Eyeing the next tech wave

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Brent MacDonald, CEO of Xiplinx. Xiplinx has developed software to help manufacurers and other industrial clients gather, track and interpret regulatory compliance data.

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FREDERICTON • Kumaran Thillainadarajah is convinced of the potential presented by the Industrial Internet. But it's apparent that not all his customers share his enthusiasm.

Thillainadarajah, originally from Sri Lanka, is the founder and chief executive of Smart Skin Technologies.

The Fredericton-based startup, which developed from computer engineering research at the University of New Brunswick, is helping some of the world's biggest brewers improve their production lines and, most importantly, save money – potentially millions of dollars.

Smart Skin's main product is a polymer film or "skin" that – using nanotechnology – measures the pressure applied to it. The skin can be applied to a drone beer bottle or can, and then run through a brewer's production line. Moving along with the other bottles or cans, the drone reports the pressure exerted on its sides. The line operator can then adjust the settings to ensure the pressure does not crack or dent the cans and bottles on the line.Though only formed in 2009, Smart Skin boasts a client list that includes six of the top 10 beer brands in the world. The company is already profitable and has an office in Europe. Earlier this year, Thillainadarajah announced a $3.9-million Series A investment round. Gerry Pond, the first angel to invest in Smart Skin, has said the startup could be as successful as Radian6 and Q1 Labs, two other New Brunswick-founded companies that were eventually bought by big Silicon Valley tech players.

What explains Smart Skin's quick rise and potential? Part of the answer lies in the company's presence in the rapidly growing Industrial Internet sector.

The term "Industrial Internet" was reportedly coined by officials at General Electric, the American industrial behemoth. Broadly defined, the concept involves connecting machines, factories and devices through Internet technology. The sector draws heavily on cheap computing power and sensors, as well as innovative software and big data analytics.

In essence, it involves combining the factories and machines of the Industrial Revolution with the computing, information and communication systems of our current Internet Revolution.

According to a 2012 GE report, the Industrial Internet will produce significant savings and efficiencies in sectors as diverse as aviation, rail transportation, power generation, oil and gas development and health care. The sector could also produce more than $32.3 trillion in economic activity.

Estimating conservatively, GE predicts that a one-per-cent boost in efficiency could result in commercial aviation fuel savings of $30 billion over 15 years. Similarly, global health care savings could total $63 billion, while the world's fleet of gas-fired power plants could save $66 billion in fuel costs. "With better health outcomes at lower cost, substantial savings in fuel and energy, and better performing and longer-lived physical assets, the Industrial Internet will deliver new efficiency gains, accelerating productivity growth the way that the Industrial Revolution and the Internet Revolution did," the report's authors noted.

Despite the immense potential for a bump in their bottom lines, Thillainadarajah reports that many Smart Skin customers have not yet embraced the power of the Industrial Internet. In fact, many Smart Skin clients have not fully connected their operations to the Internet. "When we have a software update, often times it's faster for us to mail them a USB key containing the new software, than to try and get them to download it. We're dealing with challenges like that," Thillainadarajah said. "But I think there is change coming."

Smart Skin is one of at least a half dozen New Brunswick companies seeking success in the Industrial Internet sector.

Another is Xiplinx Technologies Ltd.

Based in Saint John, Xiplinx (pronounced Zip Links) has developed software to help manufacturers and other industrial clients gather, track and interpret regulatory compliance data.

The company's app simplifies the data collection process for technicians. The data is then processed and used to help the company comply with the rules and regulations governing its specific industry. For instance, a food processor could use the software to help it comply with food safety regulations.

One major goal of the Industrial Internet sector is technology that allows machines to track their own performance and make adjustments when required – without the need for human intervention. (Software developed by Fredericton-based Eigen Innovations is intended to do just that.)

Xiplinx's technology, however, is still reliant on the human touch.

“You really can’t take the technician out of the equation completely. No one is ready to completely trust machines,” CEO Brent MacDonald said in an interview. “People still have a role to play.”

Xiplinx has 10 paying clients, including an aquaculture company and other food processors. MacDonald expects that number to at least triple in 2014.

“We really should see a lot of growth this year. From an Industrial Internet perspective, there’s a real appetite to invest in this type of technology,” he said. “It’s an interesting opportunity for this region. Richard Jones agrees. The CEO of Eigen Innovations, which is now testing its software with a dozen industrial clients, says Atlantic Canada has an emerging cluster of Industrial Internet companies. That cluster, he argues, could become a significant hub, in part because the emerging Industrial Internet sector lacks dominate players – at least for now. “No place in the world is way ahead of anyone else. It’s the Wild West right now. People are just starting to wake up to the potential,” he said. “In the not-too-distant future it’s going to hit mainstream and there will be an explosion.”

Clearly, though, there is already competition. In December, Toronto’s McRock Capital announced a $50-million Industrial Internet venture capital fund. The fund will target “high-growth” companies across Canada and the U.S.

Jones believes there’s currently an “even playing field” amongst the emerging competitors. It’s a fact he’s hopeful East Coast Industrial Internet players can capitalize on.

“Companies that are moving the fastest and innovating with their customers will be the winners,” he said. “It won’t matter what geography your company is located in. If you can’t get connected to global customers right out of the gate, and learn to innovate with them, you won’t be a significant player in the Industrial Internet space.”