BUSINESS

STOCK MARKET

FRIDAY
September 30, 2005

THE SAN DIEGO UNION-TRIBUNE

Technology Inc. | DEFENSE

Spinoff central

Itself a creation of Thermo Electron, R&D lab Trex has started 7 subsidiaries

By Bruce V. Bigelow
STAFF WRITER

As coincidences go, April Fools' Day is one of those dates that makes Kenneth Tang smile.

Tang was a top executive at San Diego's Western Research Corp. on April 1, 1988, when Thermo Electron Corp. acquired the business, which was known for its expertise in high-energy lasers.

Thermo Electron, of Waltham, Mass., was in the process of becoming a multibillion-dollar conglomerate with an unusual structure. It operated basically as a holding company for its high-technology subsidiaries, but it allowed public investors to own a minority stake in each business.

Inside: Technology Inc.

People to watch: Renney Senn, CEO, Crossflo Systems

Inside: Nuance Communications sues Yahoo for stealing trade secrets by hiring 13 key engineers for a project that was nearly completed. C5

Tang became president of the San Diego business, which was renamed Thermo-Trex Corp. and became one of Thermo Electron's publicly traded subsidiaries. The stock of Thermo Electron and its satellites soared during the tech boom of the 1990s.

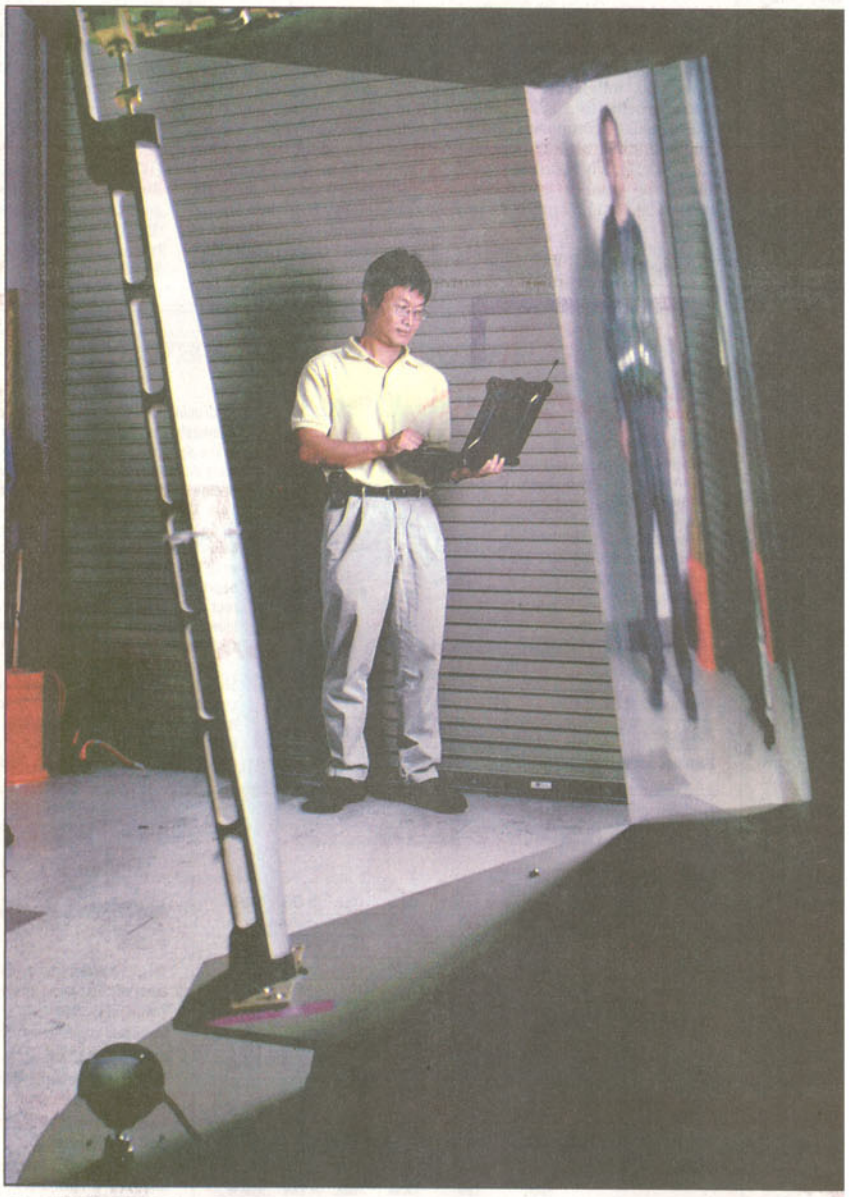
But the concept became unwieldy, and on April 1, 2000, Tang reached what he calls a "handshake agreement" to buy back the San Diego business amid a restructuring at Thermo Electron.

"We saw an opportunity, and we thought maybe we should take our future into our own hands again," Tang recalled. The fact that both deals occurred on April Fools' Day was just a coincidence.

In an echo of its Thermo Electron heritage, the company now known as Trex Enterprises Corp. has started seven subsidiaries since Tang led the management buyout five years ago. He has continued to operate the privately held company as a Pentagon-funded research-and-development laboratory — and as a business incubator for new technologies.

One subsidiary, Sago Systems Inc.,

SEE Trex, C5

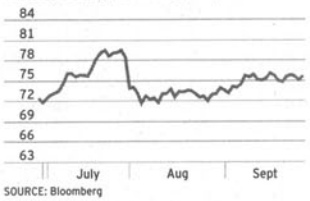


Alex Sihek, a Trex Enterprises engineer, displayed a device that uses millimeter-wave imaging technology to scan individuals for weapons and bombs. *Roni Galgano / Union-Tribune*

TECHNOLOGY INC.

San Diego Technology

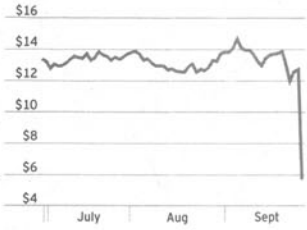
An index of the stock performance of 25 major San Diego County technology companies.



SOURCE: Bloomberg

Tech Stock of the Week | CYPRESS BIOSCIENCE

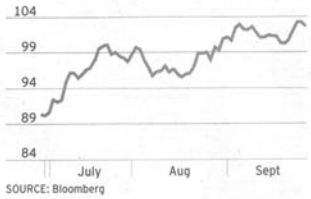
Shares of Cypress Bioscience lost more than half their value this week after the company said a study of its experimental drug to treat a painful muscle disorder failed to show benefits. The company has been developing the drug for fibromyalgia with partner Forest Laboratories.



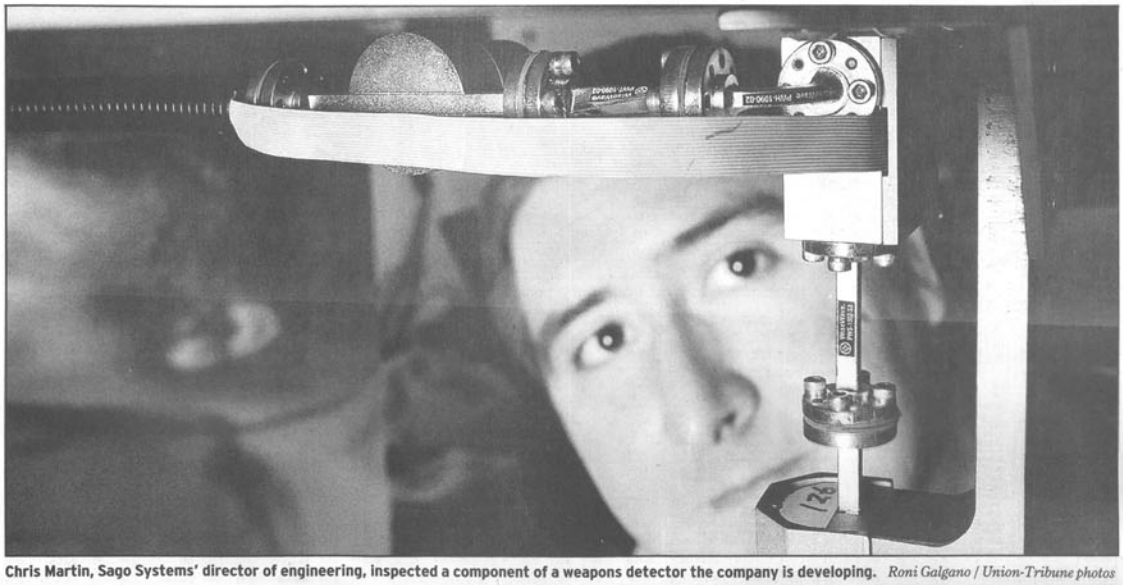
Headquarters: La Jolla
Chief executive: Jay D. Kranzler
Employees: 14
Revenue (2004): $14.4 million
Net loss (2004): $11.2 million
Market capitalization: $174.7 million
Year-to-date stock performance: down 60.7 percent
Exchange: Nasdaq

San Diego Life Science

An index of the stock performance of 41 major San Diego County life science companies.



SOURCE: Bloomberg



Chris Martin, Sago Systems' director of engineering, inspected a component of a weapons detector the company is developing. *Roni Galgano / Union-Tribune photos*

▶ **TREX**

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Tang says spinoffs aid entrepreneurs

has been developing a new imaging technology for use as a weapons detector at security checkpoints. An investment firm, Digital Power Capital of Greenwich, Conn., recently invested $2 million to help Sago commercialize various design approaches.

A prototype device can produce computer-generated images of guns, knives, plastic explosives and bombs concealed under clothing. Another version under development is a scanner that resembles the walk-through metal detectors used at airports today.

Much of the early development was done at Trex, under Army contracts to develop a millimeter-wave imaging system that could help pilots of helicopters and other aircraft see through fog and dust to avoid power lines and other hazards.

Another venture, Ophthonix Inc., has developed a laser-based diagnostic machine for use in optometry. The technology was derived from advances made at Trex and elsewhere in the field of adaptive optics, technology that uses lasers beamed through the atmosphere to help astronomers compensate for atmospheric distortion.

Trex transferred commercial rights to Ophthonix for a stake in the business, which also has received at least $7.5 million in venture-capital funding.

"What Thermo Electron gave us was the experience in what to do if you have a good idea," Tang said. "Thermo Electron actually gave us our first education in starting a company. They were there next to us, holding our hands."

In what may be another bit of irony, Thermo Electron overhauled its business in 2000 as part of a new strategy that focused the company on its core business of medical instruments and laboratory equipment.

In retrospect, "it seems pretty clear now that having 24 publicly traded subsidiaries was an unmanageable situation," said John Harmon, a Wall Street analyst who follows Thermo Electron for Needham & Co.

The Trex management buyout was part of a broader restructuring that Thermo Electron shareholders approved at a special meeting that August. The Massachusetts conglomerate did not break out details concerning the Trex deal in its annual financial statement that year.

Sago Systems intends to market this handheld weapons detector.

Based on his experience, Tang said he views spinoffs as the best way to encourage entrepreneurship among technologists.

But Tang said he wouldn't necessarily follow Thermo Electron's model of spinning off each subsidiary as a publicly traded company in which the parent company held a majority stake.

"We want the board (of each spinoff) to determine their own business plan, their own operations plan and so forth," Tang said. "The best thing to do is to provide them with technology and let the CEO decide what to do. Trex will just be an incubator; that's the best way to describe it."

"The market's view of the defense industry is reasonably positive," said Mark Jordan of A.G. Edwards & Sons in St. Louis.

But trying to build a commercial business from defense-based technologies is challenging, particularly in terms of funding the business, Jordan said.

"There comes a point where you need to invest more money than the government is willing to commit," Jordan said. "It can take a lot of time and capital, and at that stage that can be pretty expensive, because people who are willing to give you money want a pretty big" stake in the company.

Other defense companies have pursued a similar strategy, with varying degrees of success.

Titan Corp., which was acquired this year by L-3 Communications, followed a strategy through much of the 1990s that sought to incubate and commercialize technologies that were originally developed as part of its defense business. By 2002, however, Titan wrote off its last commercial ventures and shut down its spinoff strategy to refocus on its core defense business.

Trex has about 180 employees, about 60 or 70 more than it had five years ago, Tang said.

"It has a large critical mass of very talented scientists and engineers who have produced a wide variety of proprietary technologies," said Thomas B. Fargo, a retired Navy admiral who joined the company in March.

A former commander of the U.S. Pacific Command, Fargo said he joined Trex as an executive vice president because "I wanted to build something. I wanted to be part of something that was new and exciting and growing."

Tang declined to provide the private company's annual revenue, which comes chiefly from contracts issued by the Defense Department and other government agencies.

Last year, for example, the Air Force awarded Trex a five-year, $25 million contract to continue developing technology that can provide high-resolution images of orbiting satellites. The technology, which is classified, uses a ground-based laser to illuminate satellites, presumably those not operated by the United States. Photons bounced off the satellite are collected by ultrasensitive sensors and compiled to produce a computer-generated image of the spacecraft.

In part because much of Trex's work is classified, "the whole sales-and-marketing function just doesn't fit well within Trex," said John Lovberg, Sago Systems' chief executive. "So what Trex looks for is technology that is pretty close to commercialization and a market that is ready for it."

With its core expertise in laser technology, signal processing, electro-optics and other fields, Trex has launched a number of new ventures.

In addition to Sago Systems and Ophthonix, the company has launched five other ventures:

- Loea Corp. is developing extremely high-speed communications systems based on millimeter wave communications technology in the 70-, 80- and 90-gigahertz band. The business has its headquarters in Maui, Hawaii.
- e-Phocus Inc. is developing highly sensitive imaging chips that offer substantial improvements in resolution, cost and power consumption. The business is based in Maui and San Jose.
- CrossFiber has been developing a proprietary system for multiplexing equipment and cross-connect systems used to switch signals in fiber-optic telecommunications systems. The company is based in San Diego.
- Silicon Kinetics is focused on developing highly sensitive optical instruments and semiconductor-based biochips for detecting and identifying biological molecules. The business is based in Maui and San Diego.
- SecurPath Inc. has been developing wireless video intelligence technologies, including a portable wireless video surveillance system. The venture is based in Honolulu.

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