

C A S E S T U D Y

Gale of  
"Creative Destruction"  
Engulfs Nortel

Canadian Business History

This case study was prepared by Sanjeev Kumar Sharma under the direction of Professor Joe Martin as the basis for class discussion rather than to illustrate either effective or ineffective handling of a managerial situation.

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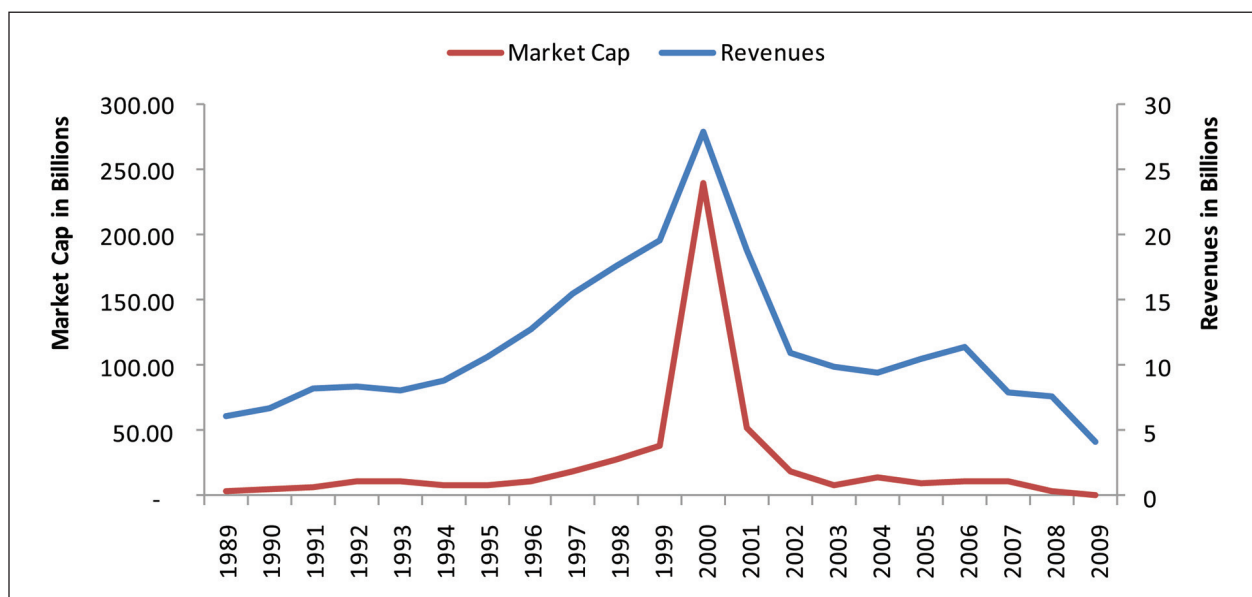
# Gale of “Creative Destruction” Engulfs Nortel

## Introduction

In 2000, Nortel was the largest Canadian company, both in terms of revenue and market capitalization. (See Exhibit 1.) According to Canadian technology writer Larry MacDonald, one of Nortel’s strengths up to that point was its ability to thrive in the face of adversity. “In fact, it is out of disruption and discontinuities in markets, products and technologies that Nortel has emerged triumphant many times over. They have been what Nortel looks for in order to survive and gain position. The legacy is an entrenched culture of change, speed and innovation.”<sup>1</sup>

## Exhibit 1

Nortel’s Market Cap and Revenue reached record highs in 2000 (in US\$)



Nine years later Nortel initiated creditor protection proceedings under the Companies’ Creditors Arrangement Act in Canada and Chapter 11 in the United States. To determine what happened, this case traces the story of Nortel’s internal and external environment from late 1980s to the early years of the new millennium, especially the period from 1989 to 2002.

During this period, Nortel’s management was faced with a number of critical discontinuities in the telecommunication market. These discontinuities were:

- (i) deregulation in the U.S. telecom market as a result of the passage of the Telecommunication Act of 1996;
- (ii) alteration of the competitive landscape due to the spinoff of Lucent from AT&T in 1996 and more importantly the entrance of European firms into North America through acquisitions or organic expansion;

<sup>1</sup> Larry MacDonald, *Nortel Networks: How Innovation and Vision Created a Network Giant* (John Wiley & Sons: 2000), cover page.

(iii) the emergence of wireless and the Internet as the new telecom paradigm, which allowed new entrants, e.g. Cisco to penetrate the telecom equipment market.

These external realities coincided with a host of internal challenges at Nortel. At the same time, Nortel's management was undergoing a period of upheaval both in its organizational structure and in its corporate vision. During the 1990s, Nortel was led by three very different CEOs. The impact of these challenges was not immediately evident, however, because the market was fuelled by a period of "Irrational Exuberance".

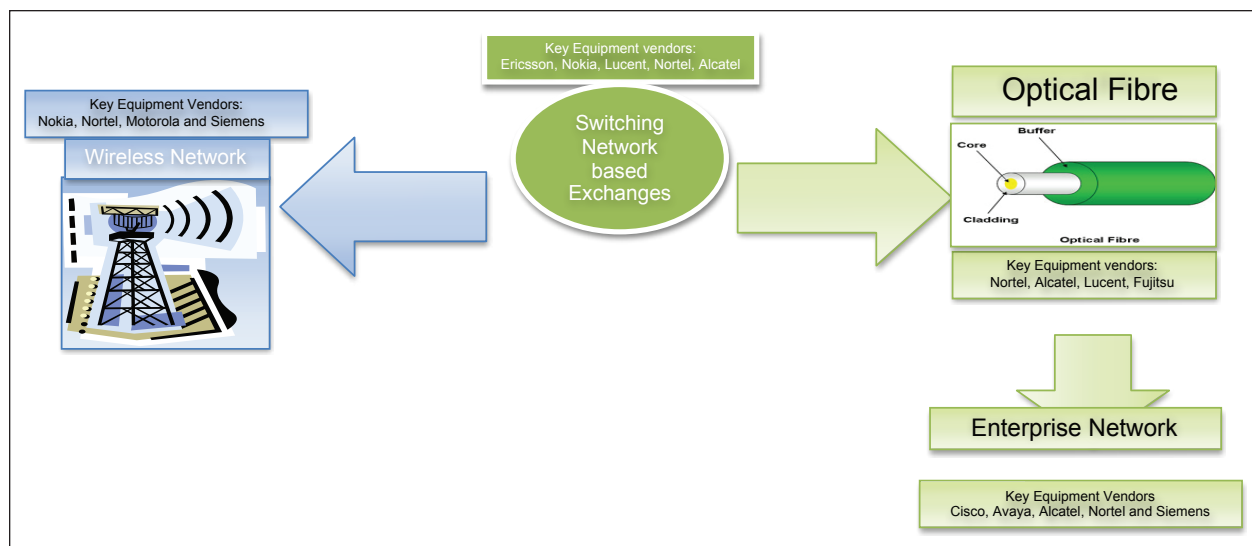
The euphoria of this irrational exuberance evaporated in 2001, when a dramatic correction in the telecom market occurred. In that year the telecom industry lost more than US\$2 trillion in market capitalization.<sup>2</sup> Telecom companies adopted different strategies to overcome the technology bust, but Nortel's leadership team did not navigate through this cycle. Nortel's past resilience, which enabled it to thrive despite several challenging external (regulatory and technological) events deserted it, and this century-old Canadian company descended into restructuring and divestiture.

## Overview of Telecom Network Equipment Industry

The telecommunication network equipment industry (Figure 1) comprises the companies engaged in manufacturing telecommunications equipment such as network switches, optical fibre network equipment, and modem, data-transfer and network connectivity mechanisms such as LANs for enterprise consumers. The telecommunication network equipment industry excludes manufacturers of phones and accessories primarily for consumer segments.

By 1996, telecommunications equipment had evolved from a simple device that transferred audio signals over modest distances (telephony) to a slate of complex electronic media used to transfer voice and data worldwide through digital and analog technology and fibre-optical conductors. The total combined global sales for this industry in 1996 was estimated at around US\$200 billion.<sup>3</sup>

**Figure 1**  
High-Level Schematic Representation of Key Network Connectivity Elements

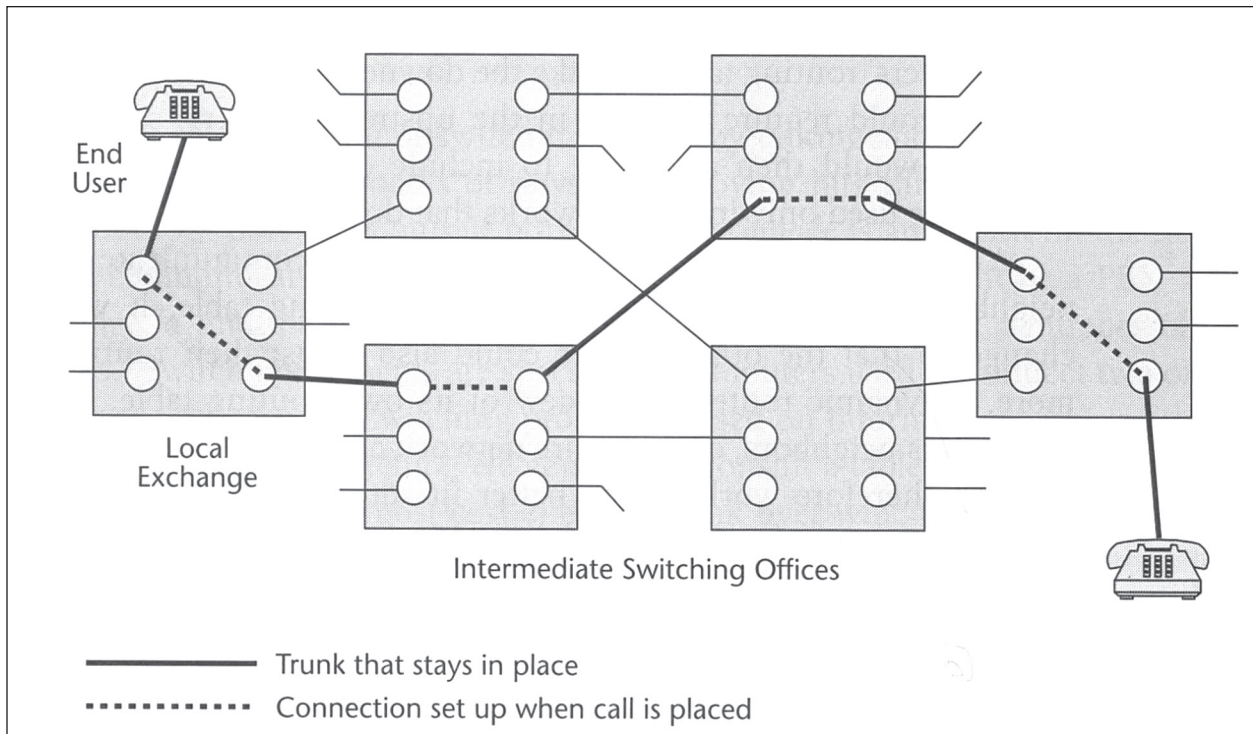


<sup>2</sup> Dennis K. Berman, "Before Telecom Bubble Burst, Some Insiders Sold Out Stakes", *The Wall Street Journal*, August 2002.

<sup>3</sup> World Telecommunication Development Report 1996/97.

The oval that depicts the “Switching Network based exchanges” is the key part of Figure 1. This exchange is established by the telecom carriers for controlling the information relay to the end users via wireless or wired mode. Network Switch is the core-component of switching-based exchanges. A network switch is the device used to set up a telephone call by realizing a connection from a selected inlet to a selected outlet, for the duration of the call. This is the most important single element in a telephone network. (See Figure 2.)

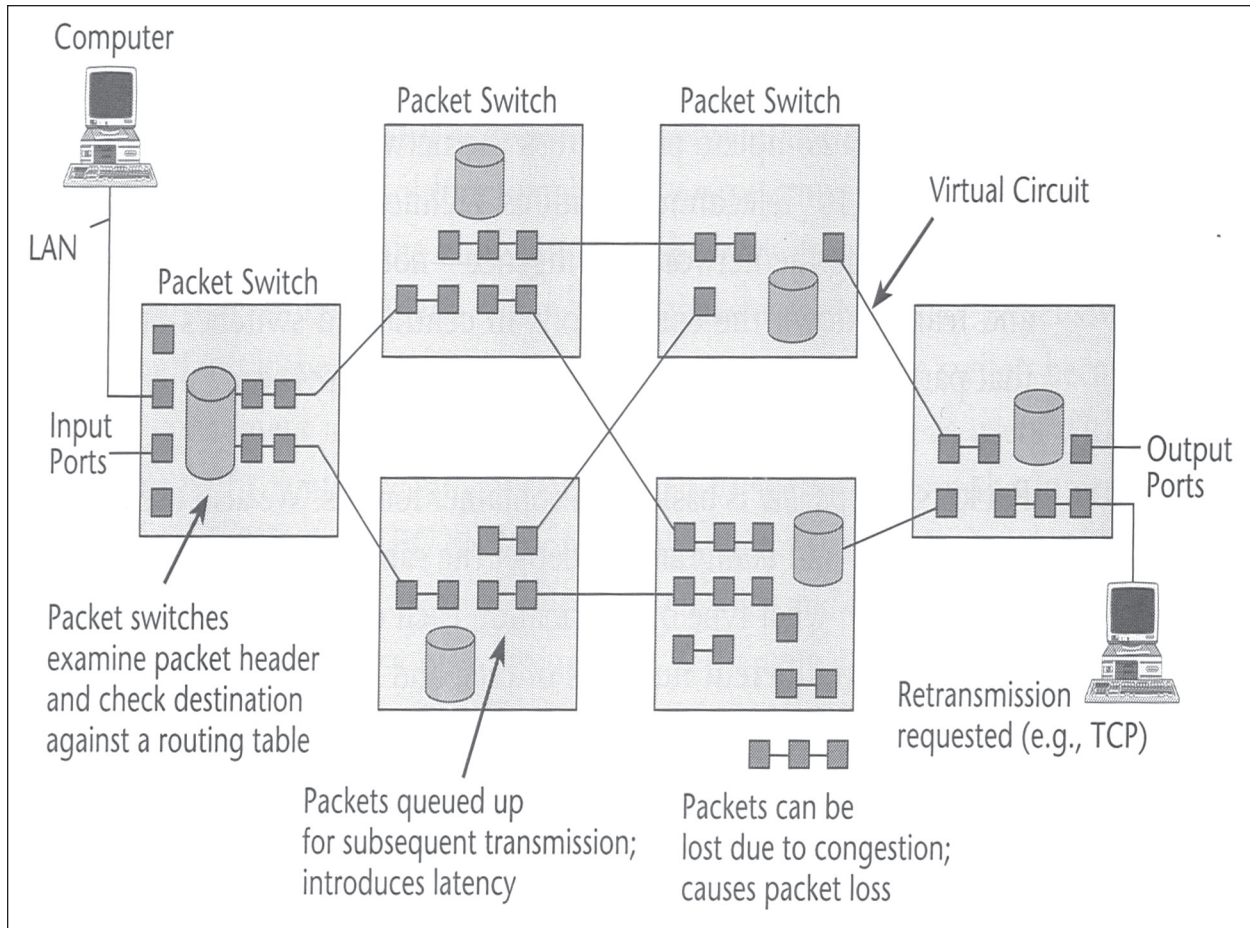
**Figure 2**  
Anatomy of a Circuit-based Switching Network



Although the basic concept of network switching remained the same with the shift to a wireless world, software rather than hardware became the backbone of switching technology (packet switching).<sup>4</sup> (See Figure 3 on the following page.) Thus, apart from hardware engineering, capabilities in software engineering became a key source of competitive differentiation among players in the telecom switching industry. Nortel was a dominant player in both circuit switching and packet switching. However, both Cisco and Lucent were catching up due to better competencies in software.

<sup>4</sup> Packet Switching Network is essentially a “connection-less” network where data is chopped up into small fragments known as packets and sent over the network. The packets are then combined at the destination.

**Figure 3**  
**Anatomy of Packet-based Switching**



### Evolution of Nortel as a Global Entity

Nortel’s evolution into an independent global entity began in 1973 when Bell Canada sold 10% of its stake through an IPO on December 5. Robert Scrivener, CEO and Chairman of Bell Canada from 1973 to 1976 paved the way for the creation of Bell-Northern Research and Nortel (then Northern Electric). A first step in this process was to hire John Lobb, an aggressive American, to transform the company from what it had been to what it needed to become. This marked a shift in Nortel’s positioning to an outward-looking, aggressive, and market-focused organization from an inward-looking and manufacturing-oriented structure.<sup>5</sup>

To help achieve his goals, Lobb recruited Walter Light from Bell Canada. Walter Light, Nortel’s visionary CEO during the early 1980s, established a set of core values for Bell’s engineers through the “Open Protocol Enhanced Network” (OPEN) mission statement. The statement outlined the following steps that would be needed to achieve the company’s objective to become a market leader in the telecom equipment industry:

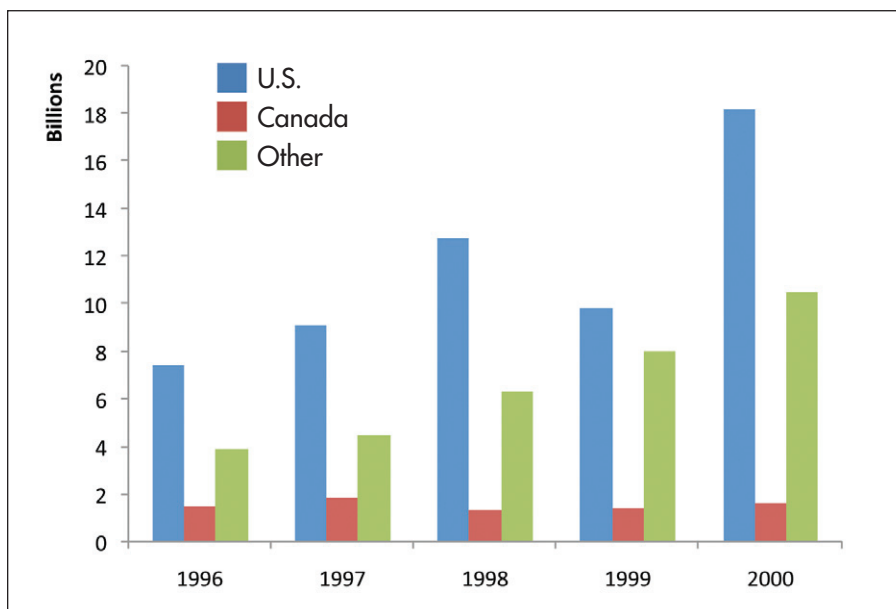
<sup>5</sup> Nortel’s Corporate History: Nortel’s website.

1. Control of information system – Understanding the customer requirement.
2. Cost-effectiveness in manufacturing – Price the market and cost the product.
3. Congeniality – Information system should be acceptable and attractive to the people who are expected to use the new system, i.e. it should be user friendly.
4. Continuity – Compatibility of new system to older platforms, providing a convenient way for customers to migrate with new technologies.
5. Compatibility across systems – This provides flexibility to customers for integrating “best of breed” products.

The above statements clearly reflect the goals for Nortel’s engineering team. These expectations flowed directly from Nortel’s own goal to become the low-cost producer in the industry and a leader in technology innovation.<sup>6</sup> One of Nortel’s earlier philosophies was: “Price the market and cost the product.” In other words, the company should pursue price-based costing with a predetermined margin.

Nortel transformed itself from a Canadian-based firm to a global firm and by 1997 it was operating 37 manufacturing and repair sites across Canada, France, Malaysia, Mexico, Thailand, Ireland, Turkey, the U.K. and the U.S. It also had wholly-owned subsidiaries in the U.K., the U.S., Japan, Russia, India, Israel, Australia, and Ireland. It also conducted R&D in these eight countries. In the year 2000 before its massive restructuring, Nortel employed more than 90,000 employees, most of whom were in the U.S. (38,000 employees) followed by Canada (25,900 employees) while the remaining 30,600 employees were distributed across other regions of the globe. The revenue corresponding to its primary regional subsidiaries is shown in Exhibit 2.

**Exhibit 2**  
Revenue of Nortel’s Regional Subsidiaries (US\$)



<sup>6</sup> Op. cit., MacDonald, p. 27.

Exhibit 3 highlights important aspects of Nortel's trajectory from its inception in 1882 to its independence from Bell in the year 2000.

### **Exhibit 3**

#### **Nortel's History (content reproduced from Data Monitor)**

Nortel Networks (Nortel) was formed as the mechanical department of Bell Telephone Company of Canada in 1882. It was incorporated as Northern Electric and Manufacturing Company in 1895. In 1914, the Northern Electric and Manufacturing Company merged with the Imperial Wire and Cable Company to form the Northern Electric Company. The company manufactured Canada's first vacuum tube, used on repeater apparatus for long-distance lines. Northern Electric produced the first sound system for motion pictures in Canada during 1928. Western Electric sold its Northern Electric Company's stock holdings to Bell Canada. In 1958, the company deployed the world's longest microwave system, the Trans-Canada Skyway, covering 3,800 miles. Northern Electric established its first overseas factory to manufacture switching equipment and telephones in Turkey in 1967. The following year, the company manufactured the first dial-in-hand telephone. Northern Electric opened its first U.S. plant in Port Huron, Michigan in 1972. The following year, the company went public; subsequently, Bell Canada's ownership was reduced from 100% to 90%. In 1976, Northern Electric changed its name to Northern Telecom. The company formed a strategic alliance with GE for the development of cellular mobile telephone systems in 1982. In 1985, Northern Telecom installed a private branch exchange in Japan and became the first non-Japanese company to do so. In 1988, Northern Telecom partnered with Tong Guang Electronics Corporation of China to manufacture Meridian 1 PBX (private branch exchange) systems.

In 1995, Northern Telecom changed its name to Nortel. The same year, the company established significant joint ventures, especially in research and technology transfer, in Germany, China, and Italy. In addition, it opened an office in Moscow. In 1997, the company completed the installation of a 3,000 km fibre-optic backbone network in Vietnam.

The company acquired Bay Networks in 1998. After the acquisition, the company changed its name to Nortel Networks. The company also acquired Ontario-based Cambrian Systems that same year. Subsequently, Nortel became the first telecommunications supplier to deploy a high-capacity 10 Gbps fibre optic network in China in 1999. Bell Canada (BCE) distributed 94% of its Nortel Networks stake to shareholders in 2000.

### **Succession Strategy at Nortel in the 1980s**

In 1979, a trio of Nortel executives decided to appoint Edmund Fitzgerald, a former U.S. marine and prominent American executive, as president of Nortel's U.S. subsidiary. The executive threesome included: Walter Light, Nortel's CEO; Robert Scrivener, Light's predecessor; and Jean de Grandpre, CEO of BCE, Nortel's principal shareholder. One important criterion for the selection of Fitzgerald as president of the U.S. subsidiary was his connection with the corridors of power in the U.S.<sup>7</sup> Subsequently, Fitzgerald was appointed CEO of Nortel in 1985 in recognition of his success in expanding Nortel's presence in the U.S. and Asian markets. Fitzgerald played a significant role in increasing the company's annual revenue from US\$1.7 billion up to US\$5 billion per year.

Before Fitzgerald retired in 1989, he adopted the following criteria (see Figure 4 on the following page) for the selection of his successor.

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<sup>7</sup> Fitzgerald had served on U.S. President Reagan's National Security Telecommunication Advisory committee.

**Figure 4**  
Decision Criteria for CEO Selection

Decision Criteria for Edmund Fitzgerald’s choice of successor	Paul Stern’s Profile
International Experience and Exposure	<ul style="list-style-type: none"> <li>• COO of a West German Company, Braun AG.</li> <li>• President of defence manufacturer Unisys.</li> </ul>
Connection to American political fraternity	<ul style="list-style-type: none"> <li>• Had served together with Fitzgerald on U.S. President Ronald Reagan’s National Security Telecommunication Advisory Committee on Trade</li> <li>• Worked on fundraising committees for U.S. President George Bush Sr.</li> </ul>
Command-and-Control Style	<ul style="list-style-type: none"> <li>• Developed a reputation as a demanding CEO with an ability to effect bold cost-cutting measures</li> </ul>

One of the key reasons that Fitzgerald overlooked Nortel senior executives such as David Vice in favour of Paul Stern was their lack of connection to political power centres in the United States. Fitzgerald believed that the engineering backgrounds of the internal candidates, along with their lack of international experience, would hinder the ability of any current Nortel executive<sup>8</sup> to become an effective CEO just when the company was poised for international expansion. Stern on the other hand was an American with a Manchester PhD who had served as an executive with IBM.

### 1989 to 1992 – The Paul Stern Era

Unlike Fitzgerald — who progressed from president of the U.S. subsidiary to president of Nortel before becoming CEO — Stern assumed the position of CEO within a year of his arrival. The appointment of an outsider as the new leader was resented by Nortel’s senior executives. Within a few months, half of the two dozen senior corporate staff departed.

Nortel staff said they found Paul Stern’s management style to be autocratic and felt it was unsettling for employees. They also found that some of his actions were sudden and abrupt, leading to confusion and low morale among staff and further contributing to the attrition of senior executives such as John Taylor, Group Vice-President.<sup>9</sup>

During Paul Stern’s era, Nortel’s engineers were required to cram a large number of customized features (e.g. call forwarding and call waiting) into the company’s core product DMS<sup>10</sup> switches without considering quality issues. This lack of process resulted in unmanageable lines of code (24 million lines of customized code) which ultimately surfaced as critical network glitches in the United States in 1992. For the first time in Nortel’s history there were product recalls. Realizing the seriousness of the issue, BCE, which still controlled 52% of the stock, decided to act. The board wanted Nortel to be able to respond better to customer complaints about product defects. It was time for a change at the top.

<sup>8</sup> Op. cit., MacDonald, p. 114

<sup>9</sup> Ibid., p. 117

<sup>10</sup> DMS – Digital Multiplex System, a family of digital, circuit-based telephone switches that enables service providers to connect people making local and long-distance calls.



## 1992 to 1997 – The Jean Monty Era

In September 1992, BCE parachuted Jean Monty, President and CEO of Bell Canada<sup>11</sup> into position as the new president and COO of Nortel. In March 1993 Monty succeeded Stern as a CEO of Nortel. Monty was a University of Chicago MBA who joined Bell in 1974 and who rose through the Bell ranks to become its President.

Monty was faced with the challenge of restoring Nortel's reputation. He would soon have to steer Nortel amidst the paradigm shift in the telecom industry as a result of the arrival of the Internet and a wireless world as well as a deregulated world.

From 1993 to 1995, Jean Monty embarked on a massive operational restructuring. It included: (i) increased spending on R&D, bringing it back up to the previous level of 14% of sales; (ii) the closure of plants, resulting in layoffs of around 9% of its workforce; and (iii) the formation of a task force to redesign the DMS switch software. True to his reputation as a skilled manager, Monty demonstrated success in the streamlining of operations.

He further segmented the business as follows:

1. Public carrier networks – Serving transmission and switching needs of telephone companies. (US\$4.6 billion revenue in 1996 = 36.8%)
2. Enterprise networks – Servicing the internal communication needs of corporations and government departments. (US\$3.9 billion revenue in 1996 = 31.2%)
3. Wireless networks – Serving the infrastructure requirements of mobile telephone companies (US\$2.5 billion revenue in 1996 = 20%)
4. Broadband networks – Serving the transmission and switching needs of cable TV and long-distance carriers (US\$1.5 billion revenue in 1996 = 12%).

Nortel was primarily targeting two types of customers: telecom operators such as MCI, Sprint and AT&T, and enterprises such as Citigroup, government departments, etc. The biggest portion of revenue (coming from public carrier networks and broadband networks) in 1996 came from switching products. (See Exhibit 4 on the following page.) From the enterprise segments, revenue was increasingly derived from the sale and updating of customized software rather than installation of new systems. In 1996, telecom operator Sprint Spectrum gave Nortel an order for US\$1 billion worth of equipment for wireless infrastructure; however an interesting aspect of this contract was that Nortel was able to stave off competition from Motorola in this area because of Nortel's willingness to provide better financing than its competitor.<sup>12</sup> Jean Monty was named the Canadian CEO of the year in 1997, primarily in recognition of his role in increasing Nortel's revenue from US\$8.1 billion in 1993 to US\$15.4 billion in 1997. (See Exhibit 5 on the following page.) In spite of this revenue growth, Nortel's technology lagged behind Cisco in the internet domain; it faced stiff competition from Nokia and Motorola for customer acquisition in the wireless market, while its wire line switching product was in the mature stage of the product life cycle and facing competition from European providers.

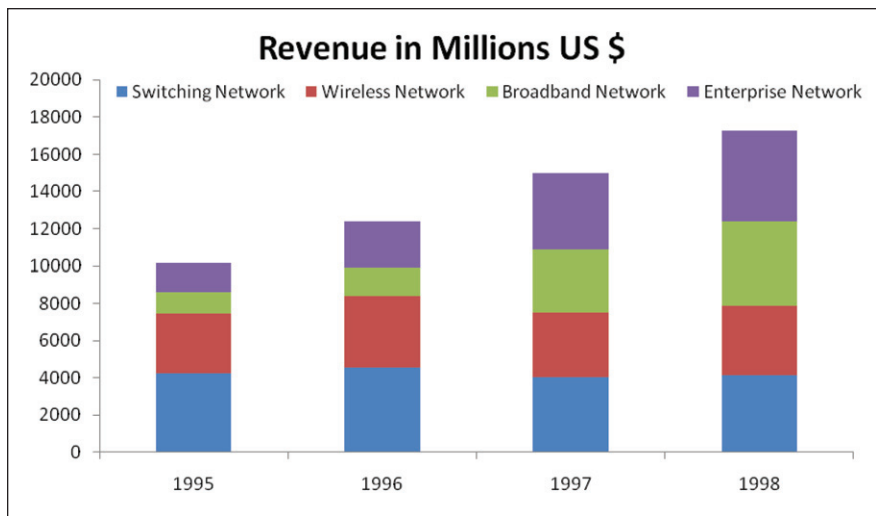
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<sup>11</sup> Bell Canada was the parent organization for Nortel (BCE controlled 52% stake in Nortel).

<sup>12</sup> Op. cit., MacDonald, p. 173.

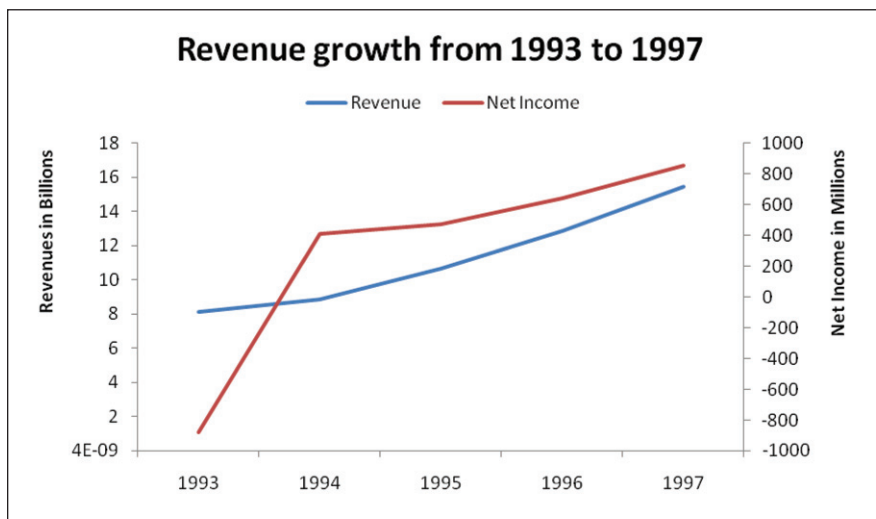
## Exhibit 4

### Segment Revenue by Products



## Exhibit 5

### Revenue and Net Income during Jean Monty's era (US\$)



In 1996, U.S. President Bill Clinton signed the Telecommunication Act of 1996 into law. This marked a historic milestone in the U.S. telecommunications industry and was the first legislative change since the passage of the Telecommunication Act in 1934. The new legislation articulated measures for encouraging competition in all sectors of the telecom industry.

The new legislation paved the way for RBOCs (Regional Bell Operating Companies, which were formed in 1982 as a result of Judge Harold Greene's ruling that broke AT&T's monopoly) to enter the long-distance market. At the same time, this 1996 legislation eased entry for new carriers in local telephony, which up until then had been monopolized by RBOCs. Along with this deregulation, new developments were occurring on the technological front. The innovations in wireless networks had been gathering pace since the 1980s, but it was only in the 1990s that wireless emerged as the

dominant technology with a new generation of telecom products. In 1998, collaboration between different telecom associations across the globe took place with the goal of adopting uniform technical specifications for the wireless industry. This collaboration was called 3GPP (The 3rd Generation Partnership Project). Initiatives such as the 3GPP accelerated the installation of wireless networks across the globe, which in turn led to an increased demand for wireless network equipment. Simultaneously, advancement in internet technology led to the emergence of personal computers (PCs) as essential telecommunication equipment (end-terminal) which sparked increased demand for network equipment such as modems.

Increasing competition among telecom operators due to deregulation led to intense price wars. The pressure on prices coincided with the increasing demand for data transmission due to the ascendance of the Internet. This led the telecom operators to invest in cost-effective and higher bandwidth technologies and to replace existing coaxial cable networks with optical fibre.

New sets of optical network equipment were required for the transmission and reception of data on optical fibre. The variable cost of transmitting data on an optical network was almost 1/100<sup>th</sup> the cost of a traditional network. Over the years, significant improvement in data-carrying capacity of optical fibres could be observed in comparison to that of traditional co-axial cables. In order to gain cost advantages in a price-sensitive market, new start-ups funded by venture capitalists invested heavily in the installation of optical network equipment. To recoup their market share, incumbents such as AT&T began to replace their traditional terrestrial coaxial cable and microwave networks with the optical fibre networks. This led to an exponential increase in demand for optical networks, which in turn fuelled growth for telecom equipment companies such as Nortel. This demand became a key driver of revenue growth for equipment manufacturers from 1996 to 2000.

In order to invest in new optical fibre networks, the telecom operators needed billions of dollars. To increase their market share, telecom equipment companies such as Nortel went beyond selling equipment to providing vendor financing to these operators. The overall capital expenditure by telecom operators reached its peak from 1997 to 2001. This fact is substantiated by an examination of the ratio of capital investment to revenues for telecom operators. This ratio traditionally sat at around 20%; however, it started to increase in 1997 and reached a maximum of 35% in 2000.<sup>13</sup> (See Exhibit 6 on the following page.)

However, the initial euphoria in the telecom market evaporated in 2000 when telecom operators began to realize that they could not reap an adequate return on their investment. The consequences were severe cutbacks in capital investment and the ratio dropped to a new low of 10%. (See Exhibit 6.) The reduction in investment by telecom operators led to a dramatic decline in revenues for telecom equipment companies such as Nortel. (See Exhibit 1 on page 2.)

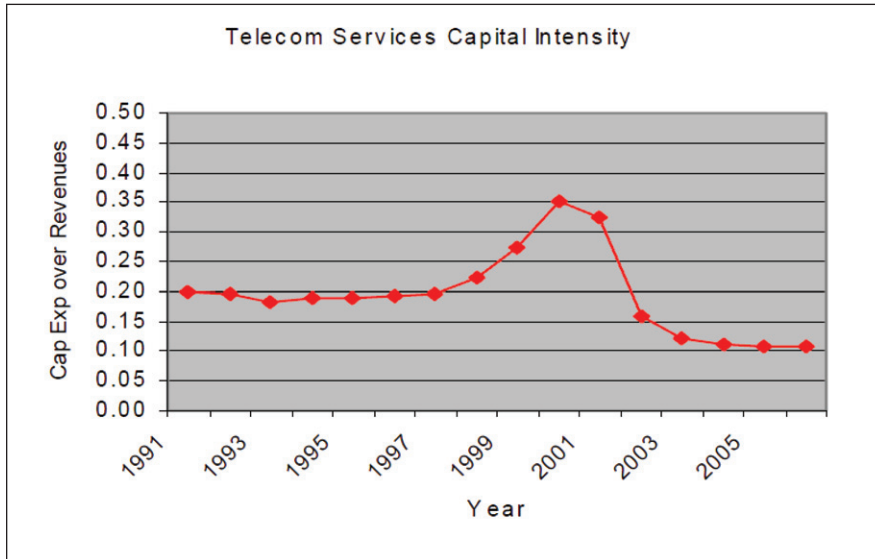
Nortel had launched its vision for optical fibres in 1989 and for many years enjoyed its standing as the product leader in this segment of the industry. The company then expanded its manufacturing product capacity to meet the new enormous demand for optical fibres. However, when the market crashed in 2001, Nortel was left with overcapacity. Thus the period of 1996 to 2002 can be viewed as a period of “irrational exuberance” in the telecom market. During this period, Nortel’s balance sheet became increasingly leveraged with debt (see Exhibit 7 on the following page) while its retained earnings were declining due to losses.

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<sup>13</sup> This directly aligns with Nortel’s peak revenue period.

## Exhibit 6

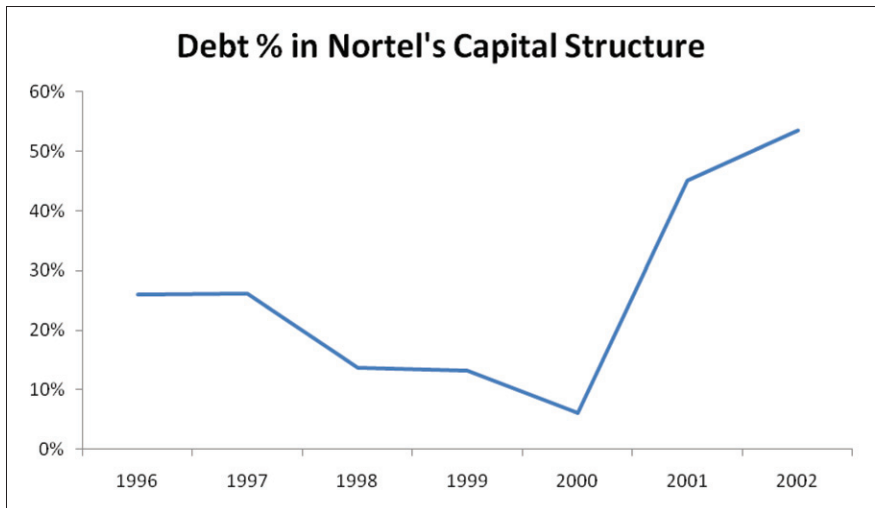
### Ratio of CAPEX to Revenue for Telecom Utility Companies



Source: Telecommunications Industry Overinvestment: Defying Rational Economics

## Exhibit 7

### Nortel's Capital Structure



## Understanding the "Irrational Exuberance" of the Telecom Market

The origin of this exuberance in the telecom market can be traced back to the telecom operators' optimistic business plans, which were based on the following assumptions:

1. Estimates of market growth were based on the initial observation that bandwidth demand would be exponential due to the explosion in Internet traffic. (Moore's Law)
2. Deregulation in the market would lead to productivity efficiency, resulting in greater market share due to a lowering of costs and the opportunity to reach unserved segments.

3. Substantial future benefits could be derived by providing increasing number of services such as internet, cable and other data services to the installed current customer base (economy of scope).

The above assumptions by the telecom operators led them to make huge capital expenditures, since they assumed that they would be able to recoup their investments by expanding their market share (economy of scale) and increasing product offerings to existing customers (economy of scope). These assumptions anchored the strategies pursued by network equipment companies such as Nortel, which compelled them to pursue all possible tactics for gaining market share even at the expense of their financial stability. One of the key competitive criteria for gaining market share related to the terms of vendor financing, i.e. the willingness of equipment manufacturers to lend money to telecom operators on convenient terms.

Driven by the competitive imperative to build leading positions in the industry and pushed by sales forces and staff eager to close deals, network equipment manufacturers overextended themselves. The manufacturers gave credit to startup service providers to help them finance their equipment purchases. This process disregarded the traditional due diligence required by the treasury function to authorize the extension of credit. Financing the deal became a core-market strategy for the equipment manufacturers who tried to position themselves as “Easy-Finance providers.”

After five years at the head of Nortel, Jean Monty left in 1997 and returned to BCE, the parent company, where he took over as President and Chief Operating Officer. (He was promoted the next year to President and Chief Executive Officer.)

### **1997 to 2001 – The John Roth Era**

In the midst of this “irrational exuberance”, John Roth succeeded Jean Monty as CEO of Nortel. Unlike Monty, Roth did not come from BCE, the parent organization. On the contrary, Roth had built a long and illustrious career within Nortel, rising through its ranks from positions in product development to the head of product groups, including a stint as president of Nortel’s research arm, BNR.<sup>14</sup> If Jean Monty’s executive strength was operational effectiveness, John Roth brought deep technical engineering skills to the position of CEO. During one of his interviews he proclaimed himself to be a visionary:<sup>15</sup>

“We’re in an industry of huge opportunity, and the task is to see the opportunity. I guess I’ve the knack of seeing opportunity. Where other people see problems, I see opportunities. There are problems, obviously, but... those are just the things in the way of opportunity.”

Roth arrived as Nortel began to struggle with the twin dilemmas of a maturing product (see Exhibit 4 on page 10) and a lack of clarity on future direction. As the CEO of a technology company, Roth needed to find and identify a new growth engine for Nortel while the company’s existing product portfolio was declining and other products lacked sufficient competitive superiority to gain market share.

In grappling with these dilemmas, Roth made the decision to plot a new product roadmap for Nortel which involved a shift from “dial-tone” to “web-tone”. In 1998, Roth articulated a new vision of “Virtual Integration,” i.e. the company would serve as a system house linking customers, design centres, internal production centres, contract manufacturers and other resources.

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<sup>14</sup> BNR – Bell Northern Research Ltd was a research and development centre owned jointly by Bell Canada and Nortel.

<sup>15</sup> Op. cit. MacDonald, p. 163.

Roth pursued this objective through a policy of acquiring new companies that were operating in the Internet-related segment of the market. (See Exhibit 8.) Acquisition appeared to be the quickest route to build the necessary new competencies and appeared faster than the time-consuming process of organic growth.

## Exhibit 8

### Mergers and Acquisitions Pursued by John Roth

Acquired Company	Purchase Price (US\$)
Telrad Telecommunication & Electronic Industries Ltd.	\$ 45,000,000
Broadband Networks	\$ 593,000,000
Aptis Communication	\$ 305,000,000
Bay Networks	\$ 9,100,000,000
Periphonics Corporation	\$ 778,000,000
Shasta Network	\$ 349,000,000
Cambrian System	\$ 248,000,000
Dimension Enterprise	\$ 65,000,000
Qtera	\$ 3,004,000,000
Clarify	\$ 2,114,000,000
Sonoma System	\$ 4,500,000
Alteon WebSystems Inc.	\$ 8,050,000,000
Epicon	\$ 284,000,000
Architel Systems Corporation	\$ 472,000,000
Core tek	\$ 1,203,000,000
Xros	\$ 3,227,000,000
Prometry	\$ 771,000,000

### Acquisitions Paid For by Stock

Roth's ascent to the post of CEO coincided with the magnification of the "irrational exuberance" in the telecom market. This "irrational exuberance" propelled a rise in Nortel's stock price. The period from 1996 to 2000 was the "tech boom" and the conventional wisdom held that investments in telecommunications companies were sound and lucrative. John Roth was there at the right time to capitalize on the purchasing power of Nortel's stock. (See Exhibit 9 on the following page.)

During a two-year period from 1998 to 2000, Roth spent US\$30 billion to acquire more than 20 different companies. (See Exhibit 8, above). Roth used the currency of Nortel's stock to fund acquisitions. The intent of these acquisitions was to discover and pursue the next growth engine for Nortel. This new strategy meant focusing not just on the traditional telecom operators but on all enterprise customers. John Roth was quoted in an interview that "The transformation from traditional switch technology to data networks is a revolution; we have to win, we win it or we die."<sup>16</sup> All of this activity strained Nortel's balance sheet because of the write-down of acquired assets (see Exhibit 10 on the following page) as well as increases in its overall operational costs as a percentage of sales (see Exhibit 11 on page 16).

<sup>16</sup> Op. cit., MacDonald, p. 180.

## Exhibit 9

### Executive Summary

Nortel stock's trajectory during the period 1989 – 2002 resembles a value stock becoming a junk bond



## Exhibit 10

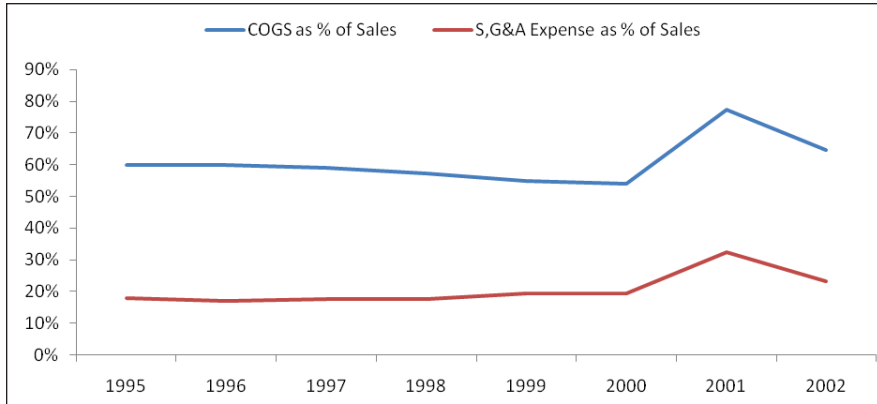
### Nortel Networks Corporation Consolidated Statements of Operations

(for the years ended December 31)

<i>(millions of U.S. dollars, except per share amounts)</i>	2002	2001	2000
Revenues	\$ 10,560	\$ 17,511	\$ 27,948
Cost of revenues	6,953	14,167	15,114
Gross profit	3,607	3,344	12,834
Selling, general and administrative expense (excluding stock option compensation)	2,675	5,911	5,416
Research and development expense	2,230	3,224	3,633
In-process research and development expense	-	15	1,415
Amortization of intangibles			
Acquired technology	157	807	852
Goodwill	-	4,148	3,720
Stock option compensation	91	109	134
Special charges			
Goodwill impairment	595	12,121	133
Other special charges	1,703	3,660	134
(Gain) loss on sale of businesses	(40)	112	(174)
Operating loss	(3,804)	(26,763)	(2,429)
Equity in net loss of associated companies	(9)	(134)	(29)
Other income (expense) - net	6	(351)	809
Interest expense			
Long-term debt	(215)	(196)	(86)
Other	(41)	(115)	(83)
Loss from continuing operations before income taxes	(4,063)	(27,559)	(1,818)
Income tax benefit (provision)	478	3,252	(1,177)
Net loss from continuing operations	(3,585)	(24,307)	(2,995)
Net loss from discontinued operations - net of tax	-	(3,010)	(475)
Net loss before cumulative effect of accounting change	(3,585)	(27,317)	(3,470)
Cumulative effect of accounting change - net of tax	-	15	-
Net loss	\$ (3,585)	\$ (27,302)	\$ (3,470)
Basic and diluted loss per common share			
- from continuing operations	\$ (0.93)	\$ (7.62)	\$ (1.01)
- from discontinued operations	-	(0.94)	(0.16)
Basic and diluted loss per common share	\$ (0.93)	\$ (8.56)	\$ (1.17)
Dividends declared per common share	\$ -	\$ 0.0375	\$ 0.0750

## Exhibit 11

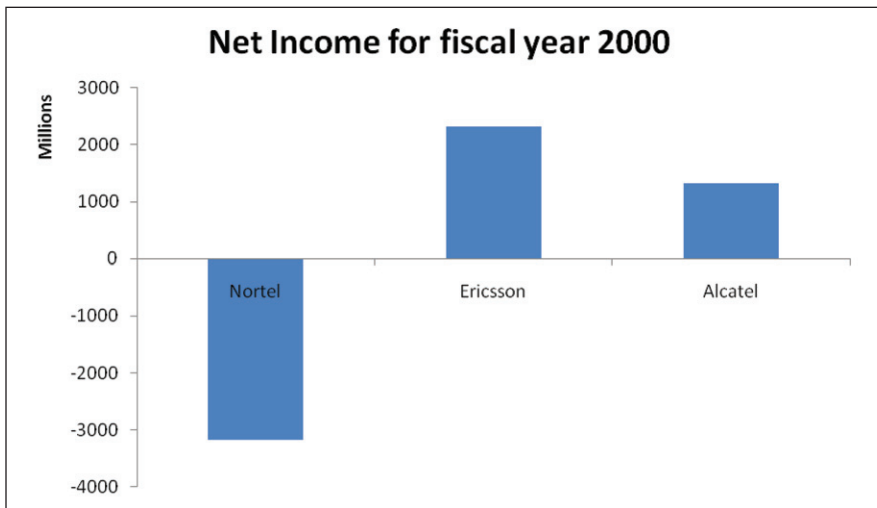
### COGS and S, G & A Performance



In 2000, Nortel became the largest Canadian non-financial corporation in terms of revenue (US\$30 billion, or CAD\$45 billion). At the height of the telecom boom, Nortel was one of the few telecom majors to post negative net income in spite of revenue growth. (See Exhibit 12). In fact Nortel posted losses throughout Roth's entire term. (See Exhibit 13 on the following page.) Nevertheless, Roth was named Canada's Outstanding CEO of the Year in September 2000.

## Exhibit 12

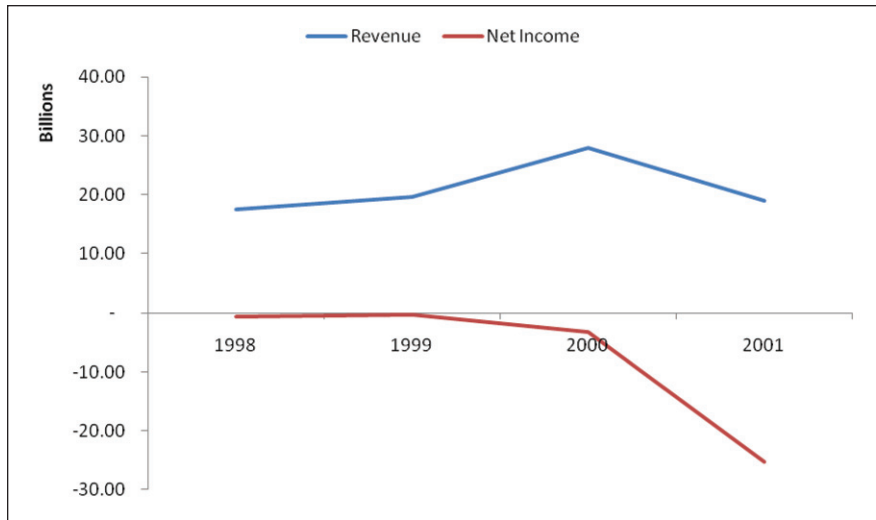
### Comparing Net Income of Competitors in the Year 2000 (US\$)





## Exhibit 13

### Revenue and Net Income During John Roth's Era (US\$)



### Nortel's Organization, 2001–2002

In 2001, the company issued the following statement: “In light of the significant downturn in both the telecommunications industry and the economic environment, and capital market trends impacting our operations and expected future growth rates, we engaged in a number of activities in 2001 to streamline operations and activities around our core markets and leadership strategies. Some of our activities in 2001 include:

- substantial workforce reductions;
- amendment of certain credit agreements;
- discontinuance of our access solutions operations;
- divestitures and outsourcing transactions; and
- write-down of intangible assets.”<sup>17</sup>

Frank Dunn succeeded John Roth as CEO in November 2001. Dunn inherited a legacy of structural problems due to the lack of proper integration of the acquisitions from 1998 to 2000. The adverse effects of irrational expansion through acquisition soon became evident. As a consequence, the organization launched a massive restructuring initiative which led to the layoff of more than 30,000 employees (almost 30% of staff) in 2001.

### Overview of Competitors' Tactics in the Downturn

Nortel's key competitors were also faced with severe challenges during the late 1990s and early 2000s. However, most of them survived the “gale of creative destruction” through strategic alliances and realignment of their corporate strategy.

<sup>17</sup> Statement from Nortel's 10-K filing.

## Lucent Technologies

Lucent Technologies was established as a spinoff from AT&T in September 1996, having previously been AT&T's System and Technology unit. Lucent grew rapidly, capitalizing on the growing demand for telecom equipment. However, like other players in the market it faced a period of continuous revenue decline until 2004 when it turned a profit under the leadership of Patricia Russo. The company established strategic alliances with new-economy telecom companies such as Cisco and Juniper in order to create products for next-generation communication solutions. Lucent also broadened its professional and managed services offerings through an alliance with IBM. An important turn of events occurred in April 2006 when Lucent announced a merger agreement with Alcatel, the French telecommunications giant — it became one of the largest mergers in the industry. The merger was completed in November 2006 and the transaction amount was US\$11 billion. The following table illustrates the revenue and income for Lucent Technologies and the combined entity (Alcatel Lucent since 2006).

Fiscal Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Revenue	23,286	26,360	30,147	26,993	28,904	21,294	12,321	8,470	9,045	9,441	16,209	25,892	23,640	21,723
Net Income	(793)	541	970	3,786	1,433	(14,170)	(11,826)	(770)	2,002	1,185	(173)	(5,078)	(7,200)	(722)

## Cisco

Cisco was founded in 1984 by a group of computer scientists from Stanford University. Since 1995, Cisco's leader has been John Chambers, who has led the company's growth from its early days as a Silicon Valley startup to its emergence as a giant in the telecom enterprise. Cisco embarked on an aggressive restructuring initiative right at the onset of the economic downturn, reducing its workforce by 18% in March 2001 and then redefining its go-to-market strategy by concentrating on specialization rather than volume.<sup>18</sup> These steps, combined with Cisco's strong financial health, helped it to make an impressive comeback to profitability in 2002. It has maintained a profitable track record since then.<sup>19</sup>

Fiscal Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Revenue	4,101	6,452	8,489	12,173	18,928	22,293	18,915	18,878	22,045	24,801	24,484	34,992	39,540	36,117	40,040
Net Income	915	1,047	1,331	2,023	2,668	(1,014)	1,893	3,578	4,401	5,741	5,580	7,333	8,052	6,134	7,767

<sup>18</sup> V. Kasturi Rangan, HBS Case Study: "Cisco Systems: Managing the Go-to-Market Evolution".

<sup>19</sup> Dr. Jay R. Galbraith, "How Do You Manage in a Downturn?".

## Ericsson

Ericsson, a Swedish-based company, has been a leader in the telecommunications industry since its inception in 1876. Ericsson restructured its product portfolio and formed some important partnerships in 2001, including strategic joint ventures with Sony and Juniper Networks.

- The partnership with Sony had an immediate financial impact. This collaboration reduced Ericsson's losses in the Phone segment from SEK14.6 billion in 2001 to SEK1.3 billion the next year (Swedish kronas).
- In November 2000, Ericsson entered into a joint venture with Juniper Networks to form Ericsson Juniper Networks IP. Ericsson owned 60% of the joint venture.<sup>20</sup>

Fiscal Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Revenue	19,882	26,838	29,510	34,464	43,771	37,094	23,323	18,838	21,115	24,515	28,771	30,044	33,428	33,036
Net Income	1,137	1,910	2,086	1,940	3,362	(3,402)	(3,042)	(1,735)	3,043	3,913	4,229	3,541	1,866	660

## Conclusion

Paul Stern joined Nortel in 1989 and was appointed CEO a year later, a position he held until the parent company, BCE, replaced him three years later with one of its own, Jean Monty. Monty served as CEO until 1997 when he was replaced by John Roth, a Nortel/Bell Northern Research veteran. Roth served until 2001, when he in turn was replaced by Frank Dunn.

There were few indications at the beginning of the 1990s of the gales of destruction that would face the telecom industry and its suppliers in the very near future. However the years 1996 to 2002 presented Nortel's leadership with the difficult task of redefining corporate strategy for a century-old firm at a time of dramatic changes in the legislative and technological environments. These developments led to increased competition from international as well as domestic corporations. The changes resulted in a period of irrational exuberance and what has become known as the dotcom boom. To Nortel's detriment, these years precipitated the dotcom bust and led to the demise of an organization that once played a colossal role in Canadian business.

<sup>20</sup> <http://www.juniper.net/us/en/company/press-center/press-releases/2000/pr-001130.html>

## Suggested Readings

M.E. Porter, “From Competitive Advantage to Corporate Strategy”, *HBR* magazine, May-June 1987.

C.K. Prahalad and G. Hamel, “The Core Competence of the Corporation”, *HBR* magazine, May-June 1990.

A. Rappaport and M.L. Sirower, “Stock or Cash? The Trade-Offs for Buyers and Sellers in Mergers and Acquisitions”, *HBR* magazine, November 1999.

## Additional Reading

Nicholas Economides, “The Telecommunications Act of 1996 and its Impact”, Tokyo, Annual Telecommunications Policy Conference, December 1997.

## Questions

1. Describe the historic strengths of Nortel before Paul Stern's era which helped it become a global competitor.
2. Critique the criteria used by senior management to select Paul Stern as the CEO of Nortel. Assess his performance in that role.
3. During Jean Monty's term as CEO, important regulatory and technological changes occurred in the external environment. What were those changes and how well do you think Monty navigated through them?
4. What was John Roth's strategy and how did he go about accomplishing his goals? Assess that strategy.
5. The 1990s were marked by relentless change in the telecommunications industry, including major technological shifts and legislative/regulatory changes. During that decade, Nortel was led by three different CEOs with widely varying strengths and weaknesses. Critique each CEO's performance and identify the individual whom you think performed the best. Give your reasons.