From rural Ontario to global leader, SoilOptix® uses innovative tech and machine learning to map soil

A small business based out of rural Tavistock, Ontario is on its way to becoming a global leader in predicting soil health using innovative sensor technology and artificial intelligence (AI).

SoilOptix® offers a mapping solution that helps farmers analyze their soil and fields. This allows farmers to make better decisions about what to plant, when, and where. SoilOptix® is taking a traditionally manual process and bringing it into the 21st century.

Soil mapping is an essential process in farming that allows for sustainable land use. It can be used to know what types of food to grow in certain areas or even where it is best to put a new building. It can help farmers be more precise with the application of fertilizer, seed, and watering.

A detailed understanding of soil can help save money, optimize agriculture operations, and increase productivity. For instance, farmers often need to change the type of crops they grow in their fields every few years. It's a key part of long-term soil and farm management as it reduces diseases and balances nutrients in soil.

"They want to know where the pockets of opportunity are," said SoilOptix® CEO and Founder Paul Raymer.

Raymer spun SoilOptix® out of his family business, Practical Precision, which he founded along with his father Barry in the early 2000s. Practical Precision operated as a reseller of precision agriculture technology.

The opportunity for SoilOptix®'s mapping technology came about when a European researcher reached out to the Raymers with a newly developed soil mapping technique. Over the next few years, the Raymers worked to validate the technology with local farms in Ontario and soon gained popularity in the United States. By 2017, SoilOptix® became an independent startup and formed a partnership with China's largest fertilizer-additive company, Hubei Forbon Technologies, which sells SoilOptix®'s solution in China.

Today, SoilOptix® has an international presence in 21 countries, including 10 countries in Europe thanks to partnerships.

SoilOptix® is part of a massive global movement to integrate technology, specifically sensors and AI, into agriculture. Reports have estimated that the worldwide market value for AI in agriculture will boom by more than 500 percent over the next decade to more than $10 billion US.

Given Canada's strength in agriculture, SoilOptix® is one of many Canadian startups at the forefront of the AI in farming movement. AI is being used to monitor crop health, automate things like irrigation and pesticides application, and more.

SoilOptix® started to integrate AI into its solution over the last couple of years. Through three separate projects funded in-part through OCI, SoilOptix® began developing machine learning techniques to

increase the speed with which it can turn data into soil insights for farmers. Those programs included IBM I3 Customer Demonstration Program and Next Generation Networks Demonstration Program.

Through the IBM I3 program, SoilOptix® worked with a McCain Foods subsidiary to provide its growers with the startup's technology. OCI is also proud to have funded projects SoilOptix® undertook with Niagara College that helped the startup develop its data processing portal that has been called SoilOptix®'s "lifeblood."

SoilOptix® is now ready to take its AI tech out of beta and scale it more broadly. With such sizeable opportunity in the agtech market, SoilOptix® is working to become the global leader for topsoil mapping.