

New Scale's 'cobots' more accessible for smaller manufacturers



Photo provided

A Q-Span Workstation is assembled at New Scale Technologies in Victor.

By VELVET SPICER

It used to be that automating a manufacturing floor would carry a minimum investment of \$1 million. With new technology and the use of collaborative robotics, business owners now can invest one-tenth that amount.

It's a message New Scale Technologies Inc. is sending to its current and potential customers through its new division, New Scale Robotics.

"What that means is this work station costs about as much as hiring a person for a year," said company founder and CEO David Henderson. "So you're looking at payback times that are less than a year."

Add to that increased productivity and flexibility and it's a win/win, particularly for small and medium sized enterprises that previously were left out in the cold because of the cost constraints of automation equipment.

Henderson founded New Scale in 2002 and the company got its start making tiny motors and motion modules for various applications, primarily for moving the lenses in smart phones. New Scale promoted that application and received significant investment, working with several companies, including Foxconn, a Taiwanese multinational electronics contract manufacturer, to promote it worldwide.

For a decade, New Scale worked on that technology, until the industry went in a different direction. In 2012, Henderson said, the company used the technology to move things on a very small scale and applied it to medical, industrial, aerospace and defense applications.

"Our technology moves lenses that focus microscopes and blood analyzers," Henderson noted. "We're working with a major robotics surgery

company and providing the focus for cameras that are inside the body that allow more precise endoscopic surgery. We're providing cameras that are used for optometry and clinical use in eye examinations."

New Scale also has a lot of NRE, or non-recurring engineering projects and its technology is in a spectrometer that is used in the Subaru telescope in Hawaii. More recently, the company has a system that is used for positioning probes for brain research in animal studies.

"Those were the types of things we were doing up until about 2016, when we started looking at a new market, and that's in robotics, and especially the new trend toward collaborative robots," Henderson recalled. "These are robots that are safe to be around people. They are forced to be limited. You don't program these robots, you teach them."

And that opens up automation to high mix, small batch manufacturing, he said.

"What if you're a small company and you make 100 different products a year? How do you automate when you have to constantly change what you're building?" he asked.

Collaborative robots, or cobots, can give smaller companies that ability.

In 2018, New Scale began its New Scale Robotics division, working with robots from one of the world's most well-known manufacturers, Denmark's Universal Robots. Universal Robots makes the "arm" that New Scale Robotics' "hand" attaches to.

New Scale's new Q-Span Systems cobot would be applicable to any industry in which people would be measuring parts with calipers, Henderson said.

"There are people all over the country and the world that, that's all they do all day. They sit at a bench and

they pick up parts and measure them. It's very much a manual, person-driven process," he explained. "We can replace that. That person can literally stand up, move the chair out of the way and a Q-Span can be rolled in and can automate that job and that person's job is to feed it parts and teach it to measure other parts."

And in the age of COVID-19, the Q-Span can create the opportunity for social distancing because the robot could sit between two workers, creating a safer and more productive work environment, Henderson said.

But isn't that just eliminating human workers?

"It really isn't. And in fact, in a lot of companies, this is the hardest job to sell. It's the bottleneck, quality automation," he explained. "There are a lot of challenges in having a person do the same thing over and over again. When you're measuring a part, how you hold it, how much you squeeze, how you position the part in the caliper, those are really critical variables that humans have variation on. You get tired. You get distracted."

"With robotic solutions you improve your precision. You can increase your capacity without increasing staff," he added. "And you raise skill levels of the people you have. You can attract new people easier and keep them engaged more in the work they do. Because they have higher skills, the average wage is going to go up."

Some types of automation have been around for more than five decades. Engineers walk in, install the equipment, prove it works and all the operatives do is push a button.

"The idea of collaborative automation is the people on the floor are empowered to change over to different parts, to make adjustments as needed, so they're part of the teaching



Henderson

process," Henderson said. "Their human skills to problem solve and make things better are always available."

It's an industry that has the potential to go gangbusters. Market analysts suggest that the global collaborative robot market could grow from roughly \$981 million in 2020 to \$8 billion by 2026, with a compound annual growth rate of more than 40 percent over the next six years.

"We consider this a strategic growth opportunity for the company, the New Scale Robotics division," Henderson said. "The served market that we're going after is 10,000 or more installations in the U.S."

New Scale's objective is to grow 30 percent to 50 percent a year in the cobot space.

"Our core business that's been around now for almost 20 years has a good growth rate but it's less than 10 percent growth a year," he said. "We think this is a much higher growth dynamic."

While New Scale had a rough start to the year, the robotics division was one of 50 companies worldwide to be honored in the 202 RBR50 Innovation Awards presented by Robotics Business Review. New Scale Robotics joined companies such as Universal Robots, Boston Dynamics and Microsoft on this year's list of honorees.

New Scale's Q-Span Systems received the innovation award in the Application and Market Innovation category, which recognizes sector-specific, newly developed applications that deliver value, provide entry to new markets or improve performance over existing approaches.

If you can use a smart phone you can use this product, one testimonial stated.

"If you think about the new generation of workers coming into the market, what's the one skill they all walk in the door with? They are experts at using the smart phone, running apps. They understand the digital world. And that's exactly what these new products will offer," Henderson said. "My view is in the next 20 years when you walk in the door as a manufacturing person, the first thing you're going to ask is where's my robot? Today the first thing you ask when you walk in the door is where's my PC?"

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