

## Bubble Boys – Lucent and Nortel

Chapter 9 shows the large percentage of the Telebomb capital spend that went to Nortel and Lucent. In this section both are profiled to illustrate the trouble that this sector of the industry faces.

### *Nortel*

Nortel, originally known as Northern Electric and Manufacturing Company, was the Canadian licensee of the Bell patents for telephone equipment in the early 20<sup>th</sup> century. Northern was set up to be the captive equipment manufacturer for Bell Canada under joint ownership between Bell Canada and Western Electric, AT&T's manufacturing arm. Northern Electric was 49% owned by AT&T until 1949, when Bell Canada bought out AT&T. Bell Canada began the process of divesting its shares of Northern in 1973. An IPO put 10% of Northern's shares into public hands.<sup>1</sup> The last of Bell Canada's shares of Nortel were distributed to Bell Canada stockholders in 2000.<sup>2</sup> Northern Electric changed its name to Northern Telecom in 1976 and to Nortel in 1995.

Northern Telecom became one of the biggest beneficiaries of AT&T's first divestiture, selling switches and related gear to all of the RBOCs. After that divestiture, AT&T no longer had captive buyers for its equipment. The U.S. market opened to competition and Northern was in the best position to gain from the equipment purchases of the new competitors in both the local and long-distance markets. It was the only company in the Western Hemisphere that could go up against AT&T Network Systems in terms of product line, sales force, and implementation skill. In its Digital Multiplexing System, or DMS, Northern had a fully compatible line of digital switching products before even AT&T/Lucent.

Northern quickly became the main switch supplier to both MCI and Sprint. MCI, in particular, wouldn't buy switches from AT&T because of the competitive tension between the two companies.

One of the virtues of offering an integrated line of switching equipment in the late 1990s was Nortel's ability to sell not only large systems, but small ones as well. So as the CLECs began to enter the market, Nortel became a large provider to this new segment of the market. Nortel claimed 57% share of the CLEC market in 1998.

Nortel extended its product line to the data network both through internal projects as well as acquisitions, buying Alteon Web Systems and Bay Networks, two companies that had products and skills in the commercial development of the Internet. Bay, specifically, was also the product of a merger between Wellfleet Communications and Synoptics Communications, early pioneers in network equipment that used the Internet Protocol to move data.

Even through the Telebomb, and in contrast to Lucent, Nortel remained a full-line equipment manufacturer, selling carrier-grade equipment, small and large office telephone systems, and data network equipment for use in carrier and enterprise (corporate) networks. Since the carriers stopped buying equipment in 2001, corporate

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<sup>1</sup> Historical information from Nortel, [www.nortelnetworks.com](http://www.nortelnetworks.com)

<sup>2</sup> Information about the Nortel divestiture is from Bell Canada's report to the SEC on form 40-F for 2002. Note that Bell Canada took a slower approach to divesting of its manufacturing operations than AT&T's approach to spinning out Lucent, completed in one transaction in 1996.

buyers are now in control of the market. Consequently, in 2003 Nortel became a larger company than Lucent.

One of the ironies of the competitive situation between Lucent and Nortel is that, as a result of Nortel becoming a larger company, it had a larger research and development budget than Lucent, the company that carries on the legacy of Bell Labs and Western Electric, Nortel's former parent.

### *Lucent*

Lucent started its history as Western Electric. It was one of the largest manufacturers of electrical equipment in the U.S. when, in 1881, it was bought by the American Bell Telephone Company (the predecessor to AT&T). The rapid growth of the telephone network stressed the capabilities of other manufacturers in the then-new telephone industry, so AT&T needed a captive manufacturing capability.

Western Electric also contributed to Bell Telephone Laboratories, the research and development arm of the Bell system. Bell Labs has been noted for its contributions to both basic and applied research that eventually benefited the telecommunications network.

After AT&T's first divestiture, the RBOCs were no longer required to buy their network equipment from AT&T, so the equipment business (like the long-distance business) had to manage down from 100% market share. Western Electric, renamed AT&T Network Systems, remained an integrated manufacturer throughout this period when it was still part of AT&T. It tried to get into other areas of the telecommunications industry, as well. In the early 1990s, for example, Network Systems developed a line of network hardware and software that would use a hybrid of optical fiber and coaxial cable (hybrid fiber coax, or HFC) to bring broadband services, such as video and Internet access, to the telephone network.

AT&T (the parent company) was on a different corporate trajectory than what was best for Network Systems, though. In 1994, AT&T bought McCaw Cellular, a company that provided competition to the RBOCs mobile services and had the potential to compete with the RBOCs in other ways.

The author attended a meeting in 1994, shortly after the McCaw purchase, in which AT&T was trying to sell the new HFC network equipment and support systems to Bell Atlantic. The AT&T salesman started the meeting with a rhetorical question; "What is the greatest threat you face today?" The answer he was expecting was "the cable companies", since the cable companies had been active recently in trumpeting their idea of convergence, which included services (delivered using HFC network equipment) that the RBOCs either offered or wanted to offer.

The answer from one of the RBOC directors in the crowd was, "I think the greatest threat we face today is having one of our major suppliers buy a wireless company, begin to compete with us in the local marketplace, and then try to sell us inferior technology to run our own networks." The meeting was over almost before it started.

Thus the second divestiture of AT&T began at a time when the industry was broadening too fast for one, integrated company to be expected to keep up on all fronts and be all things to all customers. (AT&T's second divestiture is discussed in Chapter 6.)

The soon-to-be-independent Lucent entered the market with a splash. The IPO of stock was completed in April 1996. The stock gained 50% in its first seven months of trading.

As the Internet became a larger force, Lucent bought into the market for Internet and fast-packet switching equipment, buying such companies as Ascend Communications and Yurie Systems. Lucent grew with the Internet and the competitive markets. Lucent's revenue increased 50% from 1996 to 1999. That year its revenue peaked (before its own later divestitures) at a reported \$38.3 billion, greater than that of Bell Atlantic, BellSouth or USWest.

Part of the reason for the fast growth of Lucent's revenue was a result of its aggressive sales tactics with the new carriers. As part of the equipment deals, Lucent would deliver the equipment and provide software and services to get the carrier up and running. The best part of the deal, though, was that Lucent would postpone their billing until the CLECs business plan indicated that revenue would be coming in. As it turned out later, selling on credit to CLECs was a bad idea, but at the time, it was just another way to get a piece of the action during the boom.

An interesting phenomenon occurred as the CLECs built their networks. Before the telecom boom, Lucent's main central office switching product, the 5ESS, was only found inside the large, high-ceilinged, environmentally controlled, restricted-access buildings in the Bell network known as central offices. These were the equipment hubs for a local area. In the former Bell system, the equipment in these buildings would serve an area, known as a wire center, which contained generally 20,000 to 150,000 customers. While 5ESS installations took up significantly less space than previous generations of switching equipment (remember Moore's Law), the buildings used to house the switch still housed all of the wires that would leave the building and snake under the streets and over telephone poles to customers' homes and businesses.

After the birth of the CLECs, though, it was not uncommon to walk into a CLEC's offices and find a room, often no larger than a big closet, with a fully functioning 5ESS central office switch. These installations were not as big as would be found in a Bell central office, but served the purposes of the CLEC, which had a smaller customer base and no need for running lines to each building it served. The first reaction of industry veterans to seeing these switches was surprise, akin to finding a small elephant being kept as a house pet.

The CLECs needed Lucent for more than its cash-flow-friendly payment terms. Having Lucent's equipment gave the CLECs credibility that they would not be able to get with no-name switching equipment. Remember that the CLECs needed to appear larger than they were to be seen as credible competitors to the RBOCs. Having Lucent's gear was like having a little bit of Bell system credibility. The Lucent logo was often featured on the CLECs' marketing material, like an "Intel inside" sticker on a new PC.

Once the capital-spending boom was over, Lucent's revenue dropped like a rock. From a peak in 2000, Lucent's sales dropped rapidly, falling 70% over the next three years. Each of Lucent's market segments experienced trouble. The CLECs' prospects waned as the dot-com boom faded. Not only did the CLECs stop buying, they stopped paying on the equipment Lucent had already provided. The RBOCs sharply curtailed their capital spending with the advent of real competition and poor economic conditions. The long-distance segment's prospects were also poor.

Adding to Lucent's drop in revenue was lack of revenue from the spun out operations, Avaya and Agere. Lucent was still an integrated manufacturer as late as 2000. But the allure of the carrier marketplace was so great that the slower-growth enterprise market didn't seem as attractive. Avaya is the former Lucent/AT&T arm that makes telephone, data and cabling products for the enterprise market. It was spun out of Lucent in 2000. Lucent also spun out its division that makes microelectronic components, naming it Agere.

Back at Lucent, the company couldn't cut expenses fast enough. The business environment of the Telebomb had not been experienced or predicted by Lucent or anyone else in the industry. Like pricing in the long-distance market, Lucent's revenue was descending from a high-altitude at a rapid rate of speed. But without an altimeter or other instruments, it's hard to know how to pull out of the dive or where you'll end up when you do. Any business decisions made in that kind of environment are subject to change. Lucent took \$12 billion worth of charges and shed more than 85,000 employees (including the effects of the spin outs) between the peak in 2000 and the end of 2003.

Lucent's stock showed the wear and tear as well. From a split-adjusted high of near \$65 per share, the stock tumbled into the low single digits in March of 2001 and was still there more than three years later.