From Wellhead To Slurpee Machine: Zedi Leverages Oilpatch Tech To New Sectors

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Digitalizing the oilfield may be all the rage in technology circles as the oilpatch strives to achieve lower costs in today's low commodity price environment, but one Calgary company is old hat when it comes to the application of Industrial Internet of Things (IIoT) to optimize field assets.

In a growing field of digital start-ups, Zedi Inc. has quietly built upan IIoT platform that now encompasses over 1.4 million sensors in 25 countries, generating over 50 million readings per day. Now, the company is turning its digital strengths to other industries, from agriculture to renewables to the retail food sector.

The company was one of almost a dozen oilpatch companies to attend a recent Calgary Economic Development-organized summit in Silicon Valley to bring them together with a similar number of high tech companies in the valley with whom they might be able to co-operate to bring new digital technology to the oilpatch.

Best known for technologies to remotely monitor oil and gas assets and crunch the data to generate cost-cutting insights, Zedi started its diversification program about 16 months ago and is beginning to see results, said Matthew Heffernan, Zedi chief executive officer.

"We have been diversifying based on the solid foundation the energy sector has and continues to provide us," he told the *DOB*. "We have put down what I term the green shoots and they are starting to come up — now we have got to get them to harvest."

Digital technology robust enough to survive in the harsh conditions of the Canadian oilpatch are sturdy enough to withstand conditions in just about any other application, the company has found. It is just a matter of adapting it to new purposes — like maintaining frozen carbonated beverage machines in 7-Eleven convenience stores, one such successful application.

Specifically, by putting its proprietary monitoring devices on the syrup and CO_2 containers and machinery used for slushy drink dispensers, connected via its low-power wide-area network (LPWAN), Zedi was able to monitor machine performance and track when and how often consumables ran out. With its proprietary software it examined all the pertinent data points to help the company schedule times to check and refill the machines before they could reach their mean time to failure.

"Believe it or not, a slurpee machine is more complex technically than a gas well," said Heffernan. "There are 16 sensors on a slurpee machine and only eight on a gas well."

Similarly, Zedi has applied its hardware and software to the livestock industry — where, for instance, it monitors information on feed, water supply and living conditions on a 45,000 chicken operation on a farm in Montana.

And on farms in Nebraska it paired its wireless LPWAN technology with third-party soil moisture and temperature sensors to monitor crops. Data uploaded from the field to the Zedi IIoT platform allows farmers to access it in the form of reports, dashboards or data exports from a web browser. Models can then be created to drive automated equipment such as irrigation pivots or tractors to deliver the right amount of water, nutrients and pesticides to the right location, at the right time, the company said.

Zedi can collect, analyze and provide feedback to wind turbines, solar thermal systems, photovoltaic panels or battery storage systems. Tied to its cloud analytics, the technology generates insights from the data that businesses can act on immediately to cut costs and increase efficiency.

Oilpatch expertise

The company is well positioned to transfer the technology precisely because of the expertise it created for the oil and gas industry, Heffernan said. “What we have developed and deployed is extremely resilient because it is for the energy sector, and we now have enough [sensors] out there that we can now have economies of scale.

“So we are offering these very resilient solutions to customers who otherwise couldn’t afford it, who have more consumer-style budgets. We bridge that gap, and for consumer pricing we are effectively giving them a very industrial solution. It is resilient and exacting to the sensor and auditable to the molecule — those sorts of things are probably overkill for a slurpee machine, but they get the benefit of all of that. And it’s one platform, so we don’t care whether it is a slurpee machine or Schlumberger — everybody is coming in to one and only one platform.”

Not only is the oilpatch-developed technology readily transferable to other industries, but Zedi has found that it works both ways. “We are now starting to see is it reciprocates,” Heffernan said. “What we had to invent for a farm in Nebraska or for 7-Eleven we are now bringing back into the energy sector.

“For example, on a wellsite everything is wired, whether it is to a tank or a pump or to a compressor. What we had to invent for 7-Eleven forced all of that to go wireless. We are now taking that wireless solution back into energy. So you get the benefit of all that, costs drop dramatically, and the redundancy is as good if not better than it was when you had to wire it.

“That’s where we are starting to invest in artificial intelligence, neural networks, blockchain, those types of technologies,” he added. “But we are always a for-profit company so we do this with profitability and return on investment in mind, not as a science project.”

Though the new ventures compose only a tiny percentage of overall company revenue, given its high volume of oilpatch business, Heffernan said the green shoots are showing such impressive results that as of this month he will transition to president of the company’s new ventures unit, retaining his CEO title but largely turning the energy side of the business over to one of the company’s other presidents.

“I will be pursuing, not exclusively but primarily, all of these new ventures, so I have very high expectations of this one,” he said. “I believe we could double our sensor count outside of the energy sector within two years — and it took us 20 years to build it in the energy sector.”