December 18-24, 2001

Straight-talking technologist

Theresa Carbonneau saw the future

by Lauren Kramer

Beam me up: fSONA president and CEO Carbonneau saw a need to transmit data through laser beams. PHOTO: Dominic Schaefer

At 51, **Theresa Carbonneau**, president and CEO of **fSONA Communications Corp.,** exudes an aura of cool confidence. Her speech is deliberate, thoughtful and direct, and her British accent has not been clipped by her many years in Canada.

Carbonneau has come a long way since her first job in market research in Milan. The company she founded four years ago, fSONA, is trying to meet the demand for wireless systems in the telecommunications industry by connecting buildings with the company's patented products, called Sonabeams, which transmit data in beams of laser light.

Sonabeams come in nine different models, with three speeds of transmission, costing from $19,000 to $79,000. Manufactured in a 35,000-square-foot, state-of-the-art factory in Richmond, Sonabeams can operate over a maximum distance of four kilometres, requiring only a clear view from one building to another. They're tested under extreme, simulated weather conditions, ensuring they can withstand a wide variety of temperatures and climates, and installation takes only a few hours.

"The cost per bit for them to communicate wirelessly using Sonabeams is less than other options," Carbonneau explained. "Plus, they own the link."

That link operates at speeds ranging from 155 megabytes to 1 gigabyte a second, a sharp contrast to the competition, oceans of copper wire that operate at only 2 megabytes a second.

Carbonneau, who is half-English and half-Italian, had an eclectic array of educational influences that began at **London University**, where she studied European literature. Her first stints in the working world came in market research, where she conducted surveys and analyzed results for firms such as **General Biscuit Co.**, a Belgian-Dutch holding company.

In market research, Carbonneau became interested in sociology, ultimately enrolling in a master's degree and even beginning a PhD at the **University of Toronto**. It was there that she met her future husband, **Robert Carbonneau**, who hailed from Montreal.

The couple moved back to Europe, where Carbonneau pursued a high-level marketing position in Milan, eventually moving to the United Kingdom to work with **British Telecom**'s market product development team.

"I knew nothing at all about technology, but I knew I'd found Nirvana there," she said, recalling her interest in the culture, technology and engineering at BT. After attending technical courses at the company's college, she helped BT develop new markets in online services, including a dial-up service that gave users access to other network computers -- a technology that was a precursor to the Internet.

Carbonneau had found her niche and over the next few years worked directly in an industry that was evolving from copper wires to digital switching and fibreoptics. She and her family moved to Vancouver in 1989, where she consulted for **BC Hydro** and worked for what was then **BC Tel**, building the business case for its advanced communications network in B.C.

By 1995, Carbonneau was bored and frustrated with corporate strategy and left to embark on her own venture. "I wanted to do something wireless and high-capacity," she said.

Recalling her experience at BT, she surfed the Internet to the company's Web site and read up on its 1990s research on free-space lasers. The company had no intention of exploiting the patents it had filed on the research, and agreed to license them to fSONA.

As an ex-employee with a vision, Carbonneau had come at precisely the right time, and in telecommunications, timing is everything.

The company, whose name stands for "free-space optical networking architecture," was born in 1997, but it took two years of persistent fundraising before Carbonneau had sufficient venture capital to begin work. "At the time, nobody was

interested in optical wireless," said Carbonneau, whose goal was not only to finance the development of the technology, but also to create a manufacturing plant.

To date, Carbonneau has achieved that. Her approximately 80 employees churn out 500 Sonabeam systems each month, and began shipping in May to all corners of the globe, including Belgium and Taiwan. The challenge now is to educate potential consumers about the technology and its capabilities.

Bruce Dewar, information technology manager at **Westport Innovations Inc.**, a Vancouver-based company specializing in alternate fuel research, is one of fSONA's new customers. His company bought the 155-megabyte model six weeks ago.

"We have multiple buildings, some of which we've connected with fibre, but for this particular building there was no time to deal with the city, which takes more than the month we had to get the building online," he said.

Dewar started conducting research into alternate methods, at first discounting laser in favour of radio frequency "because of our rainy, foggy environment."

He changed his mind during fSONA's marketing pitch, when he realized that the Sonabeams had better security than radio and were safer. "Their technology is not harmful to the human eye, whereas the effects of radio frequencies still aren't known," he said.

FSONA's product has proved 100-per-cent reliable since it was plugged in at Westport Innovations and, so far, Dewar is highly satisfied with data communications between two of the company buildings at 100 megabytes per second.

"I'm really pleased that what we've been able to design and manufacture is everything and more than what we initially intended," said Carbonneau, a mother of three who lives in White Rock.

With an international team and sales and support representatives in San Francisco, Milan, Taipei and Mexico City, fSONA is poised and ready to offer its wireless solutions to an ever-broadening array of businesses seeking to improve the speed and efficiency of their telecommunications.

"Our team makes us the best," Carbonneau declared, "but we're not a quarter of the way to where we need to go."

currentz@biv.com

TOP OF PAGE