



Gold in the rubble

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At its heart, Nortel Networks Corp. has always been a company of inventors.

It began in the 1880s as the manufacturing arm of the newly founded Bell Telephone Co. of Canada. A century later, Nortel led the way in the development of digital telephones. And even after the company was waylaid by a series of brutal self-inflicted blows – foolish tech-bubble acquisitions and an accounting scandal – its engineers continued to innovate.

The company's last big technology bet, decisively made in 2006 under new chief executive officer Mike Zafirovski, was on a wireless revolution, to build the network equipment that will soon make mobile communications faster and more reliable than anything that exists today. It wasn't enough to save Nortel from failure.

Yet even as the liquidation of the company began last month, the ideas its engineers have come up with to build this network were winning legal protection from the United States Patent and Trademark Office.

Within these patents lies the potential gold that sparked the international auction among some of the world's premier makers of communications equipment – including Waterloo, Ont.'s Research In Motion Ltd. (RIM-T82.77-1.22-1.45%) – for the failed Canadian technology icon's best assets.

What's attracting them is something called LTE, or the long-term evolution of wireless networks, which will bring the world together on a single mobile standard for the first time. Nortel, alongside Telefon AB LM Ericsson (ERIC-Q9.18-0.20-2.13%), Nokia Siemens Networks BV, Alcatel Lucent SA and a handful of others, have raced to develop their versions of the technology and sell them to the biggest telecommunications companies as they prepare to upgrade their networks. Rogers Communications Inc. is set to be the first in Canada to sell an LTE-based service – billed as being several times faster than home Internet connections – next year.

Although the technology is in its early days, the promise of LTE is that it will allow for mobile access to Internet and video in a manner that's impossible with current networks. Picture watching a live hockey game on a laptop computer or an Apple iPhone while riding in the back of a speeding vehicle, and you have some idea of what it might bring.

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Patents alone don't build a network or win multibillion-dollar contacts. But to Nortel competitors such as Ericsson or Nokia, there is little downside in paying a fire-sale price to win what may turn out to be the valuable intellectual property in the race to LTE – and the people who developed it.

“Having a rich patent portfolio gives one a distinct competitive advantage,” said Dave Michelson, a professor at the University of British Columbia and former AT&T wireless network engineer. “[The new patents] seem to build upon well-established work and would appear to contribute to a strategically useful patent portfolio.”



Women work inside a Northern Electric Co. Ltd. factory in Montreal in this undated National Archive photo during the First World War.

The next generation

In the early days of the mobile phone industry, wireless communication developed along parallel tracks in North America and Europe. The European version was more popular and became the de facto global standard; it's the one used by Rogers in Canada. BCE Inc.'s Bell Canada unit, Telus Corp. and some other North American telcos gravitated to the North American standard (that's why, in most places outside of Canada and the U.S., a Telus or Bell cellphone won't work).

Earlier this decade, work began on a next-generation network. But it was only in the past two years that LTE became the consensus choice as the technology that would finally end the industry's great divide.

No single telecom equipment company has built a huge advantage yet. But Nortel was arguably near the forefront of LTE development and has an estimated 2,000



employees dedicated to it, mostly in Ottawa. About one-third of Nortel's Canadian work force is devoted to the wireless business, a veritable army of engineers at the company's Carling Avenue campus in the capital.

Mike McLean, a vice-president at Semiconductor Insights Inc., an Ottawa technology consultancy, said there are too many nuances in the network development that no company has any "one killer patent."

But with Nortel hobbled by its shaky finances, archrival Alcatel Lucent and Ericsson surged to an early LTE lead in February when they won a key deal with Verizon Communications Inc., the biggest phone company in the U.S. and one of Nortel's largest customers.

Two core technological concepts underpin LTE and are part of Nortel's most recent patents. One, called OFDM, allows a large volume of data to move more quickly and reliably from the cellphone tower a person's smart phone, netbook or other device. The other is MIMO, an antenna technology, where multiple antennas are used in transmission and reception, a further improvement in speed and reliability.

What's not clear is how many patents, and which ones, Nortel has included in the package it put on the auction table.

The company has always thought very highly of its intellectual property, according to Phil Solis, an analyst at ABI Research, a technology market research firm. One theory Mr. Solis and others have is Nortel keeps its best patents in a stand-alone entity that generates licensing revenue. A JPMorgan Chase analyst estimated recently that Nortel's wireless patents could generate royalties of \$1-billion – and possibly upwards of \$3-billion – over the next 15 years. The report caused a stir last month, although other analysts were skeptical. The larger question is which patents really matter, and who owns what. One industry executive noted there's a lot of "he said, she said" as network equipment makers jostle for advantage and market their products.

For companies like Ericsson and Nokia Siemens, it's better to win as much of Nortel's wireless business as possible rather than cede it to a competitor. In the case of Nokia, which is looking to expand its presence in North America, a successful bid means winning an important relationship with Verizon.

A big, but aging part of Nortel's wireless business is technology used in existing networks, which produced revenue of about \$2-billion last year. With this business is

the established connection with customers and the work force, from engineers to salespeople.

Another possibility is that a "Nortel Wireless Inc." emerges, free from the wreckage of the old Nortel. MatlinPatterson Global Advisers LLC, the private equity firm that is also a large creditor, is believed to be pursuing this option.

The unexpected entry of RIM, which doesn't deal in network equipment, stoked unexpected drama this week, garnering a lot of publicity for a bid that never officially emerged. But the logic of a deal for a company like RIM is the same as it would be for any other winner of the Nortel wireless auction: the patents would give it leverage in its dealing with its rivals as the fast-evolving telecommunications world moves on to the next big thing.