

**THE WALL STREET JOURNAL.**[Browse Entire Paper](#)[Return to Front Pages](#)**Trial by Fire:  
A Blaze in Albuquerque  
Sets Off Major Crisis  
For Cell-Phone Giants**

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**Nokia Handles Supply Shock  
With Aplomb as Ericsson  
Of Sweden Gets Burned**

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**Was Sisu the Difference?**

By Almar Latour

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Caused by a lightning bolt, the blaze in an Albuquerque, N.M., semiconductor plant burned for just 10 minutes last March. But far away in Scandinavia, the fire touched off a corporate crisis that shifted the balance of power between two of Europe's biggest electronics companies, both major players in the global electronics industry.

**Nokia** Corp. of Finland and Telefon AB L.M. Ericsson of neighboring Sweden both bought computer chips from the factory, which is owned and operated by Philips Electronics NV of the Netherlands. The flow of those chips, crucial components in the mobile phones **Nokia** and Ericsson sell around the world, suddenly stopped.

Philips needed weeks to get the plant back up to capacity. With mobile-phone sales booming around the world, neither **Nokia** nor Ericsson could afford to wait.

But how the two companies responded to the crisis couldn't have been more different. **Nokia**, which was Europe's largest corporation by market capitalization at the time, met the challenge with a textbook crisis-management effort -- the kind companies of all stripes are finding essential as the pace of global commerce quickens.

**Nokia** officials outside Helsinki noticed a glitch in the flow of chips even before Philips told the company there was a problem. **Nokia**'s chief supply troubleshooter, an intense 39-year-old Finn who runs marathons and plays rock guitar in his spare time, was on the case within days. Within two weeks, a team of 30 **Nokia** officials fanned out over Europe, Asia and the U.S. to patch together a solution. They redesigned chips on the fly, sped up a project to boost production, and flexed the company's muscle to squeeze more out of other suppliers in a hurry. "A crisis is the moment when you improvise," says Pertti Korhonen, **Nokia**'s top troubleshooter, a man whose electric-guitar collection includes two classic Fender Stratocasters.

Ericsson, Sweden's largest company, with annual revenue of more than \$29 billion, moved far more slowly. And it was less prepared for the problem in the first place. Unlike **Nokia**, the company didn't have other suppliers of the same chips, known as RFCs, for radio frequency chips. In the end, Ericsson came up millions of chips short of what it needed for a key new product. Company officials say they lost at least \$400 million in potential revenue, although an insurance claim against the fire may make up some of it.

"We did not have a Plan B," concedes Jan Ahrenbring, Ericsson's marketing director for consumer

goods.

On Friday, the fallout from the New Mexico fire and other component, marketing and design problems reached a climax, as Ericsson announced plans to retreat from the phone handset production market. It said it plans to outsource all its handset manufacturing to Flextronics International Ltd.

Ericsson said a slew of component shortages, a wrong product mix and marketing problems sparked a loss of 16.2 billion kronor (\$1.68 billion) last year for the company's mobile phone division. Overall, the company reported an operating loss of 1.5 billion kronor. The company will take an additional restructuring charge of eight billion kronor to finance further restructuring of its mobile-phone unit. The news sent Ericsson shares falling 13.5% and shook other high-tech stocks around the world.

When the company revealed the damage from the fire for the first time publicly last July, its shares tumbled 14% in just hours. Since then, the shares have continued to fall along with the declining fortunes of many global telecommunications stocks. Ericsson shares are trading around 50% below where they were before the fire. The company has also overhauled the way it procures parts, including an effort to ensure that key components come from more than a single source. "We will never be exposed like this again," says Jan Wareby, who oversees the mobile-phone division as head of the company's consumer-goods unit.

At **Nokia**, the main cost has been frayed nerves on the crisis team. Production stayed on target, despite the fire. And although the company's shares have fallen recently amid concern that demand for the mobile phones that make up its core business could decline, Friday's close of 40.25 euros (\$37.21) was only about 18% below where the shares were trading the day before the fire.

The company has successfully taken advantage of Ericsson's problems to cement its position as Europe's dominant technology company and boost its share of the world market in mobile-phone handsets. **Nokia**'s share is now about 30%, up from about 27% a year ago. That's more than double the share of its nearest rival in the handset market, Motorola Corp. And most of that gain came from Ericsson, whose share of the market has fallen to 9% from about 12% last year.

Score another victory for the upstart Finns, who have wrangled for centuries with their larger Swedish neighbors. In part, the companies' contrasting responses to the fire reflect the national character of the countries that spawned the two companies. Cautious and comfortable in groups, Swedes often move together. Finns, on the other hand, have a reputation for individualistic derring-do. During the short Nordic summer, for example, both Finns and Swedes entertain themselves with boating expeditions across a 400-mile gulf of water that separates the two countries. Swedes often sail in convoys, while Finns tend to strike out solo.

So it was with **Nokia** and Ericsson. "Ericsson is more passive. Friendlier, too. But not as fast," said one official who dealt with both companies in the fire's aftermath.

This also isn't the first time in recent years that Finns, who haven't forgotten they were once under Swedish control, have outdone their neighbors. Swedish fans were so confident they would defeat the Finns in the 1995 world hockey championship that many sang a taunting victory song before the game. When Finland pulled off an upset, Finnish fans stood in the Stockholm arena and sang the song right back -- in Swedish, a language all Finns study in school.

**Nokia**'s esprit de corps -- employees call themselves "Nokians" -- grows out of that same Finnish pluck. Born as a producer of wood pulp in 1865, **Nokia** has grown to become one of the world's leading electronics concerns with revenue of roughly \$19.9 billion for 1999. More than 70% of its revenue comes from the sale of mobile phones, a product for which demand has been exploding from Europe to Japan.

Founded 11 years after **Nokia**, Ericsson has evolved into a more engineering-heavy company. Aside from making mobile phones, which account for about 30% of its revenues, the company is a leader in commercializing complex technologies such as WAP, the software system that most European mobile phones use, and the so-called third-generation, or 3G, networks that may eventually put applications

such as video on mobile phones.

Competition between these two national standard-bearers can be intense. **Nokia** floats hot-air balloons stamped with its name over Stockholm, while Ericsson splashes its name on billboards all over Helsinki. But both companies went global decades ago -- which is why a thunderstorm 4,000 miles away mattered so much.

At about 8 p.m. on March 17, the lightning bolt hit an electric line in New Mexico, causing power fluctuations throughout the state. It was either a sudden drop or surge in power -- authorities don't know which -- that started the blaze in Fabricator No. 22. Philips workers quickly smothered the flames, but the damage was done.

Plastic ceiling lattices were strewn about the floor. Eight trays of silicon wafers, enough to produce chips for thousands of mobile phones, were stuck in the furnace where the fire was concentrated. All were ruined. Water damage, from sprinklers that went off throughout the plant, was extensive. Smoke particles had spread into the sterile room in the heart of the factory, contaminating the entire stock of millions of chips stored there. These tiny squares of etched silicon, smaller than the nail on a baby's pinkie, allow a mobile phone to do anything from sound amplification to finding radio frequencies, depending on how they're coded.

It was immediately clear that repairing the damage would take at least a week, possibly longer. "It's as if the devil was playing with us," said one senior Philips manager who was involved in the clean-up. "Between the sprinklers and the smoke, everything that could go wrong did."

Speeding the clean-up was crucial. Desperate executives in Amsterdam joked about showing up in Albuquerque with toothbrushes to help scrub the fabricator themselves. Instead, they assigned customers priority levels. **Nokia** and Ericsson, which together bought about 40% of the plant's radio-frequency-chip production, would get preferred treatment, the Philips executives decided. About 30 other smaller customers -- including such telecommunications heavyweights as Lucent Technology Inc., which buys chips from Philips for cards used to link computers into wireless networks -- would have to wait.

Within days, **Nokia** officials in Finland already had their first inkling that something was amiss. Order numbers weren't adding up, company officials say. On Monday, March 20, Tapio Markki, **Nokia**'s chief component-purchasing manager, found out why. In a phone call to his office at **Nokia** headquarters in the city of Espoo, a Philips account representative informed him of the fire, saying the company had lost "some wafers" but the plant would be back to normal in a week, according to Mr. Markki. Philips officials say they were passing along the best information they had at the time, as quickly as possible. "We thought we would be back up after a week," said Ralph Tuckwell, a spokesman for Philips semiconductors.

Mr. Markki wasn't terribly alarmed, but he relayed the news up **Nokia**'s chain of command to Mr. Korhonen, anyway. "We encourage bad news to travel fast," says Mr. Korhonen, who has worked at **Nokia** for 15 years. "We don't want to hide problems."

Mr. Korhonen didn't anticipate a major problem, either. Still, he offered to send two **Nokia** engineers based in Dallas to the Philips plant to help. Philips, concerned that visitors might add to the confusion, declined. Mr. Korhonen then placed the five components made at the Philips plant on a "special monitor" list, something the company does dozens of times a year when demand for parts is running red-hot, as it was in March. **Nokia** officials began checking in with Philips officials daily, and sometimes more often, instead of the weekly monitoring the plant usually received.

**Nokia** officials took advantage of other opportunities to drive their concerns home to Philips officials. At a meeting with Philips officials in Helsinki, Matti Alahuhta, president of **Nokia**'s mobile-phone division, broke from the scheduled meeting agenda to bring up the fire. "We need strong and determined action right now," he says he told the Philips executives in a conference room overlooking choppy waves in the Baltic Sea.

Mr. Alahuhta and his colleagues didn't bang on the table or yell. But Philips executives immediately recognized a characteristic Finnish curtness under pressure -- the Finns call it *sisu* -- that signaled they meant business. There weren't many pleasantries exchanged, according to one Philips executive who was in the room. "It was clear they were angry," he says. "You got the idea this was a matter of life or death for these guys. We respected that."

As the number of chips coming from Albuquerque plummeted, Mr. Korhonen started to worry that **Nokia** had a major problem. On March 31, two weeks after the fire, his fears were confirmed when Mr. Markki interrupted a meeting in Helsinki to report that Philips was now saying weeks more would be needed to repair the plant, and months' worth of chip supplies would be disrupted.

Mr. Korhonen grabbed a calculator: **Nokia** could find itself unable to produce just under four million handsets, the equivalent of more than 5% of the company's total sales at that time. And demand for handsets was booming like never before. "We don't need this," he cried, throwing his hands in the air.

The two men started calling other executives they thought could help, and they scrambled to figure out who else made the parts produced in Albuquerque. Of the five components, two were indispensable. One of those was made by various suppliers around the globe. But the other, semiconductors known as Asic chips (for application specific integrated circuits), which regulate the radio frequency mobile phones use, were made only by Philips and one of its subcontractors. "This was a big, big problem," Mr. Korhonen remembers realizing.

**Nokia** officials had learned the hard way that supply disruptions are more the rule than the exception in their business. A few years ago, the company lost out on millions of dollars in potential sales when snags slowed down production. Jorma Ollila, then president and chief executive, vowed it wouldn't happen again. He instituted the practice of aiming executive hit squads at bottlenecks and giving them authority to make on-the-ground decisions. Mr. Korhonen himself once spent months persuading jittery Japanese suppliers to ramp up production to meet **Nokia**'s aggressive forecasts. "I can't even recall how many karaoke songs I have sung," he says.

Within hours of getting the bad news, Messrs. Korhonen and Markki assembled their team of supply engineers, chip designers and top managers in China, Finland and the U.S. to attack the problem.

Meanwhile, across the Gulf of Bothnia in Stockholm, top Ericsson officials still hadn't realized what they were up against. Like **Nokia**, Ericsson officials first heard of the fire three days after it occurred. But that communication was "one technician talking to another," according to Roland Klein, head of investor relations for the company. "There were a few bits and pieces [of information before that], but nothing formal."

"The fire was not perceived as a major catastrophe," says Pia Gideon, a spokeswoman for the company. When word came from Philips about how serious the problem really was, more time passed before middle managers at Ericsson fully briefed their bosses. Mr. Wareby, who directly oversees the mobile-phone division as head of consumer products for the company, didn't find out about the snag until early April. "It was hard to assess what was going on," he says. "We found out only slowly."

By that time, Messrs. Korhonen and Markki of **Nokia** were on a plane heading for Philips headquarters in Amsterdam to meet with the company's chief executive. They were joined by Mr. Ollila, currently **Nokia**'s chairman and chief executive, who rerouted a return trip from the U.S. to attend.

Mr. Korhonen says **Nokia** was "incredibly demanding" with Philips. He says he told Philips' CEO, Cor Boonstra, and the head of the company's semiconductor division, Arthur van der Poel, "We can't accept the current status. It's absolutely essential we turn over every stone looking for a solution."

Messrs. Van der Poel and Boonstra declined to be interviewed. Philips spokesman Mr. Tuckwell, who confirmed the meeting took place, said "it was exactly what we expect from a customer."

Mr. Korhonen and his team were now racing to restore the chip supply line. To replace more than two

million power amplifier chips, they asked one Japanese and one U.S. supplier of the same chip to make millions more each. Largely because **Nokia** is such an important customer, both took the additional orders with only five days lead time, Mr. Korhonen says. **Nokia** also demanded details about capacity at other Philips plants.

"This was one of the key things we insisted on," says Mr. Korhonen. "We dug into the capacity of all Philips factories and insisted on rerouting the capacity. We asked them, told them, to replan."

And he got results. "They didn't go into denial," he says. "The goal was simple: For a little period of time, Philips and **Nokia** would operate as one company regarding these components."

Soon more than 10 million of the Asic chips were replaced by a Philips factory in Eindhoven, the Netherlands. Another Philips plant was freed up for **Nokia** in Shanghai.

The hit team was drumming up solutions within **Nokia**, as well. The company quickly redesigned some of its chips so they could be produced elsewhere. A project at **Nokia** to develop new ways of boosting chip production was also fast-tracked. Once Philips got the New Mexico plant operating again, this allowed the plant to make up for two million of the lost chips.

At Ericsson, on the other hand, officials were finding themselves increasingly behind the curve. Philips officials told them they couldn't produce enough chips to meet their needs, at least not on time. "We were capacity-bound," said Mr. Tuckwell, the Philips spokesman, who noted that too much time was needed to get production going again to meet all orders from all customers. "We found the best solutions we could."

They had nowhere else to turn for several key parts, including Asic chips. In the mid-1990s, the company had tried to save money by simplifying its supply lines, basically by weeding out backup suppliers for many parts. By the time of the fire, many executives were new to their jobs and unaware that the company was vulnerable. Since the fire, Ericsson has reversed course and signed on second suppliers for key parts, including the chips made in Albuquerque. On Friday it left the handset production business only completely.

**Nokia** says it was able to meet its production targets despite the fire. The company projects continued strong growth of handset sales for the next year. Mr. Korhonen even had time recently to pull out one of his guitars, leading a band of colleagues in a version of "Twist and Shout" during an employee outing.

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#### Going Mobile

##### Comparison of two big Scandinavian rivals

###### NOKIA

- Motto: "Connecting people"
- Headquarters: Espoo, Finland
- Employees: 60,000
- Total sales: \$27.7 billion\*
- Network sales: \$7.0 billion\*
- Handset unit sales: 128 million
- Founded as: Wood pulp producer, in 1865
- Products: Mobile handsets, networks
- Saunas at head office: 6

###### ERICSSON

- Motto: "Make yourself heard"
- Headquarters: Telefonplan, Sweden
- Employees: 100,000
- Total sales: \$28.5 billion
- Network sales: \$20.3 billion
- Handset unit sales: 43.3 million
- Founded as: Telephone manufacturer, in 1876
- Products: Networks, mobile handsets
- Saunas at head office: 2

\*Analysts forecast

Note: Figures are converted from local currency to U.S. dollars at current rate Source: The companies



Pertti Korhonen

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