

By **STEVE WILHELM**
 STAFF WRITER

Despite a difficult economy, Newton Research Labs Inc. expects to see its way to continued rapid growth.

Renton-based Newton makes machine-vision systems, a combination of hardware (including cameras) and specialized software that enables automated equipment to "see" what it is doing and react accordingly.

Newton has been so successful at bringing "sight" to robots and other machines that sales have doubled for each of the past two years, climbing to just under \$10 million.

Newton president and CEO John Bramblet expects sales of the company's machine-vision systems to climb 40 percent this year despite the difficult economy. Then he hopes to double sales again next year, largely due to a new line of airport security equipment Newton is developing.

Such growth would give Newton an edge over its handful of competitors across the country, said Nello Zuech, president of Vision Systems International, a machine-vision consultancy in Yardley, Pa.

While the machine-vision industry grew about 25 percent in sales last year, largely fueled by growth in microprocessor and electronics production, Zuech expects machine-vision sales to slide by about 20 percent in 2001. Assembly machines that can see what they're doing have become a critical part of the chip-making industry.

"With significant overcapacity in world-wide semiconductor and electronics industry, capital spending has declined appreciably this year, and with that, acquisitions of

machine-vision equipment," Zuech said.

Bramblet has been guiding Newton down some new paths since he arrived at the company three years ago. A former chief executive of several manufacturing companies, Bramblet has a lifelong hobbyist's interest in robots.

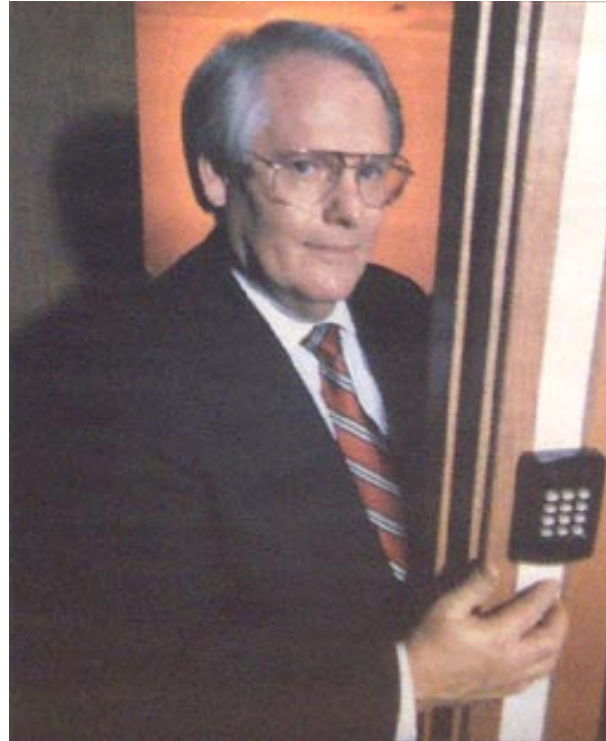
The company was founded in 1991 by a Massachusetts Institute of Technology lecturer and two computer science graduate students. They developed the essential technology of machine vision for a robotics project at the MIT Artificial Intelligence Laboratory.

The founders moved across country in the mid-90's to help Microsoft Corp. write code for its evolving Windows systems, and then moved the company to Renton in 1999 as they shifted toward the machine-vision market. Newton is named after a Cambridge street, near the MIT campus, where the company had its first offices.

Bramblet believes that machine vision will become more important in the increasingly automated factories of the future. Robots that can see can respond more flexibly and accurately to the work in front of them, as opposed to "blind" robots that must be programmed to work by precise instructions about where parts and assemblies should be.

For instance, a robot with machine vision can more accurately place windshields in a car than one that can't see, by locating exactly where the car is. "The robot never gets tired, it never goes on a coffee break, 24/7," Bramblet said.

Newton's airport security equipment is just one example of Bramblet's strategy of developing applications for the company's core machine-vision technology.



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Newton Research Labs president and CEO John Bramblet

BUSINESS JOURNAL PHOTO/DAN SCHLATTER
Newton Research Labs president and CEO John Bramblet projects a 40 percent increase in sale this year, after doubling revenues each of the past two years.

For instance, the company has developed equipment that one major bottler uses to see if juice caps are screwed on correctly. Another application rapidly inspects a stream of tiny plastic catheters, and rejects any that are flawed.

"The science is done. We make money selling applications," said Bramblet.

The airport security system attacks a problem known as "tailgating," when unauthorized people slip through limited-access doors. The Newton system will enable computers to "watch" people moving through doorways.

Newton also has been developing machine-vision systems that can see into nuclear reactors' steam generating systems, speeding and improving the periodic inspections. At the core of each reactor's heat exchanger is an array of up to 11,000 long tubes, each of which must be individually inspected with a probe.

Until recently, human operators guided the inspection probe into each tube remotely, a mind-numbing task that some-

times resulted in missed tubes and damaged probes. Newton's robot system uses machine vision to locate the correct tube and accurately place the probe, leaving the human operator to oversee the process.

"They had the technology that we saw was fast enough to do what we needed to do," said Chuck Handy, product development manager for Zetec Inc. in Issaquah, which manufactures reactor inspection equipment. "By using machine vision, we're able to automate the process... and speed up the test."

Zuech said Newton's development of markets other than microprocessors, and its willingness to sell through distributors, accounts for much of the company's growth.

"They seem to have a product that is very competitive, both in terms of its design and flexibility, to provide cost-effective solutions," he said.

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