

STARTUP

PetroPredict has oil well problem fix

Julie Stauffer, Special to The Record

The ink is just barely dry on Dominic Toselli's degree. His colleague Andrew Andrade just wrapped up his second-year exams in April. But in spite of their youth — Toselli is 22 and Andrade is 21 — the two founders of PetroPredict are already making a big splash on the startup scene with software they claim could save the oil and gas industry millions of dollars a day.

The idea for PetroPredict came to life at a campus club. The pair of University of Waterloo engineering students had seen the power of advanced data analysis techniques on work terms in Silicon Valley. Why not apply that to a pernicious oil patch problem: detecting well casing leaks, they thought?

After a well is drilled and producing, stress and corrosion can create cracks in the well casing. Those cracks can leak oil, contaminating groundwater, releasing greenhouse gases and siphoning away profits. A 2014 University of Waterloo report estimates that 10 per cent of all active and suspended oil and gas wells in British Columbia leak. In Saskatchewan, say authors Maurice Dusseault, Richard Jackson and Daniel MacDonald, 20 per cent of wells are affected. Multiply that by more than 550,000 energy wells in Canada — plus 15,000 new ones added each year — and you've got a sizeable problem.

Currently, the only way to detect a leak is to shut down the well for several weeks while a team of specialists gets busy with sensor equipment. Between direct costs and lost production, it's a pretty pricey proposition.

Toselli and Andrade started sketching out a better approach. First, develop software that can mine a mountain of data on casing leaks, looking for common factors. Next, feed in another mountain of geological data and production figures for untested wells. Bingo, the software spits out a list of untested wells most likely to leak, all without setting a single boot on the ground.

The pair pulled together a business plan and began pitching it at business competitions. Soon, the prizes rolled in. In March, PetroPredict took home \$25,000 in the University of Waterloo's Velocity Fund finals. In May, the pair brought their pitch to OCE Discovery, Ontario's premier innovation trade show. Not only did they win the \$5,000 elevator pitch competition, they also beat out nine other finalists to triumph in the \$25,000 David McFadden Energy Entrepreneur Challenge.

These days, if they're not jetting off to Calgary to woo prospective customers, you'll find Toselli and Andrade at PetroPredict headquarters in the Velocity Garage in the Tannery building in downtown Kitchener. Andrade has put his degree on hold, and he and Toselli hired co-op students to help them realize their vision of revolutionizing how the energy industry makes decisions.

It is all a bit heady for a pair whose only entrepreneurial credentials are Toselli's experience running a small photography business as a student. "Of course there are hesitations, there are worries," says Toselli. "But we just take it step by step." He points to their strong business case, the



University of Waterloo graduate Dominic Toselli founded PetroPredict with fellow student Andrew Andrade.

fresh perspective they bring from work terms spent in both Silicon Valley and the oil patch, and an impressive track record of innovation.

On a work term at Apple, Toselli developed a twist-and-lock mechanism that makes it easy to swap camera lenses on your iPhone. It also protects the lens if you happen to drop the device. Patented by Apple, it has generated plenty of buzz on tech blogs. At Shell, his insights into the cause of failing heat exchangers have created \$1 million in annual savings and earned Toselli a UW co-op student of the year award in 2012. This year, Maclean's magazine named him one of Canada's future leaders under 25. Meanwhile, as a co-op student Andrade saved Facebook \$1.4 million in hardware costs. "That gives us confidence to take it to the next level and solve bigger problems," Toselli says.

PetroPredict is currently partnering with a

multi-billion-dollar oil and gas company to pilot its technology. Toselli is tightlipped about what their next steps will be. However, he does say the startup has attracted attention from a number of investors.

Toselli admits he's not getting a whole lot of shut-eye, but that's nothing new. As an undergraduate, he played varsity squash and founded two university clubs. In his spare time, he taught himself Italian so that he could spend a term at the Polytechnic University of Milan. Despite all that, he still managed to make the Dean's Honours List at UW. With revolutionary ideas to commercialize, sleep can wait a little longer.

"What we're doing is helping solve an environmental problem in industry, and we're also helping save the industry a fair bit of money," says Toselli. "That's probably one of the most exciting aspects of it." ■