An Entrepreneur's Story

June 2008

Dycor Technologies Ltd.

Something's in the air, and it smells like success for Canada's largest and most experienced biological detection company. From their 25,000 sq. ft. Edmonton R&D, testing and manufacturing facility, Dycor Technologies Ltd. provides high-sensitivity biological detection systems to military, civil defense, public health and agricultural security clients worldwide.

While this field is still in its infancy when compared to chemical and nuclear detection, Dycor, which was established in 1981, has made itself into a leader in biological detection technology, equipment, and services. "This is a highly complex field, and while we're able to detect airborne pathogens and collect them for study, immediate identification is still a ways away," said Dycor's VP of Marketing, Markus Lemke.

C-FLAPS is the latest biological detection system from Dycor and its U.S.-based partner TSI Incorporated. The system is based on fluorescent laser aerodynamic particle sizing technology pioneered by Dr. Jim Ho and his team at Defense Research and Development Canada - Suffield, a leading authority on aerosol science and applications of fluorescence excitation for biological identification. "The main reason we are a world leader is our ability to limit false alarms," said Lemke. "Though this product is fully commercialized, and has been on the market for a number of years, the demand is always there to improve upon it, to make it smaller, lighter, cheaper, and use less power."

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In addition to military applications, Dycor has expanded into agriculture, public health and security applications. During the 2004 Avian Influenza (H7N3) outbreak in B.C.'s Fraser Valley, Dycor's XMX aerosol sampler captured and kept viable the AI virus for forensic analysis and confirmation. The company is currently working on first response and compartmentalization protocols for Avian Influenza outbreaks. Dycor's technology is also being applied for assessment of biological threats in transportation and border security applications.

Photo courtesy Government of Alberta
Edgar Semier, President and CEO, Dycor Technologies Ltd.

As a company, Dycor specializes in taking technologies to market, bridging the gap between pure science and full commercialization. "We know what works, and have the tools to assess and incorporate emerging capabilities," said Edgar Semler, President CEO of Dycor. "There are a whole lot of technologies sitting on the lab bench, and we've worked with other companies to test the viability of their technologies." The company has ongoing cooperative partnerships with biological research and development agencies in Europe, North America and Asia.

Photo courtesy, Dr. Christina Kellogg, USGS
This Kellogg Sampler unit in Barbados captures dust samples and any accompanying bacteria blown across the Atlantic Ocean from the Sahara desert.

Dycor's expertise and experience in the market has allowed it to not only attract interest, but resources from large organizations, most notably the Midwest Research Institute (MRI) in Kansas City, Missouri. In November 2007, MRI made an equity investment in Dycor as a minority partner. "Both companies have R&D expertise in biological and chemical detection, and in the oil & gas and renewable energy sectors, making it a highly complementary match," said Semler. "MRI has expertise in research and development up to the pre-commercialization phase, while we have a proven track record in moving technologies to market."

The company also serves Alberta's oil and gas industry through Dycor Controls, providing data collection and transmission capabilities to remote, hostile and limited infrastructure environments. While the two business areas may seem to be unique, many of the skill sets of the staff, and Dycor's expertise as a systems integrator are transferable between the two.

"Alberta Advanced Education and Technology, and its agencies have been very helpful to us in terms of understanding what we do," said Lemke. "They've also provided important contacts for our company." He went on to add that the federal government's Scientific Research and Experimental Development (SR&ED) tax credit, and Alberta's new SR&ED tax credit is helpful in reducing the risks for companies looking to commercialize technologies in Alberta.

When asked what advice he would offer to someone with a good idea, Lemke said, "One of the best things you could do is spend the time to do market research and see if the market is there, rather than build a product and see if there's a market for it." He added that, "It's also key to find a partner, and learn how to work with them. "We've partnered with a number of major defence partners where, because of our technologies and expertise, we are treated as equals," said Lemke. "If you have a good idea, working with a major partner is important because they can take you into dances you can't get into yourself." He went on to add that if your technology is of interest to a government, it is in your best interest to hire as a consultant someone who understands what government wants and how they buy it. It's a wise investment that will save you from being tied up in a sea of paperwork.

Relevant location: Edmonton

Sectors: Life Sciences

Innovation system building blocks:

- Alberta Advanced Education and Technology
- University of Alberta
- Alberta Research Council
- Defense Research and Development Canada – Suffield
- National Defence Canada
- National Research Council Canada – IRAP
- National Institute for Nanotechnology

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Alberta Canada