Neah Power Systems

Making Power Pint-Sized

By Brian Hill

Once recognized as one of Bill Gates' leading executives, Dr. Daniel Rosen was an early leader in the Internet and wireless data industries. After earning a Ph.D. in biophysics from U.C. San Diego, Rosen joined Bell Laboratories (formerly AT&T Bell Laboratories) as a research scientist and remained with AT&T for 15 years. Ultimately, he became AT&T's first director of marketing in Europe and then managing director for northern and eastern Europe. "Back then, you had to explain what the Internet was!" says Rosen. "My group was way ahead of its time." His group saw how the Internet and wireless devices would change daily life and commerce, and realized that AT&T was unlikely to lead that vision, so he moved to Microsoft in 1994.

"Those were heady times at Microsoft," says Rosen. "I was asked to put together Microsoft's strategy for wireless and Internet communications, resulting in a $5 million investment in UUNET." He wouldn't have guessed it at the time, but that $5 million skyrocketed to $600 million only 24 months later. Before leaving Microsoft to start his own technological journey, he established its New Technology group that had the responsibility of assessing, finding, and acquiring new technologies. He also put together the first Microsoft Internet search team after recognizing the impact that search would have on the Internet. "It was a great ride," he says.


Dr. Daniel Rosen, executive chairman and director of Neah Power Systems

He now takes the helm of Neah Power Systems (OTC BB: NPWS) as executive chairman and director. He first got his hand in the company when he made a reasonably sized investment through Frazier Technology, an early-stage VC fund he started in Seattle in 2000. Neah Power is developing long-lasting, always-on, efficient, and safe power solutions for portable electronic devices using micro-fuel cell technology. Popular applications include military electronics, notebook PCs, and other power-hungry electronic devices wishing to be freed from the tether of a power chord. Leroy Ohlsen originally founded the company and is now its CTO. He started Neah Power after watching a Discovery Channel program on fuel cells and their potential to lead the world in alternative energy sources—talk about acting on impulse.

But impulse is exactly what he needed to start this revolutionary company that currently has $35 to $40 million in total capital. "We have all become accustomed to being free to communicate anytime and anywhere; we have grown reliant on our mobile lives and the industry has accommodated us by creating a selection of wireless networks, but the one area where the industry has not supplied a good solution is power," says Rosen. While industry trends show a doubling in computer power every 18 months, battery power goes up only a few percentiles per year. The company wants to replace the age-old technologies of standard batteries with tiny fuel cells. "That's the world we are trying to create here at Neah Power."

The military has become a fundamental market for the introduction of new electronic devices as it has both the great need for power and state-of-the-art technology. There are several niche markets where batteries and other fuel cells just can't meet the needs. "The military market is very large," says Rosen. "The average foot soldier is said to carry over 27 pounds of batteries for a 72-hour mission, and a Special Forces sol-

dier carries 40!" That's more weight in batteries than food or ammunition. And the problem is getting worse as soldiers are outfitted with more advanced technological equipment. The amount of water and batteries a soldier can carry often defines the duration of a mission and likelihood of its success.

Because Neah Power's fuel cell is refilled through a cartridge, it will operate as long as new fuel cartridges are supplied. One fuel cell with a cartridge is expected to be much lighter and have greater energy capacity than that of a standard BA-5590 battery (the U.S. Military's most widely used portable power source). A soldier using fuel cell energy is expected to carry only eight pounds of the product for a 72-hour mission. The company calculates that it will save a soldier approximately 70% of that weight when its fuel cells hit the military industry. These fuel cells can also be run without exposure to air (perfect for underwater or buried situations), creating a very reliable and sturdy addition to the soldier's regime. "Now it's easy to see why the Office of Naval Research is working with the company on a project and why the military is so anxious to get its hands on it," says Rosen.

Using the military as an initial jump point, the company expects to enter the retail mobile markets by 2010. "We can anticipate how liberating it will be to have an 'always on' power source for our daily lives and what this will spur in new innovations that simply didn't exist before because of a lack for suitable portable technology," says Rosen. "This is what has me so jazzed about Neah Power." Its fuel cells are made from silicon wafers, the same material used in semiconductors used to run computers and other electronic devices. Fuel cells can produce continuous power as long as a fuel source is available. Instead of carrying around multiple batteries, only one cell is required with several lightweight fuel cartridges to accompany it.

Neah Power currently has 11 issued patents and is the only fuel cell company using this proprietary approach, having recently unveiled its BA-5590-alternative prototype in September 2007. And because its product is made from silicon, a product already present everywhere in our daily lives, it can skip a large section of research and development and eliminate the need to build silicon factories. The micro-fuel cell market is booming and the military will take a sizeable chunk (23.6 million fuel cell units are estimated) creating a multibillion-dollar industry by 2010. Its compound annual growth rate (CAGR) is expected to rise 154% from 2007 to 2010. The mobile life market will demand over 79.6 million fuel cell units and will have a CAGR of 206% by 2010.

While there is no current production products in this specific fuel cell market, the $8 billion battery market is already teeming with potential competitors. However, Neah Power has developed several strategic relationships and has a sound business model to help solidify its growth and position. "We have investments from Novellus Systems and Intel Capital—both are leaders in the semiconductor industry," says Rosen. Novellus is a Fortune 500 company and is the second-largest producer of semiconductor equipment. It invested $2.5 million in Neah Power and has senior employees on the technical advisory board. Intel has invested $1.75 million and is helping to influence consumer electronic designs. Recently, the company was invited to join the General Dynamics EDGE Partnership, a collaboration created by the U.S. Government for military-based companies seeking innovation and technology.

"And one of the most important aspects that I learned during my tenure at Microsoft is having a sound business model," says Rosen. The best way to be on top is to offer a commodity product with unique technology because then it generates both market share and good margins. Offering this niche application to markets where no other alternative is available, the company is creating its own market entry and long-term strategies.

"The company has a robust vision that is unique in the industry," says Rosen. "Our society is mobile-reliant and in almost every facet of our daily lives we are connected and are in touch with each other." Most soldiers now have more computing power than the Apollo astronauts, with devices such as night-vision goggles, satellite communications, smart weapons, and network sensors. And on the retail side, it's only growing. Most students carry networked laptops with DVD drives, MP3 servers, and Web cams—all of which require mobile power. "This is an exciting time to create innovative alternate energy solutions for these problems, and we are on the precipice of changing the way our always-on lives consume portable power." **E**

RISKS: *Neah Power is aiming toward a multibillion-dollar market, but it has several important technological steps to hurdle before doing so. At the development stage, investor confidence is very important, and historically, Neah Power's stock price has fallen, showing questionable investor assurance. Its stock price now resides at $0.20 as of Dec. 10, 2007. It has $35 to $40 million in total capital, but is mainly from venture capitalists. Because of this, the company shows no real revenue stream from selling its products. And while its fuel cells seem to be technologically advanced in every way compared to the BA-5590, initial customers will have to pay for that technology. Its products will be priced at a premium. Eventual goals will settle the price at two to three times that of a standard lithium ion battery. Time will only tell if customers are willing to pay the higher costs.*

MAKE CONTACT

NEAH power systems™

OTC BB: NPWS

COMPANY

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SHARE DATA

52-Week Price Range:	$0.17 - 2.02
Shares Outstanding:	116.15 million
Market Cap:	$23.23 million

BALANCE SHEET DATA
(as of June 30, 2007)

Total Assets:	$2.28 million
Long-Term Debt:	$0
Shareholders' Equity:	$973,785
Book Value per Share:	$0.01