



Ontario Centres of
Excellence

Where Next Happens

Every Step of the Way

"From work on a technology idea with some of my students to the formation of a company and identifying new opportunities, the Ontario Centres of Excellence have been part of the Mechworks success every step of the way."

Dr. Farid Golnaraghi, Mechworks Systems Inc and the University of Waterloo

It began with a professor involving some fourth-year students at the University of Waterloo. Today it is a thriving company involved in a new joint venture and providing a competitive edge to Ontario.

The story of Mechworks Systems Inc. is also the story of Ontario Centres of Excellence (OCE) Inc., and the kind of partnership that brings success.

OCE is one of the few publicly funded institutions that builds the bridges from university research to the marketplace. OCE helps provide what is needed for innovative science and technology to be transformed into profitable new businesses.

The Mechworks Systems Inc. story begins with Dr. Farid Golnaraghi at the University of Waterloo – an expert in vibration and control systems and accelerometers. These are sensors that are strategically mounted on large machinery that identify vibration signatures of rotating machineries. Dr. Golnaraghi had

some of his fourth-year students working on sensors with funding assistance from OCE. These so-called "intelligent sensors" contain a microprocessor that allows the sensor to either process information itself, or to send information to another source.

With additional support from OCE, a technology using intelligent sensors for automotive applications was then readied for commercialization.

"We were able to form a company to bring our technology to market," says Dr. Golnaraghi. "Having been with me from the outset, OCE once again helped us through the Market Readiness Program and Mechworks Systems Inc. was born."

The next step was working with U.S. firms based in the Toronto area providing active suspension systems for military applications, allowing for a low-cost and high-performance intelligent sensor for terrain vehicles. With such a sensor, the vehicle can detect the kind of terrain on which is riding and adjust accordingly.

Expansion to Ontario's automotive industry came next, where intelligent sensors have many uses. While a number of high-end vehicles already have sophisticated sensors,

this technology can bring them to the more moderately priced cars and trucks. For instance, intelligent sensors are useful in airbags and control systems.

"We are working in the automotive industry through a very exciting joint project with Polymer Technologies in Cambridge, and together we have formed Mechworks Automotive Safety Systems Inc (MASS)," says Dr. Golnaraghi. "We are working on a variety of sensor projects that will continue to bring low-cost, high-performance technology to automakers, who can then increase their competitiveness in the marketplace."

"What is compelling about the Mechworks story is that it emphasizes a desired technology that is both competitive in price and innovative in approach," says OCE's George Wright, who has worked with Mechworks from the outset. "They've gone after a market niche. They have aimed at being well-priced and good at what they do."

Mechworks has recruited new engineers and management personnel. Poised on the edge of another success, the Mechworks story is an OCE story from start to finish through its different programs that help bring ideas from research in Ontario's universities and college to the marketplace – and in this case, beyond!