the U’s Office for Technology Commercialization:

- Clinical Innovation Labs has developed technology that health care organizations can use to recruit patients for clinical trials and report on physician quality.
- Kingsbury Animal Health uses a compound called glycerol monolaurate to reduce harmful bacteria. The company is targeting the veterinary market.
- Minneamrita Therapeutics is developing a drug to treat cancerous tumors.
- United Science has developed sensor technology. Its products could reduce the amount of toxic byproducts generated by mining and other industrial activities.
- International Cardio Corp. aims to commercialize a treatment for atherosclerosis, a condition that causes the thickening of arterial walls.
- Collectis Plant Sciences is developing technology for modifying genes to create specific traits. The firm is a subsidiary of a French biotech company Collectis.
- Upstream Technologies is commercializing a device that can improve sediment control and storm-water runoff, thereby improving water quality.
- Aria CV is developing technology for treating high blood pressure.
- Ninja Metrics is a software company that analyzes data to discover the “psycho-social motivations” of video-game players.
- Smart Signal Technologies is commercializing traffic-management technology.

— Katharine Grayson, staff writer

Katharine Grayson covers med tech, clean tech, technology, and venture capital, and she writes the Innovation|Minnesota blog