

Packet-switched in mobile

When the Internet and data services are added to the mobile network, the pressure on broadband will increase. Instead of circuit-switched calls, packet-switched data will be sent. Read more in the final installment of *Contact's* series on mobile telephony development.

Technology, 18



Keeping the company fit

Demanding deadlines, a hectic pace and lack of exercise can lead to burnout. Personnel at the Event Marketing department for mobile systems have taken steps to counteract this and now they exercise together twice a week.

At work, 21

contact



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NO. 8 • MAY 3 2001

Ericsson and Sony in powerful alliance

Ericsson and Sony have signed a Memorandum of Understanding to merge their mobile phone units and form a joint company.

The new company, Sony Ericsson Mobile Communications, will be the market leader in

the growing area of mobile multimedia. This top position is to be achieved by combining Ericsson's leading-edge telecommunications know-how with Sony's expertise in consumer electronics.

News, 4

A milestone for WCDMA

Ericsson has now placed the world's first live voice call over a commercial WCDMA network. The network belongs to the UK's Vodafone, which described the event as "an important milestone."

News, 5

Gearing up for 3G race

Ericsson in Spain is in training to become a 3G winner in 2003. To date, four UMTS licenses have been issued there. Three of the operators have selected equipment from Ericsson.

Spotlight On Spain, 12-13

Let the phone find your way

Find your dream house with positioning. Knowing exactly where a mobile phone user is located is predicted to become one of the most important services on the mobile Internet.

Feature, 15

WORLD WATCH

Companies in the telecom sector are reporting weaker profitability trends in this year's first-quarter interim reports. Since the beginning of the year, the major suppliers have lost more than USD 400 billion in value.

Statistics from American analysts show that this is the largest downturn since the recession at the beginning of the 1990s.

11

AT WORK

Managers at Ericsson need to become better informed about the company's goals and visions. At an Ericsson-wide leadership course, participants learn how to communicate in a clear, straightforward manner, so that they, in turn, can spread the word to their employees.

20



A perfect match. Ericsson CEO Kurt Hellström and Otto Zich, Chairman and CEO for Sony in Europe, shake hands after announcing the alliance. Roll out of the first products from the new company will begin as early as next year. Photo: Bertil Ericson

Bright future despite gloomy news

The future belongs to Ericsson. There is a huge need for third-generation mobile telephony and the Engine concept is going from strength to strength. It is simply a question of when the economic turnaround will happen. This was Kurt

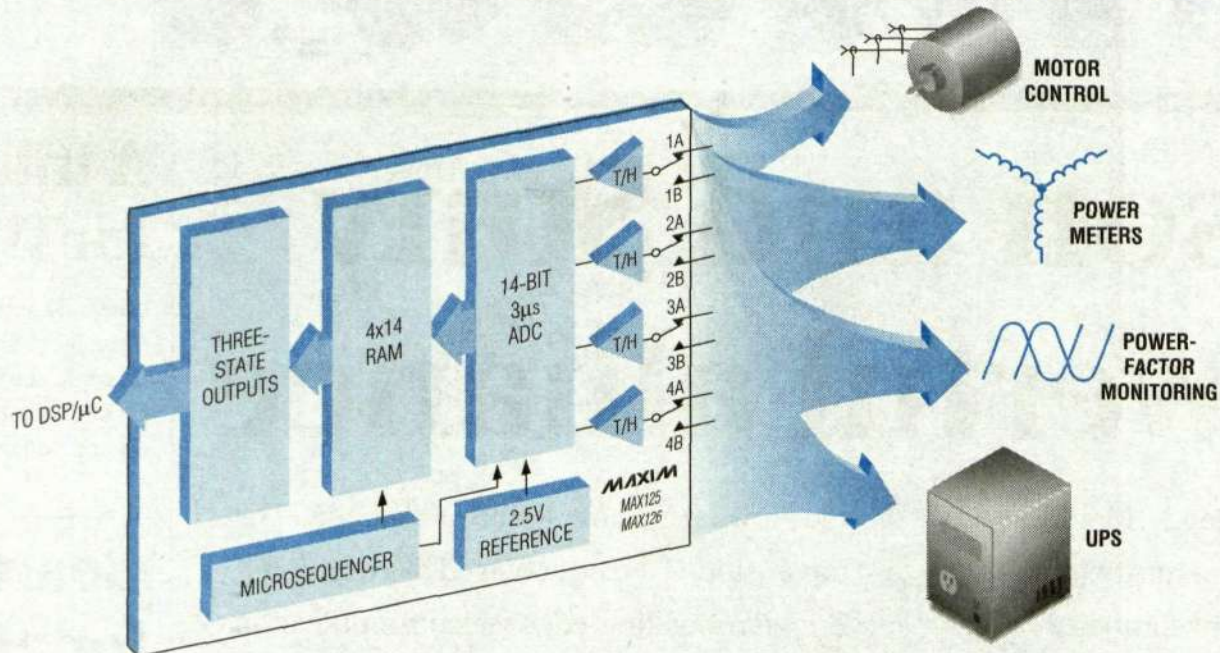
Hellström's message following publication of the substantially lower earnings in the first-quarter interim report, which are forcing savings of a further USD two billion.

News, 6

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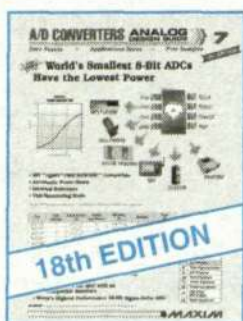


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MAX125	14	—	8	±5	3	2.5	36-SSOP
MAX116	12	Yes	8	±2.5	2	2.5	36-SSOP
MAX126	14	—	8	±2.5	3	2.5	36-SSOP

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Efficiency measures will help Ericsson pull through

The economic downturn and slower market growth led to considerably lower earnings during the first quarter. This is forcing Ericsson to implement savings of USD 2 billion, including a reduction in the company's workforce by about 12,000 persons.

► "It doesn't feel good having to let so many people go, but in the situation we're in, like other companies in the industry, we're forced to adapt to the general business conditions and the weakened economy," says Kurt Hellström, Ericsson's President and CEO.

The first interim report of the year was presented on April 20. Earnings of USD 60 million, including revenue from the sale of the remaining holding in Juniper, were in line with the forecast provided by management in March. The savings program presented on Friday affects 10,000 company employees. In addition, further adjustments will be made to the Consumer Products division's operations. Measures in this division are expected to affect some 2,000 employees. At the end of the year, Ericsson will have fewer than 90,000 employees, compared with 105,000 at the beginning.

The factor underlying the gloomy figures in the report is a general downturn for the entire industry, which is due in turn to a weakening of the global economy, in which the US economy is currently inhibiting general growth.

"The telecom sector has declined extremely rapidly during this economic downturn. The operators have postponed investments in infrastructure and this has led to a substantial reduction in our sales. In addition, sales of mobile phones have been much lower than previously," continues Kurt Hellström.

Savings in five areas

With the aim of addressing this downturn, the Executive Management Team has decided to make far-reaching cuts in company costs. At the same time as the interim report was presented, a plan was also announced for the saving of a further USD 2 billion. In addition, the savings measures previously approved for the Consumer Products division – the Back-to-profit program – are being increased from USD 1.5 billion to 1.8 billion.

In accordance with the plan, savings will be made in five areas:

- Costs for administration and sales will be reduced.



"Naturally, I wish that we did not have to reduce the workforce, but it's absolutely necessary in our current situation," says Ericsson's President and CEO, Kurt Hellström. Photo: Lars Åström

- Operations in certain markets will be cut substantially.
- The number of consultants will be reduced, in certain cases to less than half. Today, there are 15,000 consultants in Ericsson.
- Review and coordination of the company's information systems and information technology, IS/IT, in order to reduce costs for such items as software support and licenses.
- Concentration of research and development operations to fewer locations.

"What we will achieve is the reinforcement of our core operations. In this way, we will be able to maintain our leading global position as a supplier of systems for mobile and wireline networks," says Kurt Hellström.

"Naturally, I wish that we did not have to reduce the workforce, but it's absolutely necessary in our current situation. However, I want to emphasize that we intend to do our best to help the peo-

ple affected find new jobs outside Ericsson," says Kurt Hellström.

Work to implement the savings program is now getting under way. A central project group has been appointed, but the main responsibility lies within the market areas and divisions. The changes are to be implemented as soon as possible.

"Above all, measures will be taken to boost the organization's efficiency and it's important that this is done fast. In many areas, the work has already begun and several units have

already produced savings plans that are being put into practice now," says Kurt Hellström.

Each individual employee also has a responsibility for ensuring that the savings measures are effective.

"I want everyone to be aware of costs and that we must now eliminate every expense that is not necessary."

I want everyone to be aware of costs and that we must now eliminate every expense that is not necessary

Despite the difficult situation, Kurt Hellström is optimistic about Ericsson's future. Sales of mobile systems increased by 9 percent during the quarter, while the successes noted for Engine led to a sales increase of 37 percent for Multi-Service Networks.

Favorable situation

"These are positive figures in view of the prevailing economic climate. And things look even more optimistic in the longer term. We know that there is a strong need for 3G systems as a result of growing traffic in mobile networks, while mobile Internet will make increasing inroads. During the second half of this year, we anticipate strong growth for GPRS and, in 2003, the pace of development for 3G will also gather momentum. With 68 agreements for GPRS and 26 for UMTS/WCDMA, we have an extremely strong market position."

"The savings program we're now implementing gives Ericsson an excellent base when the market starts to expand again," says Kurt Hellström.

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DID YOU KNOW THAT...

...Ericsson is one of the oldest companies in the telecom sector.

	Established
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Ericsson	1876
Motorola	1947
Nokia	1963



Sony Ericsson sees light of day

The landmark joint venture between Ericsson and Sony Corporation was officially announced in Stockholm and Tokyo Tuesday, April 24. Details of the Memorandum of Understanding were revealed at the press conference in Stockholm.

Ericsson's CEO, Kurt Hellström, stated that new mobile phone joint venture is to be established by October 1 2001 and will be profitable from the beginning. Journalists repeatedly asked about financing of the company and Hellström explained that Ericsson and Sony were "going in on a 50-50 basis", but added that it is too early to discuss details.

Other questions concerned branding of the jointly developed products. Again, Hellström confidently and optimistically noted that with the advent of 3G and Mobile Internet services, this is an opportune time to create a new brand for the future. He said the companies would begin by migrating their individual technologies, then work toward joint development of new technologies. Roll out the first products will begin as early as next year.

Speaking via video from Tokyo,



Sony Corporation President & CEO Kunitake Ando, Sony's Executive Vice President Katsumi Ihara and Nippon Ericsson K.K. President and chief representative Morgan Bengtsson shake hands during a press conference in Tokyo, Tuesday, April 24.

Photo: Koji Sasahara/Pressens Bild

Sony's Corporate Executive Vice President, Katsumi Ihara – also named President of the new joint venture company – said he looks

forward to a relationship with Ericsson that will enable the new joint venture to develop quickly globally. The first priority is product devel-

opment. "We need to establish a product development, planning and design team as soon as possible," said Ihara. He stressed that

speed is very important to create an agile organization that can deliver new products with the shortest time to market.

Otto Zich, Chairman and CEO for Sony in Europe was also on hand at the press conference. He stressed that the partnership with Ericsson would strengthen Sony's competitive edge globally in the future. Asked about the company's receptiveness to sharing research and development information with Ericsson, he said there was no problem. Hellström explained that the companies have agreed on access to technologies and that they would complement one another.

Journalists were curious about mobile phone market share and how Ericsson might recover from recent setbacks. Jan Wäreby, President of Ericsson's Consumer Products Division, said that new competitive products would help to win back market share. He cited Ericsson's experience with operators and expertise in network systems, and Sony's strength in consumer products as key points for the new company's success.

Praise was delivered all round as both Hellström and Ihara described the teaming up of Ericsson and Sony as a perfect match. Hellström noted that Sony brings with it consumer design: consumer marketing, branding and distribution channels: multi-media products and a strong Asian presence. Ihara said: "We will maximize our resources and we can learn from each other while retaining our respective corporate cultures."

The joint venture set-up will see Katsumi Ihara as President, Kurt Hellström as Chairman, and Jan Wäreby as Executive Vice President, with a global management team based in London.

An innovative and ambitious tech company

The Sony Ericsson collaboration is hailed by both companies and market pundits as a "perfect match."

As one of the world's leading manufacturers in the consumer electronics industry, Sony can help Ericsson beef up its brand reputation and marketing strategies. In turn, Ericsson can fill in the blanks in Sony's mobile technical competence and customer base in Europe and the US.

Established in 1946 in Tokyo, Sony today is one of the most recogniz-

able brand names for electronic products, especially games and gadgets. "Since the mid-1980s, Sony has grown business steadily by successfully turning out one hit product after another," reports analyst West LB Research.

In fact, games have become one of the most important income sources for Sony, accounting for 27 percent of the company's profits.

Sony makes PDC, CDMA and GSM phones, but results at the end of Q4 2000 showed a market share of less than one percent in terminal

manufacturing. Analysts have cited the re-entering of the US market as a challenge for Sony on its own. As one force, Sony Ericsson Mobile Communications has clout in Asia, Europe, and the United States.

Ericsson's share of the mobile market is considerably larger, having sold 43 million phones compared to Sony's 7 million, but the marketing and brand expertise of Sony is expected to boost the reputation of Ericsson's ailing mobile phones business.

When Sony took over CBS Music

and Columbia Pictures in the late 1980s, management turned losing prospects into moneymakers. Furthermore, technical innovation from Sony gives it positive headlines.

West LB Research gives Sony an "Outperform" rating: "At present, Sony is the top brand in the digital AV markets as well, we believe that Sony should be able to maintain a high market share."

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Japan – a forerunner in 3G

Competition for customers is fierce in the Japanese market. Altogether, there are 60 million mobile phone subscribers in the country.

The Mobile Internet has already become a mass-market phenomenon.

Some 30 million Japanese use Mobile Internet services, and of these approximately 3 million are active WAP users, according to statistics from the WAP Forum.

"Japanese terminal manufacturers are closely and rapidly following customer needs, upgrading often and coming out with new products all the time," says Michael Björn, General Manager of Mobile Internet Solutions at Ericsson in Japan.

In Japan, no terminals are manufactured without color screens anymore. Some have built-in cameras. Several offer Java support. Video-phones have been available for a year, and there are even mobile

phones that offer streaming and downloading of music.

Japan has not been at the forefront internationally when it comes to computers, landline Internet service or first generation mobile telephony. Expectations surrounding 3G terminals have therefore been high.

The UMTS 3G standard is expected to break down barriers that previously existed between Japan and the rest of the world. A common standard will increase expansion opportunities for all terminal manufacturers. Currently, Japanese manufacturers are in the lead.

Operators' NTT DoCoMo and J-Phone have both chosen to invest in UMTS.

Modest sales

"Japanese terminal manufacturers will have a domestic 3G market earlier than the rest of the world. This will give them plenty of opportunities to test their way when it comes to consumer demand, both in terms of services and products," says Ulf

Körner, Professor of telecommunications at the Lund Institute of Technology and a board member of the Swedish National Post and Telecom Agency.

Sales by Japanese manufacturers of their mobile phones in Europe have so far been modest.

Several suppliers have, however, expressed an ambition to expand in Europe. All of them will soon have offerings available within the 3G field.

"These players will certainly grow in importance in the European market," says Ulf Körner.

A major catalyst

Bertil Thorngren, Professor and head of the Center for Information and Communications Research (CIC) at the Stockholm School of Economics, predicts that GPRS will be the major catalyst for mobile Internet services in Europe.

Kari Malmström
freelance journalist



There are approximately 60 million mobile phone subscribers in Japan. The Mobile Internet has received widespread acceptance, and is much more common than landline Internet service and home computers.

Photo: Lars Åström

Ericsson and Vodafone make 3G history

Ericsson has now placed the world's first live voice call over a commercial WCDMA network. The network belongs to the UK's Vodafone, which described the event as "an important milestone."

The call was made on a complete network, consisting of 30 base stations in the Thames Valley, in the UK. Vodafone representatives drove around in a bus, placing calls from a prototype mobile phone.

"The phone is the size of two shoeboxes and weighs over a kilogram. It's not exactly the sort of thing you carry around in your shirt pocket," says Mikael Halén, head of

WCDMA at Ericsson Radio Systems.

For Ericsson, it is important to demonstrate that it has a head start as a supplier of WCDMA networks. Ericsson has been named as supplier in 25 out of 47 of the WCDMA commercial agreements announced, making the company the world's leading 3G supplier.

"Now we're hoping to entice those who have not yet chosen us," says Mikael Halén.

Although he was not on



Mikael Halén

hand during the UK test, he was in constant telephone contact with the test group. The call was a success and good call quality was achieved, according to both Ericsson and Vodafone.

In a statement, Vodafone's UK chief operating officer, Gavin Darby, described the event as "yet another important milestone in the development of our multimedia services."

Now, the next step is to rerun the test using ordinary 3G telephones. Since Japan's NTT DoCoMo is expected to launch limited 3G services by May 31 of this year, it is anticipated that phones will be available on the market by then. Vodafone

does not have plans for a commercial launch of its 3G network before the second half of 2002.

Ericsson has always been a leader in the WCDMA field. In 1997, the company delivered the world's first experimental system to NTT DoCoMo. The first roaming contracts between a GSM network and a WCDMA network were established in September 1999. Exactly one year later, it was time for yet another world record. Ericsson, together with Japan Telecom, conducted the world's first test of IP telephony over WCDMA.

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HELLO THERE...



Photo: Ecke Küller

Gwenn Larsson

...head of strategic marketing for CDMA and seated in Kista, north of Stockholm. It was almost two years ago that Ericsson acquired Qualcomm's infrastructure division in San Diego with the development and manufacturing of CDMA systems.

When did you move to Kista?

"I arrived here one year ago, before that I had worked for three and a half years at Qualcomm. I'm the only CDMA representative here."

How many CDMA subscribers are there today and who is the largest supplier?

"There are currently 80 million subscribers. By 2004, that figure is estimated to have increased to 260 million. Lucent is the biggest, with 40 percent of the market. Last year, Ericsson had seven percent of the market. The US and Asia, especially Korea and Japan, are major CDMA markets. Ericsson's largest CDMA customers are in South America."

What is the most important issue for Ericsson's CDMA operation this year?

"Negotiations are under way with the Japanese operator KDDI, which we hope will result in a significant order later this spring. China is also a large market for CDMA, where we have previously delivered five small systems. Now we are hoping for a larger order this summer. The American operator Sprint is going to expand its CDMA system. We hope to have an opportunity to be involved in this."

How is the development of cdma2000 going?

"By the end of the year, a First Office Application (FOA) will be installed for a customer. This will be an important milestone for cdma2000."

How does it feel to have one's CDMA colleagues so far away?

"The distance is nothing to speak of when using e-mail. On the other hand, it can be a little bothersome with all of the late telephone calls. Sometimes I miss my colleagues when we've reached some CDMA success and there is no one to share that feeling with."

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Gunilla Tamm

Major contract in Philippines

Ericsson has been assigned to expand the GSM network of Philippines mobile phone operator, Globe Telecommunications, in a contract valued at USD 100 million.

Ericsson has long been a GSM supplier for Globe Telecommunications in the southern islands of the country. This contract marks the first time that Ericsson is involved in a GSM expansion on the northern island of Luzon, which also includes the capital city of Manila. This major expansion is one way for Globe Telecommunications to meet the demands of its fast-growing mobile phone subscriber base, which currently amounts to almost 2.7 million.

"Ericsson and Globe share the same vision, to provide Philippine consumers with the best possible technology and service," says Gerardo Albaza, President of Globe Telecommunications.

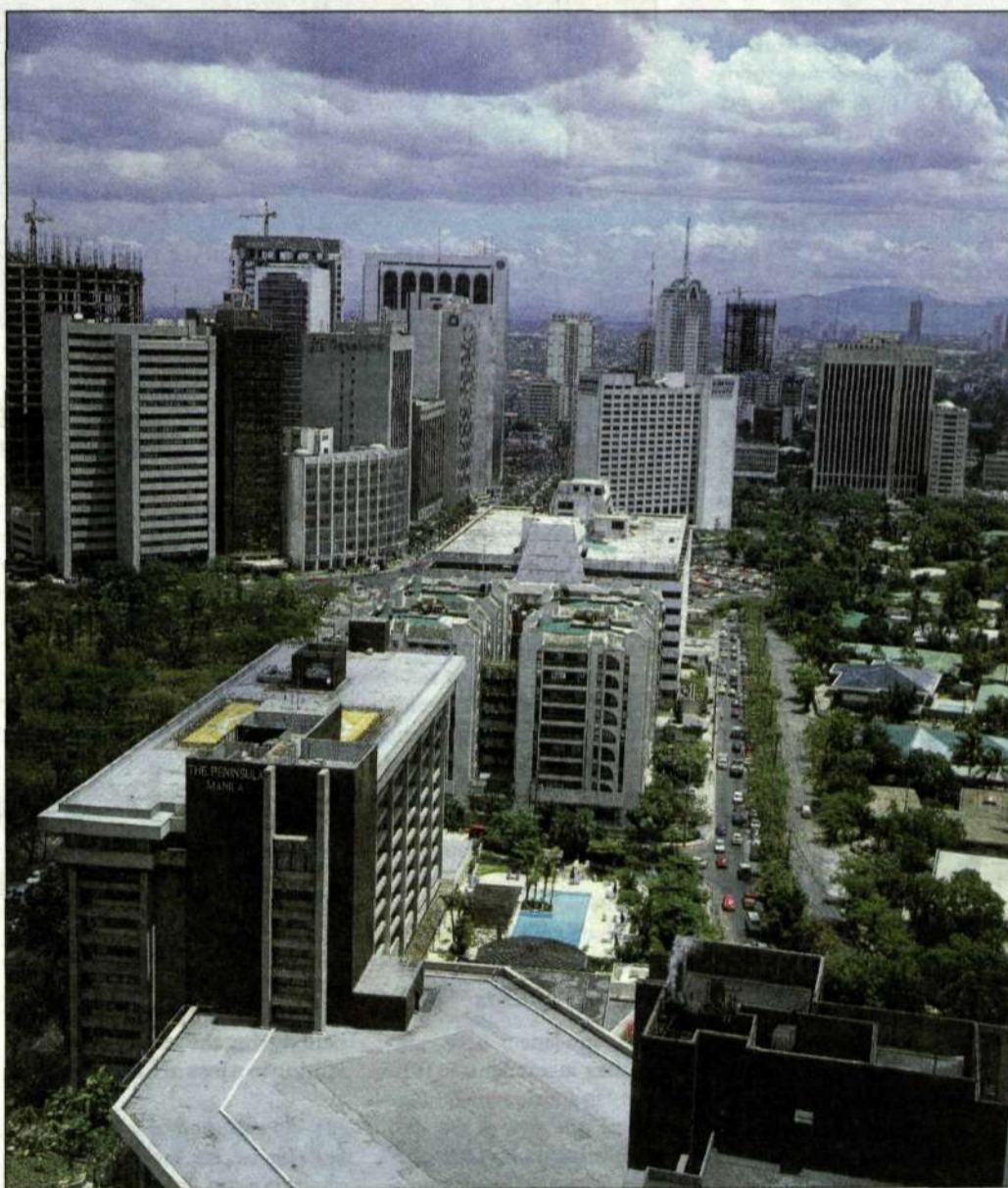
The expansion will be completed before the end of 2001.

Jenz Nilsson

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Ericsson will be involved in a GSM expansion in Manila, the capital of the Philippines, which is situated on the northern island of Luzon.

Photo: Giorgio Ricatto/Tiofoto



Successful CDMA test in Mexico

Ericsson recently conducted a successful customer test of a complete CDMA solution for the mobile phone operator Pegaso and its network in Tijuana, Mexico.

The successful First Office Application (FOA) encompasses four

countries, four languages, and demanded both evening and weekend work.

It is no small task to develop a commercial system from concept to customer in less than two years.

A very major challenge was to switch out parts of the existing equipment without interrupting

traffic – this was accomplished in only 35 minutes.

Last July, Ericsson and Pegaso signed a contract for the expansion of the operator's CDMA system in Mexico.

Tijuana is the first place where Ericsson's complete CDMA solution has been put into operation.

Next in line are Mexico City, Monterey and Guadalajara. It will be possible to convert to cdma2000 with the equipment that will be delivered.

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Systems still growing

There was good news and bad news in Ericsson's first-quarter interim report. While systems are moving forward, mobile phone operations reported continued decline. Invoicing for GSM and Engine increased by more than 30 percent.

Total order bookings fell by 5 percent and Ericsson's pretax income totaled SEK 600 million.

Earnings are in line with the revised forecast presented on March 12

this year. The total loss for mobile phones amounted to SEK 5.7 billion.

The delivery volume has declined by 41 percent, from 10.5 million units to 6.2 million and invoicing has fallen by 52 percent.

Positive result

Systems is the area offering a gleam of brightness. Sales of mobile systems were up nine percent and the total order bookings by eight percent, corresponding to SEK 62.6 billion. The positive result is largely attributable

to continued successes for GSM systems and an increased demand for Ericsson's Engine solutions. Sales of GSM systems are now taking off in North and Latin America, where TDMA operators are planning to use GSM/GPRS for the transition to 3G.

During the first quarter, Ericsson secured twelve new Engine contracts. This includes the major contract from the US telecom and data-com operator WorldCom for systems in the US, Latin America and Europe. Ericsson now has a total of

51 Engine contracts throughout the world and Engine alone constitutes 16 percent of Ericsson's sales.

Decline in TDMA

On the other hand, there has been a decline in demand for TDMA and PDC systems, which is attributable to the American and Japanese operators' new 3G approach.

Ericsson anticipates slower sales growth in the second quarter of 2001 in systems and lower telephone sales.

This means that operating profit

will not improve compared with the first quarter of 2001. However, company management does emphasize its long-term strategy:

"There is no doubt that there is strong demand for 3G. We anticipate strong growth in subscriptions for GPRS in the second half of the year and similar volume growth for 3G services in 2003," says Ericsson's CEO Kurt Hellström.

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Engine stays right on track

The downturn in the US market is also being felt in Multi-Service Networks' operations.

Einar Lindquist, head of the division that is developing wireline solutions, says that developments are nevertheless proceeded as expected during the first quarter of the year.

During the period, the division's sales rose by 37 percent and Ericsson secured 12 new Engine contracts.

"We have experienced strong growth in Latin America and we are stronger in all regions now than we were at the same time in 2000. We are certainly noticing the US recession, but we remain only marginally exposed to the American market," says Einar Lindquist.

"Combined with our strong offering, which is six to twelve months ahead of our competitors, all this means that we expect continued growth."

During the first quarter, Multi-Service Networks scored a major breakthrough in the US market. WorldCom, one of the world's largest operators, selected Engine as its platform for its entire global network.

"This gives us an extremely strong position in the US and in the rest of the world. We are prepared for the time when the market in the US gets going."

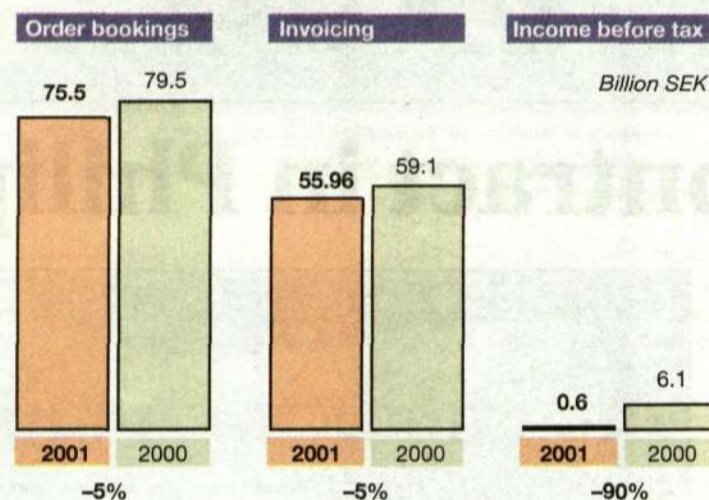
Ericsson is continuing to grow as a broadband supplier. Several major contracts have been secured during the past quarter. As an example, Einar Lindquist mentions the order from Tele Danmark.

"This is one of the largest ADSL contracts in the market and a further example of our strong portfolio, which puts us at the forefront when the broadband market starts making serious progress."

Jesper Mott

First quarter 2001

Ericsson's earnings for the first quarter of 2001 compared with the first quarter of 2000.



Ericsson's result before taxes for the first quarter amounts to SEK 600 million, in line with revised guidance on March 12. While GSM and Engine sales increased by more than 30 percent, overall sales and orders decreased by 5 percent, compared with the first quarter 2000.

During the first quarter, orders for systems grew 8 percent, driven by 3G and Multi-Service Networks, while development in mobile phones caused the overall order decline.

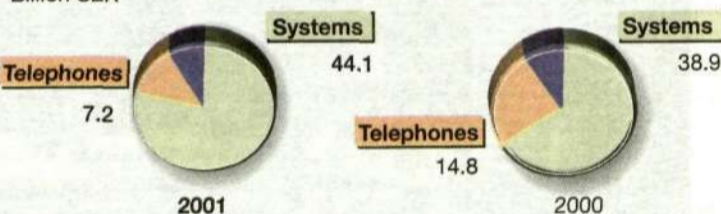
Negative cash flow was primarily attributable to operating losses in mobile phones and slower customer payments. Outlook for the second quarter is that income before taxes will not improve compared with the first quarter.

An additional efficiency program has immediately been implemented to improve cash flow and restore profitability.

Illustration: Mikael Parment

Invoicing by segment, first quarter

Billion SEK



Increased pace of 3G sales in first quarter

During the first quarter of 2001, the Mobile Systems Division continued to show strong growth in sales of GSM Systems, and increased its total sales nine percent. At the same time, activity in the 3G segment gathered momentum.

GSM continues to grow, particularly in Asia, where China is the predominant market. A few weeks ago, major new GSM contracts were signed for Beijing and the provinces of Shandong, Hebei and Yunnan.

Commercial contracts

A total of 26 3G agreements have been announced, a number of which have now been turned into commercial contracts. Delivery of 3G products started during the fourth quarter of 2000. To date,

Ericsson has secured 68 orders for GPRS system upgrades and 55 of these have already been implemented. Several have also been placed in commercial operation.

TDMA operators in North and South America plan to use GSM/GPRS for their transition to 3G. To date, five operators have announced their 3G plans and all have selected the GSM/GPRS track.

AT&T was the first company to publish its plans. Ericsson was selected as supplier by all five operators, and most of these chose Ericsson as sole supplier.

The economic downturn, combined with operators' plans to adopt the GSM/GPRS route to 3G, has resulted in a decline in sales of TDMA systems.

However, it is anticipated that this may prove beneficial when volume supplies of GSM/GPRS

equipment to these operators commence.

Reduced investments

Operators in Japan have also reduced their investments in PDC equipment in anticipation of 3G.

A topical question at the moment involves solutions for financing the build-out of the operators' 3G networks. Many operators are looking for customer financing.

Given the current economic climate, Ericsson will adopt a more cautious approach to customer financing and will only offer this in highly exceptional cases and then only for short periods. Customer financing during the first quarter of 2001 remained at the same level as in the fourth quarter of 2000.

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Consumer products sales below expectations

Earnings for the Consumer Products Division were lower than anticipated. Sales declined by 52 percent during the past quarter, resulting in a loss of SEK 5.7 billion.

"This is a substantial loss, but we can see that we are moving in the right direction again, since the loss this quarter was the same as during the fourth quarter of last year, despite the recent slowdown that has been experienced throughout the mobile phone market. Moreover, by implementing our action program, we've managed to reduce costs more rapidly than expected," explains Jan Wäreby, Executive Vice President, Consumer Products Division.

There are several causes behind these results, including excess inventory among distributors and lower subsidies from operators, which resulted in a slower rate of growth in the mobile

phone market. A product surplus resulted in lower retail prices, lower volumes and larger than anticipated losses.

The Consumer Products Division has downgraded its sales prognosis for mobile phones this year, to between 430-480 million units. Despite the gloomy market situation, Jan Wäreby is holding steady to the goal of achieving profitability during the second half of this year.

"Things have gone very well for Ericsson for almost ten years now, in a market that has been dominated by growth. Positive earnings are all many company employees have ever known, which is why it is especially heartening to see such a fighting spirit within the company and the division despite the setbacks."

Ulrika Nybäck

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Difficult market today – brighter long-term

The telecom market is now slowing significantly, following the sharp growth noted last year. Torbjörn Nilsson, Ericsson's Senior Vice President Marketing, explains that the sector is now entering a period of economic decline and of major technology shifts.

In addition, companies will become more realistic in their approaches to the Internet and e-business models.

"At the same time, the market is more dynamic now than it was a year ago," says Torbjörn Nilsson.



Torbjörn Nilsson

Ericsson and business analysts expect lower investments in telecom equipment in the US market this year, due to a number of factors.

Many IT companies have collapsed during the past year. Fixed and mobile telephony is experiencing a technology shift, as circuit-switched data transfer is being replaced by packaged data, while broadband is replacing narrowband and mobile telephony is developing into mobile Internet.

Furthermore, expensive 3G licenses have become a heavy burden for many operators. Competition and the need for capital are leading to fewer but more dominant global operators. The number of new subscribers is also decreasing gradually, as mobile penetration increases.

"Despite the slowdown, Internet technology, broadband and mobile communications are here to stay and grow," says Torbjörn Nilsson.

Fragmented conditions

Many observers believe that the American market could recover slightly at the end of the year, but the situation is highly uncertain and there are no signs supporting such predictions at present.

Growth in the European market will be affected, although it is still too early to predict exactly how the economic recession in the US will impact on demand in Europe.



Jan Wäreby, Mats Dahlin and Einar Lindquist head the Consumer Products, Mobile Systems and Multi-Service Networks divisions, respectively. In the first interim report for 2001, the various divisions report differing results. Photo: Ecke Küller

The market trend in Asia is fragmented. The Chinese market is growing sharply. In Japan, however, growth in mobile telephony has leveled off, but mobile Internet is growing and the market is preparing for the introduction of 3G this year.

"We should expect a global softening of investment growth this year. Between five and ten percent is a cautious growth estimate for the entire telecom market in monetary terms, but if the worst comes to the worst, it could be lower."

In the market for mobile systems, growth is decreasing from 20–25 percent to between 5 and 15 percent. Torbjörn Nilsson is more optimistic about the long-term prospects for mobile systems.

"We still expect the number of mo-

bile subscribers to grow by between 25 and 30 percent this year. Based on this rate of increase, the number of subscribers will exceed one billion during the first half of the year 2002."

Market not ready

Plans were underway to introduce GPRS last year, but the market was not quite ready for this. Now, more terminals are being launched in the market and many operators will open their networks in the middle of next year. This will trigger demand for equipment during the second half of the year.

Ericsson has begun deliveries of 3G equipment for the first commercial networks. This equipment will be put into operation next year, while combined terminals for UMTS/GSM will

be available in the market during the second half of 2002.

"The order situation for 3G is looking good, but we will have to obtain more contracts if we are to secure our position as the market leader," says Torbjörn Nilsson.

He has great confidence in Ericsson's total product portfolio. Such solutions as Engine and Internet Service Platform will also generate favorable business opportunities.

Lower demand

Ericsson's new mobile telephones have been well received. During 2001, however, growth in the market for mobile phones will not be as high as in recent years. At the start of the year, the industry expected sales of 500 to 550 million telephones. Today, it is

estimating sales of less than 500 million phones. Ericsson is forecasting sales of between 430 and 480 million telephones.

The lower estimates are due to delayed technology shifts and a weaker replacement market – in other words, customers are waiting before they replace their current phones.

Although Torbjörn Nilsson believes that the market has not stagnated altogether, he emphasizes that Ericsson must adapt its cost structure to a lower level of growth.

"Both broadband and mobile communication will continue to grow and change our lifestyle," he says.

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Greatest growth in Asia

The Asia Pacific market area has the largest level of growth among Ericsson's five market areas.

The Central and Eastern Europe, Middle East and Africa market area is showing the second-largest growth rate. These rankings are based on figures for external sales published in the interim report.

During the first quarter of the year, sales in Asia Pacific increased by 19

percent compared with the year-earlier period. The largest market in the area is China.

In Central and Eastern Europe, the Middle East and Africa, sales climbed 12 percent, while the figure for Latin America was 9 percent.

In North America and Western Europe, sales fell by 16 percent and 24 percent, respectively.

A table of Ericsson's ten largest markets in terms of invoiced sales during the first quarter shows the US and China sharing first place, each with 11

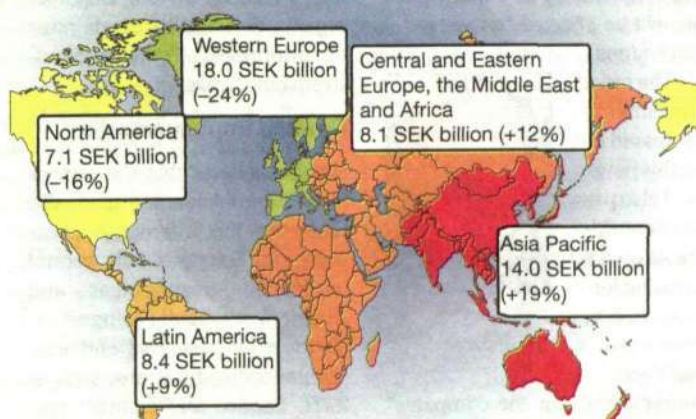
percent of total sales. Brazil is the third-largest single market, with a 7-percent share, followed by the UK, with 6 percent, and Italy with 5 percent.

Germany, with a 9-percent share, tops the list of the ten largest markets in terms of order bookings during the first quarter, followed by China and the US, each with 8 percent. Spain and Brazil share fourth place, with 7 percent each.

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EXTERNAL INVOICING BY MARKET AREA



Figures for the first quarter of 2001 and the change compared with the first quarter of 2000. Illustration: Paues Media

Reducing costs is everyone's responsibility

The efficiency program not only applies to those who will be affected by cut backs. Now everyone must contribute to cost savings. These were the messages delivered by Ingemar Blomqvist, who leads the group responsible for the efficiency program.

According to the program, USD 2 billion must be saved. These savings will be realized primarily within administration, sales, research and development, internal IT systems and through reduced activity in certain markets.

The efficiency program will mean that as many as 12,000 persons will be directly affected. Nearly half of the cutbacks will occur in Sweden, where Stockholm is the region with the greatest share of these types of operations, although other regions, such as Gothenburg and Lund, may also be affected. It is still too early to say exactly where cutbacks will take place.

"The growth that we have experienced in recent years has forced us to significantly expand the organization to meet demand. Today, the situation is different, and in many cases we have an organization that is extremely complex and not sufficiently effective," says Ingemar Blomqvist, who was appointed by Kurt Hellström to lead the efficiency program.

"The divisions, market units, product units and sub-units all have their own personnel, within Human



Ingemar Blomqvist urges everyone to take responsibility for significantly reducing costs. Photo: Ecke Küller

Resources, marketing and finance control. There is much money to be saved here. We will carefully review our operations to achieve better coordination and more effective use of resources," says Ingemar.

Project consolidation

Research and development activities will also be reviewed.

"It is important that we consolidate these operations. Today, a design center may work for ten or more different product units and thus is forced to outsource work to other design centers in other countries. Fragmenting responsibility in this way is not efficient and should be avoided," continues Ingemar Blomqvist.

The efficiency program is focused on Ericsson's core business operations, primarily systems. A number

of projects may therefore be removed. This will free up resources that will be needed to compensate for the reduced use of consulting services.

"One of the first measures will be to survey expertise among our employees. This will allow us to locate the competence required to replace consultants," explains Ingemar.

Two additional areas for cost savings have been identified. One is less important markets, where the activity level will be decreased. Another is internal information systems, for which costs must be reduced.

Everyone's responsibility

Ingemar Blomqvist and his group have global responsibility for implementing cost savings, but the most important work will take place within individual units. In many cases,

The efficiency program

More than USD 2 billion must be saved yearly, starting in 2002.

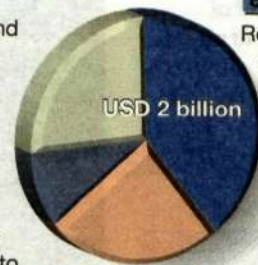
In addition to the back-to-profit program already in progress, a working group has been appointed to ensure that the following measures will be implemented before year-end:

500 million

Focused on research and development, including administration, through a consolidation of the number of research centers.

200 million

Central management of information technology to set corporate priorities and reduce expenses.



800 million

Reduced sales and administration costs in all divisions and corporate functions.

500 million

Sharp reduction of activities in selected markets, thus reducing the number of offices, consultants and employees.

Sharp reduction in the number of consultants

The efficiency program may affect approximately 12,000 employees, of whom more than half outside Sweden.

The efficiency measures will mean a sharp reduction in the number of consultants from the current level of 15,000. In some areas, more than half may be eliminated. Consultants will be replaced by Ericsson employees as far as possible.



Illustration: Mikael Parment

savings plans have already begun. Cost savings will not end there, however. Ingemar Blomqvist hopes that everyone will appreciate the seriousness of the situation and save wherever possible. This may be a question of not forwarding calls from an office to a mobile phone un-

necessarily, not producing color print-outs when they are not needed, not traveling in business class, avoiding expensive customer events, etc.

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Thrifty and wise

The economic downturn began in the US at the end of 2000. Per-Arne Sandström, head of the North America market area, has prepared a plan to streamline Ericsson's organization in the US.

At the same time, highest priority must be given to the needs of customers.

Two weeks ago, Per-Arne Sandström announced that cost-cutting measures within the company would involve workforce reductions. Exactly how many people will be affected has yet to be determined.

"The mood was rather depressed after this news, but I also perceive considerable understanding for economic downturns and their consequences for the company," says Per-Arne Sandström.



Per-Arne Sandström

of 2000 that the head of the market area started to see that the company would have to adapt to the looming economic downturn. He convened a small working group at the company, which set about finding out where costs could be reduced. It was important to involve representatives from throughout the organization, particularly those working close to customers.

"The most important factor now, despite the savings, is to ensure that our customers are satisfied, which is why our customer organization and its needs must be prioritized," Per-Arne Sandström emphasizes.

Gradual implementation

He also believes that the savings must be implemented gradually. Currently, the Internet Applications and Solutions unit, central production management and strategy functions are being affected most by personnel cutbacks. Administrative functions, such as IS/IT, finance and contract employees will also be reduced.

"It's important that everyone is

loyal in times of cutbacks, including business and product units with operations in the US. This could involve everything from flying economy class to reducing the number of conferences. We're also putting a freeze on all new PC purchases and software updates," says Per-Arne Sandström.

Delivery capacity

This year and next year, AT&T is to build a nationwide GSM and GPRS network. Some operators are also beginning the build-out of their 3G networks, but not on the same scale as in Europe.

"It is important that we streamline the organization, while also having the capacity to fulfill deliveries quickly. The measures for achieving this include establishing strategic cooperation in such areas as the installation and implementation of mobile networks."

He believes that an economic turnaround for the entire market will occur during the second half of 2002.

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Western Europe investing in 3G

To create capacity for the build-out of 3G and to compensate for reduced investments in GSM, it is more important than ever for the Western Europe market area to sharply reduce overheads.

Market area manager Ragnar Bäck has a tricky equation to solve. During the coming year, about thirty 3G networks are to be built in Europe, while personnel and other costs must be reduced.

"The operators are not investing as much money in the second-generation GSM networks any more. They are waiting so that they can invest even more in 3G systems. These investments can already be seen in the form of orders, but will not appear as invoiced sales until next year's interim reports are published," Ragnar Bäck explains.

Ragnar Bäck is reviewing all areas, from personnel reductions, IS/IT, ad-

ministration and consultants to the purchase of computers. The build-out of next-generation mobile systems will be a challenge, but Ragnar Bäck has full confidence in his organization.

"Ericsson is in a favorable position, with its long experience of supplying and installing systems," says Ragnar Bäck, who emphasizes that the ongoing savings are something that everyone must think about.

"It's important to cooperate, learn from one another, highlight the units that succeed in reducing their costs and still have a well-functioning organization."

Ragnar Bäck believes that the savings have to be considered in a broader perspective.

"Nearly all telecom and datacom companies are now being forced to reduce their costs in various ways. The economy will turn upwards again – and then Ericsson will be better equipped than any other telecom company," he concludes.



Ragnar Bäck

Ulrika Nybäck

All divisions must save

Expanded action programs, a hiring freeze and a flatter organization. The quest for cost-savings within the divisions is taking many different forms, but all are part of the same goal – to reduce money spending.

The Consumer Products Division's Back-to-profit action program initiated last year continues according to plan. The division is going to have one of its own units develop and market mobile technology platforms, for both Ericsson and other companies. The downturn currently being experienced within the mobile phone market will result in the layoff of an additional 2,000 division employees.

"With falling demand for mobile phones, few mobile phone suppliers have both the expertise and the economic prerequisites to manufacture mobile technology platforms. This is one of Ericsson's core competencies and is something from which we can earn a substantial amount of money," predicts Jan Wäreby, Executive Vice President, Consumer Products Division.

Reducing the workforce by yet another 2,000 people means the total number of employees by year end will be 5,000, compared with today's 14,500. It is not yet clear exactly who will be leaving.

The outsourcing agreement with Flextronics has been completed, and operations are in the process of being switched over. The first employees have already switched employers in both the US and Sweden.

Mobile Systems on diet

The Mobile Systems Division will also have to tighten its belt some more. The Cost Adaptation Program (CAP) that was introduced in March, will be expanded. The goal is to reduce costs by 25–30 percent, which will be achieved partly through more efficient work routines and focusing on core business.

The program is the Mobile Systems division's share of the overall efficiency program within the company. CAP was intended to lead to greater cost-awareness and a reduction in the number of consultants. Originally, the goal was cost savings of ten percent. Now that goal has been set higher.

"An important aspect of the expanded program is an oversight of

our organization in order to streamline our work routines and define more clear roles and responsibilities. Among other things, we will conduct a review of the structure of our business and product units," says Jan Ögren,



Jan Ögren

business controller and head of the action program at Mobile Systems.

During the latest Dialog survey, and based on interviews conducted with employees, it has become clear that many do not think that work is conducted efficiently and that there is a great deal of redundancy. There are also skills that are underutilized.

"Product units have grown in both size and number, and we are now reviewing how work should be delegated between those and the business units. Several coordination benefits could also be created, and this is also true between market and business units. The number of product units will be reduced and their primary task will be product development," explains Jan Ögren.

There will also be further cutbacks in the number of consultants.

Cutting back on travels

For Data Backbone and Optical Networks, a flatter organization and a hiring freeze throughout almost the entire division are being implemented. The number of consultants will also be reduced.

"We've established clear goals for what we must do this year and next in

terms of both income and expenses. We have to reduce the amount of travel and the number of consultants, retaining only those with key competencies, especially within research and development,"

says Mike Thurk, Executive Vice President of the division.

A number of organizational changes are also in progress. The number of levels within the company will be reduced to create a flatter organization.

"However, the largest savings will be achieved by integrating people with IP skills within the market units. That is important in order to secure Engine and 3G contracts."

Data Backbone and Optical Networks will, however, be able to continue bringing people into the Optical and AMN product units – the latter being the one that is involved with ATM networks.

This is where critical customer projects, which cannot be compromised, are being developed. However, all new hires must be approved by Ericsson's CEO Kurt Hellström.

Global Services saves a bundle

The Global Services Division will save USD 100 million this year. While its services are selling well, the division's costs are much too high.

"The downturn within the industry is affecting our division just as much as it is affecting the other divisions at Ericsson. Although we're working mostly in the systems area, and both GSM and Engine are showing strong sales volumes, we must simultaneously review our overall cost situation," says Bert Nordberg.

The challenge pertains especially to the headquarters of Global Services in Stockholm, which has increased its expenses by 94 percent over the past twelve months.

"Certain departments and employees are spending too much money, and that simply cannot continue," he says.

Just as everywhere else at Ericsson, Global Services will review its utilization of external consultants. The division must also become better at quickly collecting money for its deliveries.

"We had USD 1.1 billion in unpaid services last year. Although the competitive situation obviously requires us to treat our customers to certain

services and products, we should be able to reduce unpaid deliveries by at least 40 percent."

In the middle of all these austerity measures, Bert Nordberg gives a reminder that the future of Global Services still looks bright.

"We have a well-filled order book and there is no reason to reduce the rate of deliveries simply because the financial situation is not as we had hoped. We are still counting on 25-percent growth this year and capturing additional market share before year-end.

More deals for fixed networks

Ericsson currently has over 50 completed contracts for the Engine solution. By year-end, Multi-Service Networks anticipates 90 contracts. Einar Lindquist, Executive Vice President of the division, emphasizes that the cost-saving measures will not affect Multi-Service Networks' capacity and resources to deliver Engine.

Ericsson's fixed network division has experienced a baptism of fire over the past two and a half years. The division has already been streamlined due to similar savings to those now being implemented throughout Ericsson, which has been conducted within the division for some period of time.

"We're continuing with this work. We're constantly reviewing the efforts that we are involved in. Are they too large? Are they right for the times? What should be canceled? What should be continued? This is what leadership is about. Our goals for 2001 remain the same. We are six to twelve months ahead of our competitors. The profit goals that we established before the year began are still in effect," says Einar Lindquist.

He also emphasizes the importance of improving capital formation. This is true of Multi-Service Networks as well as the other divisions.

"We're still tying up too much capital in inventory and accounts receivable. In reality, this is simply a matter of regular money management. We can't borrow money to finance our operations, so we will need to focus intensely on significantly improving cash flow."

SIX OPINIONS ON COST SAVINGS

What kind of everyday savings do you think can be found within your unit?



Alexander Sem, Ericsson Telecom, Sweden:
"My colleagues and I travel quite a lot and could save on our travel costs.

"We can choose to live in less expensive hotels and try to find the cheapest plane tickets possible."



Mats Tronellius, Ericsson Telecom, Sweden:
"By holding our conferences internally at Ericsson and not externally, we can save money. If

we arrange videoconferences, we can avoid going on long, expensive trips."



Mariann Bognár, Ericsson, Hungary:
"When we have external and internal visitors, we can provide them with simpler accommo-

dations. It's also possible to save money on travel. When flying into Stockholm, one can take the train into town rather than a taxi, for example."



Erhan Sayin, Ericsson Telekomünikasyon, Turkey:
"Certain savings can be achieved in daily fuel consumption.

We should force ourselves to use e-mail as much as possible, which will result in a reduction in call costs."



Tetsuo Kato, Ericsson, Japan:
"Both mobile phone calls and international phone calls should be made as brief as possible. Reduce the number of documents printed out by reading them on-screen more often."



Junko Kubota, Ericsson, Japan:
"We can, for example, review the number of business trips and start using video or telephone conferencing to a greater extent."

We're constantly reviewing our efforts. This is what leadership is about.

Einar Lindquist

R&D will not cut expertise

The cost-cutting program within the company also includes research and development. Expenses will have to be reduced by around USD 500 million.

"I anticipate that we will be able to do this without having to make cuts in our expertise or scale back important operations," says Jan Uddenfeldt, Senior Vice President, Technology, and head of research and development at Ericsson.

Currently, research and development (R&D) accounts for approximately 15 percent per year of the company's sales, which correspond-

ed to USD 4 billion in 2000. The primary cost-saving measures will be to reduce the number of intermediaries and to reduce administration and consultants. Ericsson currently has a large number of consultants working in R&D, and most of these will be let go. A number of cutbacks are also being made within the organization – certain projects will be discontinued and the number of design centers, which are currently to be found in several locations around the world, will be reduced. Expertise will be concentrated and work will be directed to the places where the expertise exists.

"Divisions will be reviewing and testing their projects and some of the projects which are not judged to lead to more profitable business will be shut down. The expertise that we will then free up can be utilized to replace the consultants. The result will be that we concentrate our resources in our most important areas."

Jan Uddenfeldt



Jan Uddenfeldt

Jan Uddenfeldt does not want to indicate in advance which areas will

be affected by the cutbacks or shutdowns, since this work is currently ongoing within the divisions.

"It's important that we create a consciousness that we must reduce our costs and that it is also important to find savings, even on small items.

However, what Jan Uddenfeldt is most eager to emphasize is that Ericsson will in no way compromise the expertise found within R&D, and that the company will retain its strong position within 3G systems.

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Ericsson takes lead in new protocol

» Ericsson has managed to become the first company to certify two GPRS phones for the new SyncML protocol. The SyncML protocol makes it possible to synchronize data between wireless and stationary devices across any kind of network.

An official announcement about which GPRS phones have been certified has not yet been made, but they will be released this year.

French Air Force orders Giraffe

» Ericsson Microwave Systems has received its second export order for its modern air defense system, Giraffe AMB. Ericsson and the French Air Force's supplier, DGA, have signed a contract for the delivery of Giraffe, which is part of the very latest generation of mobile radar systems.

American order for Mobitex

» Ericsson has secured a major order for Mobitex equipment from the US company Cingular Interactive. Demand for Cingular's intelligent wireless network is so great that the company needs to triple its capacity.

In order to meet demand, the operator is currently buying base stations and software from Ericsson worth USD 25 million.

Strategic delivery of fiber-optic cable

Ericsson Network Technologies has signed a contract with the Internet operator KPNQwest.

Ericsson will supply fiber-optic cable for the operator's data network, which covers 15 European countries.

"This involves a breakthrough, with significant growth opportunities, not only for us, but for all of Ericsson," says Per Thorkildsen, business manager at Network Technologies' office in the UK.

KPNQwest is a joint venture between the Dutch operator KPN and the American company Qwest.

KPNQwest is an Internet operator with its own data network. Based in the Netherlands, its network covers large portions of Europe, North America and Asia.

Deliveries started

Ericsson has been chosen as the supplier of fiber-optic cable for seven rings that will cover Europe in an Intercity network. The transaction is valued at approximately USD 30

million. Deliveries have already started and will continue through the rest of the year.

Flexible and mobile

The contract was the result of a strategic collaboration between Network Technologies (formerly Ericsson Cables) and Ericsson in the Netherlands.

The expanding offering of services has created a demand for broadband in the home. The roll-out of the Intercity network will be followed by the expansion of the

cable network in cities. Ericsson also sees its chances as favorable for delivering fiber-optic access solutions.

"We're a smaller player in this field, which makes us flexible and mobile. This is one of the reasons why they chose us over our larger competitors. Moreover, we have leading-edge technical solutions," says Per Thorkildsen.

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GPRS services launched in Lebanon

GPRS has come to stay on the Lebanese market. The operator France Telecom Mobile Lebanon (FTML) took the opportunity at the Telecom Middle East exhibition in Beirut to launch an aggressive marketing campaign for GPRS services.

At the end of last year, Ericsson was chosen by FTML as sole supplier of

their packet-based GPRS solution. Now, FTML is the first operator in Lebanon to launch GPRS Services for commercial use. The first trial GPRS call in the Middle East was performed in March, ahead of schedule. On April 18, the opening day of the Telecom Middle East 2001 exhibition, it was time for the first commercial call and market launch of the GPRS services.

At FTML's booth, Ericsson's GPRS

phones were sold, along with special offers for subscriptions. Interest was great among visitors, and the FTML booth was the main attraction at the show.

"The Mobile Internet is a very new technology and I am glad to see such a quick and positive response from the end users", says Elie Bou-Rjeili, GPRS project manager at Ericsson Lebanon.

GPRS is an important step in the

evolution to 3G networks. Ericsson's GPRS solution will integrate FTML's GSM mobile network with the datacoms/Internet world, making it possible for the operator to offer packet-switched IP services with wireless access to the Internet, intranet and other multimedia services.

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Mats Hellman sees advantages with prepaid. "End users achieve better control over their call costs," he says.

Photo: Ecke Küller

Prepaid – a huge success

Ericsson's prepaid system has been a huge hit. Sales increased by more than 70 percent last year and those successes continue.

"Everything points towards even stronger growth in the future. We had a very strong start to the year," says Mats Hellman, head of the Charging Solutions product unit at Ericsson.

When prepaid was introduced in 1996, few people believed that it would be so successful. Mobile operators were obviously interested in the increased credit controls that prepaid offered, although it hardly seemed likely that customers would be drawn to pay their calls in advance. Today, there are between 265 and 275 million mobile prepaid users worldwide. According to statistics from the EMC Database, 44 percent of all GSM users have prepaid subscriptions. For Ericsson, the prepaid system has become a real cash cow.

"We sell hundreds of millions of dollars worth of prepaid systems," says Mats Hellman. While he is obviously very pleased about these developments, he is not surprised.

"There are several advantages to prepaid compared with postpaid or traditional invoiced payments. End users have greater

control over their call costs and can avoid the surprise of unexpected telephone bills. Operators avoid having to send out invoices and ensure that they are paid," he says.

Ericsson is currently working with 80 mobile phone operators, 64 of which are GSM operators. A new report, "The next generation of prepaid services," issued by the International Business and Technology Consultants, (AMS), predicts that utilization of prepaid will continue to increase significantly in coming years.

By 2003 it is believed that 70 percent of all mobile phone users in Europe will have prepaid mobile phone subscriptions. At this year's CeBIT trade show, Ericsson launched the world's first prepaid system that allows prepaid mobile phone subscribers to use their telephones abroad.

"We know that increasing competition within prepaid will result in downward price pressures on solutions, which is why we're working hard to be the first to offer new prepaid functions and to ensure that expertise for supporting the system is built up at local companies," says Mats Hellman.

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Industry facing decline

Ericsson is not alone as it faces an uncertain market. This year's first-quarter reports indicate declines in profitability throughout the telecom industry, with few promising signs of a reversal of that trend.

The current decline is one of the most rapid ever experienced, stated Ericsson President and CEO Kurt Hellström at the first quarter interim report press conference on April 20. This has been reinforced by statistics from the US. The consulting firm First Call estimates that earnings for the 500 companies that comprise the Standard & Poors index (S&P) have fallen by 9 percent during the first quarter. That would make it the largest decline since the recession at the beginning of the 1990s.

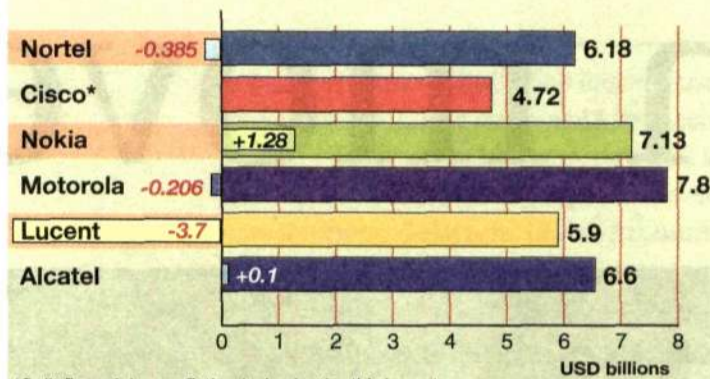
Expenses incurred

Interest expenses incurred by companies are another sign of an economic downturn. In 1999, Ericsson's interest expenses corresponded to 2.8 percent of sales, which was a record low. But with the large amount of borrowing in recent years, especially in the telecom industry, this figure has increased to 3.1 percent.

Motorola's interest expenses, for example, doubled during the most recent quarter to USD 86 million, compared with the same period last year. Consequently, the interest rate

FIRST QUARTER SALES AND EARNINGS

First quarter 2001 sales of Ericsson's competitors. The smaller bars indicate profit or loss in billions of dollars.



*Split financial year. Estimated sales for third quarter ending April 28. No earnings figure available.

Illustration: Björn Hågglund

reductions announced by the US Federal Reserve and Alan Greenspan are significant. The unexpected half-percent reduction in mid-April has had a positive impact on telecom players with large loans.

Share prices fell

Due to the recession, share prices and market values have fallen. Combined, the major telecom suppliers have lost more than USD 400 billion in value since the start of the year, according to figures from the Swedish research company Red-eye. Earnings forecasts for 2001 have also been revised downwards

by an average of 54 percent since the beginning of the year.

The one exception has been Nokia, which surpassed Cisco as the world's most highly valued technology company. Since Cisco operates on a split financial year, the company is out of step with the report week in April. Nevertheless, Cisco delivered an earnings warning at the beginning of the week.

Cisco is also taking an inventory write-down of USD 25 billion. In a critical Wall Street Journal article dated April 18, the newspaper claims that Cisco's management did not demonstrate sufficient foresighted-

ness. Cisco began stocking up on components last summer, since the company was unable to keep up with demand. This was a mistake that Cisco is paying for now, asserts the Wall Street Journal.

Few signs of recovery

Few signs of a turnaround have yet emerged within the telecom sector, although technology related companies such as IBM, Microsoft and Intel continue to at least meet the low expectations for those companies. Intel's CFO Andy Bryant, who was quoted in the Swedish financial daily, Dagens Industri, sees a positive change in demand.

"We are seeing signs that we have reached an equilibrium. During the first quarter we saw how the situation changed from no demand for products to some demand for immediate delivery."

But the large inventories among telecom suppliers mean that there are no positive signs within the industry.

"Manufacturers still have inventories that are too large, since they did not anticipate the problem soon enough. Consequently, it is too early to say when a turnaround might occur in this area," says Andy Bryant.

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FACTS/FIRST QUARTER REPORTS IN THE TELECOM SECTOR

MOTOROLA: Motorola reported a first quarter loss of over USD 200 million, compared with a profit of USD 480 million for the year-earlier period. Business is faring poorly for the Personal Communications business area, to which the mobile phones unit belongs. Motorola has twice previously issued earnings warnings and initiated comprehensive austerity measures, including laying off approximately 15 percent of its workforce. Motorola expects its mobile phones unit to return to profitability during the second quarter of 2001, and predicts total global sales of mobile phones for full-year 2001 to run between 425-475 million units. In the systems area, orders received for CDMA-based mobile systems fared poorly, down 14 percent compared with the year-earlier period. Motorola has secured five 3G contracts to date.

NOKIA: Nokia reported a profit before tax of USD 1.3 billion for the first quarter of this year, and continues to show high profit margins. Sales amounted to USD 7.1 billion. Profitability for Nokia's mobile systems was in line with expectations at 17 percent, while the profit margin of the mobile phone business area was 20.7 percent. In its interim report, Nokia writes that the company is on its way to achieving its goal of 40 percent market share in mobile phones. As for 3G, Nokia CEO Jorma Ollila says that test shipments of WCDMA are scheduled for June of this year, with commercial volume deliveries starting in October, according to plan.

LUCENT: Lucent reported a net loss of USD 3.7 billion for the second quarter of the split fiscal year. Sales fell by 18 percent to USD 5.9 billion.

In the year-earlier period, Lucent reported sales of USD 7.2 billion and a profit of USD 755 million. Approximately half of the reported loss is attributable to the divestment of the components manufacturer Agere and bad loans made to the US operator Winstar, which recently applied for reorganization. Earnings were less than the market had anticipated, but, despite this, the share price rose, which was interpreted as a sign that the market is satisfied with the action program implemented by Lucent's management. This includes the lay-off of 16,000 employees or 15 percent of the total number of employees. Lucent anticipates a turnaround during the coming quarter.

ALCATEL: Alcatel's profit for the first quarter increased to slightly more than USD 100 million, or 4 percent higher than the year-earlier

period. Sales grew by 21 percent to USD 6.8 billion. Earnings corresponded to market expectations. However, the management of the French telecom giant has reduced its sales forecast for 2001 and anticipates sales growth of between 5 and 15 percent. Alcatel plans to outsource the manufacture of GSM telephones as part of an USD 1 billion savings package.

NORTEL: Nortel reported a first quarter loss of USD 385 million compared with profits of 347 million for the year-earlier period. Sales fell slightly to USD 6.1 billion, compared with USD 6.3 billion for the same quarter last year. Nortel did not issue a forecast for 2001 in its quarterly report due to the uncertain economic situation. Personnel reductions totaling 20,000 employees will, however, result in annual cost savings of USD 2 billion.

Telecom downturn reaches Europe

On a worldwide basis, the total number of jobs within the telecom sector has fallen by 100,000 in just ten weeks. It is now clear that the telecom downturn has reached Europe, according to the international press, following Ericsson's first quarter report.

News of Ericsson's cutbacks are merely the latest in a long series of similarly gloomy news reports in recent weeks. Industry competitors Siemens, Alcatel and Marconi have all recently been forced to take

action following a weakening inflow of orders. But it was when Ericsson's quarterly report was released that it became clear that the telecom crisis has reached Europe, according to the UK's Financial Times. The company's cutbacks are along similar lines to those being implemented at US giants such as Cisco, Nortel and Lucent.

Nokia, which presented its earnings report on the same day as Ericsson, is now the sole shining star in an otherwise dark telecom sky. Nokia is the only global mobile phone manufacturer that is cur-

rently operating with good profitability, writes the Financial Times. The company is also maintaining its positive forecast for growth in sales of between 25-35 percent next year, despite the uncertainty in the market.

Fortunately, not everything being written about Ericsson is negative. The company's collaboration with Sony has been highlighted as a positive step which could result in a turnaround. While the Wall Street Journal Europe writes that it is far from certain that this collaboration will be the salvation of either company's

mobile phone sector, the Financial Times is much more positive.

According to that paper, this move will solve two problems. Firstly, there is no conflict of interest between the two companies since they are focused on completely different markets. Secondly, this will allow Ericsson to keep its foot in the door of the terminal market which, despite everything, remains an important aspect of network sales.

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3G delayed in Japan

» The Japanese operator NTT DoCoMo has postponed its launch of 3G until October.

DoCoMo has been determined to open its commercial 3G network on a limited scale on May 30. However, due to software problems, the operator has been forced to delay the launch by four months. DoCoMo's competitor, J-phone, has also postponed its 3G introduction until the first half of 2002.

The first commercial 3G network in the world will be opened on the Isle of Man, in the UK, by Manx Telecom, which is owned by British Telecom (BT). The network will be launched on May 30 and will consist of 10 base stations and 200 terminals from Japan's NEC.

Police use SMS to track thieves

» Dutch police have resorted to an unusual step in solving mobile phone thefts. When a mobile phone is reported stolen, the police repeatedly send SMS messages to the stolen phone reading, "This telephone is stolen. It is illegal to purchase or sell it. The Police."

Since the police use the IMEI number, which is unique to each telephone, it is impossible to defeat this technique by switching SIM cards, according to Ekonomi 24. The campaign has been dubbed "You are spammed for life."

Singapore foregoes 3G auction

» Three licenses for a third-generation network were issued in Singapore at the beginning of April.

Initially, plans called for an auction to determine who would be awarded the licenses, but when the only foreign company withdrew - Hong Kong-based Sunday Communications - only three local companies remained.

The three are MobileOne (Asia), Singapore Telecom Mobile and StarHub Mobile. The price for each license is USD 55 million, according to the Infocomm Development Authority of Singapore (IDA).

Juniper defies market trend

» One of Cisco's fiercest competitors, router manufacturer Juniper, succeeded in meeting market expectations for the first quarter.

Although the Silicon Valley-based company lowered its profit margin for the full year, Juniper continues to capture market share from Cisco in the high-performance Internet traffic (IP) routers segment. According to the C-Net news service, Cisco CEO Scott Kriens has plans to hire new employees, in direct contrast to other players in the industry.

Phoenix-like return of Iridium

» After having been declared dead several times, the Iridium project - which offers global mobile telephony via a network of satellites - has once again been given new life. The new owners of the bankrupt company announced in April that Iridium is once again operational and that satellite phones are available for purchase.

Ericsson has had operations in Spain for a long time. Since 1922, in fact. With 350 million speakers, Spanish is one of the world's largest languages. Developing applications in Spanish is therefore an interesting task, since they can be used in so many countries. GPRS will be started up this year and it is important to be able to offer high-quality applications.

Spanish move to 3G

► "Consolidation of our operations, increasing our expertise and profiting from TTC Global. Those are three tasks that will be important for us over the next two years. You could say that we're in training to become winners in 2003," says Ingemar Naeve, President of Ericsson in Spain.

The address is Calle Retama, Madrid, and is not difficult to find - the building is visible from quite a distance. It was here, to this towering glass building with the name Torre Suecia - the Swedish Tower - that Ericsson moved five years ago. The company has, however, been in operation in Spain since 1922.

"Our operations today consist primarily of mobile telephony infrastructure and terminals, whereas fixed telephony accounts for just 15 percent. Ten years ago, the situation was just the opposite. At that time, fixed telephony accounted for 85 percent and there was significant production of AXE equipment here in Spain, but that has now been outsourced," explains Ingemar Naeve.

Naeve has only been President of Ericsson in Spain since the beginning of 2000. He is no stranger to Spain, however. With the exception of a stint in Sweden for about a year, he has worked for Ericsson in Spain since 1982.

Although AXE production has now been outsourced, the number of employees has remained constant. This is due to the fact that employees with different kinds of expertise are being recruited.

"We don't have plans to grow, but rather to make our operation more efficient and to increase employee expertise, which should be accomplished without incurring major expenses. The training that has priority pertains to UMTS, GPRS and datacom," says Ingemar Naeve.



Ingemar Naeve

Pressure easing

GPRS is going to start up this year, and it's important to be able to offer efficient applications since that is what will promote GPRS growth.

Ingemar Naeve contends that applications and terminals should be linked closer together within Ericsson. He emphasizes the importance of a successful GPRS effort, since that will relieve the existing pressure to quickly implement 3G.

Four UMTS licenses were issued in Spain in spring 2000. In the autumn, Ericsson was chosen to be the supplier for two of the operators, Telefónica Móviles and Xfera. The latter is a new Spanish operator, whereas Telefónica Móviles is Spain's largest mobile phone operator with over twelve million subscribers. The company, which markets its GSM network under the Telefónica MoviStar name, is a major client of Ericsson.

Recently, Amena also chose Ericsson as one of the suppliers for its UMTS network. Amena is now Ericsson's largest GSM customer in Spain and, as the third-largest operator, has a market share of 16 percent.

Airtel, which also acquired a UMTS license, has selected Nortel to be its supplier for the first phase of its 3G network.

"But we're involved in the bidding work for phase two. Our goal is to deliver to all four operators," says Ingemar Naeve.

"The first contracts demonstrate that you are in the game. However, it will only be after two or three years that we'll see who will win the 3G competition.

"It's like a 1,000-meter race, with the initial contracts the equivalent of having run halfway," says Ingemar Naeve. This is a fitting comparison from a man who has himself been an athlete and runner.

Annual fee

Once the UMTS licenses were issued in Spain, the authorities submitted a proposal that every licensee pay an annual fee of USD 130 million over the next 20 years, which has made operators cautious.

Ericsson Innova is a newly formed multimedia company in Barcelona that will be involved in developing 3G applications. With 350 million Spanish speakers, Spanish is one of the world's largest languages.

Developing applications for this language is an interesting task since they can be used in so many different countries.

"Good applications will stimulate the 3G market, which is why this development is so important," emphasizes Ingemar Naeve.

Ericsson in Spain has also signed a Memorandum of Understanding with Telefónica to create a jointly held company for application development.

For the past year, a 3G test center has been operating at Ericsson in Madrid, attracting over a thousand visitors to date. Ericsson is also represented in several Spanish reference groups within the telecom industry. Its strong position in the market, combined with good customer contacts, is providing a favorable base for the future of 3G.

FACTS/ERICSSON IN SPAIN

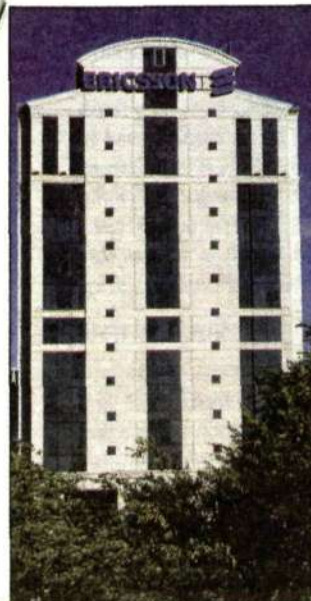
Ericsson has been in operation in Spain since 1922. Currently, in addition to its headquarters in Madrid, Ericsson operates regional offices in Barcelona, Seville and Valencia. In Bilbao, there is also manufacturing of terminals. Altogether, Ericsson has some 3,400 employees in Spain.

The country has four mobile phone operators with a total of 24.5 million subscribers, corresponding to a penetration rate of 60 percent. Prepaid calling has also been a major success, accounting for 80-90 percent of all new subscriptions.



"The reason why Ericsson's phones are selling so well in Spain is partly to do with good collaboration with the operators," says Raul Ortiz, head of consumer products at Ericsson in Spain.

Photo: Fernando Moreno



Gunilla Tamm
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Telefónica sails out into the world

Telefónica is one of Ericsson's largest customers. The company has as many as 15 key account managers for Telefónica. "It's important that Ericsson keeps pace with Telefónica's global development," says Jerónimo de Ugarte, Global Account Executive and Ericsson's highest key account manager for Telefónica.

► Telefónica, one of the world's largest telephone companies, has undergone major changes in recent years, becoming increasingly global. Currently, it has operations in 41 countries and, in recent years, Telefónica has developed into the leading telecom operator in the Spanish- and Portuguese-speaking parts of the world, which is a market of some 550 million people. Moreover, the company has a strong position in Europe and even has a foothold in Africa.

"Telefónica's strategy is to be a strong UMTS player in Europe. To date, the company has acquired UMTS licenses in Spain, Germany, Italy, Austria and Switzerland," says Jerónimo de Ugarte.

Now, Telefónica is discussing with other local mobile operators that are already established in European countries about how to share UMTS infrastructures in order to overcome the huge investments needed to create this new mobile network. Furthermore, Tele-



Jerónimo de Ugarte

fónica is planning to reach agreements to participate in the GPRS deployment of the operators aiming to create, as fast as possible, a customer base for the 3G network. The decision by AT&T in the US to adopt GSM and GPRS as the route to 3G, is having a major impact on Latin America. In the middle of 2000, Telefónica increased its ownership of operators in Brazil, Argentina and Peru. The company also has major interests in Mexico.

Jerónimo de Ugarte believes that there is a bright future ahead for Telefónica and sees the company as an important global player, both in terms of wireline and wireless telephony. The target for Telefónica is to become the fifth global operator in wireless communications.

"Now that Telefónica has become increasingly global, it's very important for us to keep up with developments," he emphasizes.

As an example, he mentions global pricing, where there is already a global supply agreement for switches and transmissions for wireline telephony.

When it comes to wireline telephony, Telefónica has a program to determine how much equipment should be ordered from Ericsson annually, based on how many lines are to be installed.

The fact that Telefónica is a major client becomes clear when Jerónimo de Ugarte explains that there are 15 key account managers for Telefónica at Ericsson.

"In theory, it's not difficult to understand how important relations with Telefónica are, but when it comes to the practical work, that understanding does not always exist. There is room for improvement in that regard," concludes Jerónimo de Ugarte.

Gunilla Tamm

Cooperation significant for telephones

"This is a really big seller," says Jose González Lagos, holding up Ericsson's T10. RadioPhone, the retailer chain where he is president, is one of the largest in Madrid. It is not unusual for an Ericsson phone to be a best seller. Ericsson is the second largest manufacturer in the Spanish market, commanding a 20 percent share in 2000.

► Ericsson began selling GSM phones in Spain in 1992. At the time, telephone operator Telefónica was its only customer. In the mid 1990s, a second client, Airtel, was added.

"We sold 1.8 million phones in 1998, 2.4 million the next year and the year after that we reached 3.6 million," says Raul Ortiz, head of the consumer products division at Ericsson in Spain.

The image of Nokia being the largest player in mobile phones does not hold true in Spain. Last year, Alcatel was the market leader there, with a 21-percent share, while Ericsson was number two with 20 percent and Nokia came in third at 14 percent. Motorola, which used to be in a leading position, has lost market share.

"Operators have major influence on the market, which is why it is so important to collaborate with them in an appropriate manner and a timely fashion. Listening to them and keeping one's promises is absolutely essential," emphasizes Raul Ortiz, adding that it is also important to have the right pricing policies. "When launching new models, it's essential to provide retailers with such a well-adjusted price that you don't leave room for competitors to jump in."



Jose González Lagos is President of RadioPhone, which sells mobile phones and has among its operations eight retail sales locations in Madrid.

"The reason why Ericsson's mobile phones are selling so well in Spain is partly to do with good collaboration with the operators, but also the fact that Ericsson's salespeople are extremely ambitious and have the appropriate experience from among other areas, consumer marketing," says Raul Ortiz.

A good example is Daniel Hernández, who is a seller. Before coming to Ericsson, he worked in sporting goods.

"I was a purchaser for things like tennis and golf equipment. When I started at Ericsson, I switched to the other side, so I know how they think in the purchasing area. That's been very beneficial to me in my contacts with our customer's buyers," he says.

The Ericsson Club was created last spring in order to encourage retailer loyalty. Points are earned for every phone sold, and once a certain number of phones have been sold, various premi-

ums can be redeemed. Every Ericsson mobile phone has an ID number, making it easy to keep track of sales. The Ericsson Club has approximately 2,000 members spread among 800 retailers.

"This gives us a certain amount of leverage over sales. If, for example, we have a particular phone model that we want to roll out, that model can be assigned more points over a certain period of time," says Raul Ortiz.

Since all information pertaining to Ericsson Club is collected in a database, valuable statistics can be generated, creating a good picture of the market and the kinds of changes that are occurring. An Ericsson Club, similar to the one in Spain, also exists in Greece.

"We sell all major brands, and sometimes also sell phones from smaller Asian manufacturers," says Jose González Lagos at RadioPhone. The company has eight stores in Madrid, as well as retail outlets in Barcelona, the Canary Islands and Majorca. RadioPhone issues a new product catalog every three months.

Business sales account for the largest portion of earnings, with Ericsson's T10 being a very popular model. Trendy colors aside, many construction companies request the T10 in gray or brown. The T28 is another good seller. When it comes to GPRS phones, Jose González Lagos is somewhat skeptical. He believes that it will take time before there is significant demand for them.

"It all depends on how many applications there are. Applications with high-quality content are the key to the success of GPRS," emphasizes Raul Ortiz.

"Subscribers have to think that it is worth acquiring a phone for something other than just voice calls. GPRS is a thermometer for the future and will lay the groundwork for 3G," he says.

Gunilla Tamm



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ERICSSON 



Have you ever got lost trying to locate a new house? If so, a new positioning tool can help you out. Ericsson and Telia have jointly developed Team Positioning, which will direct lost people to their destination – regardless of whether they are looking at houses or trying to find the nearest drugstore.

Photo: Action Press/Scanpix

Let the mobile phone find your dream house

Positioning, knowing exactly where a mobile phone user is located, is predicted to become one of the most important services on the mobile Internet. Team Positioning – a close collaboration between Ericsson and Telia – is a leader in the field and will be launching a host of new services this spring.

► Demand for location-based mobile phone services is anticipated to increase rapidly from now on. Independent analyses indicate that the positioning services market could be worth as much as USD 70 billion over the next five years. In Sweden, that figure is expected to amount to USD 250 million.

Last autumn, Sweden's largest operator Telia and Ericsson formed a joint group, Team Positioning, in order to accelerate the development of new services. It has been possible since last summer to find drugstores, restaurants and other businesses through the Yellow Pages Close to You service. Another positioning service is also available for boats. Starting this spring, a host of new services will be launched.

Map in phone

One of the services is called Houses Close to You. It is linked to a real estate database and helps prospective homebuyers locate potentially suitable houses in the locality. Yet another service indicates the prices that people have paid for houses in the area.

In addition to these services, a WAP mapping service is also being launched. Locator services can link to maps to help users find

restaurants, houses for sale or other objects that they are looking for. The service requires a large screen; currently only Ericsson's R380 model can handle the requirements.

The company is also marketing its positioning services to companies, which are thought to be an important market. The Resources Close to You service has been developed in conjunction with Saab Tech Systems and helps transport companies keep track of their vehicles. The system can detect where GSM phones are located and companies can view their positions via a Web-based map. It is also possible to communicate directly with drivers from the company's home base via SMS.

This solution is also significantly cheaper than systems using the satellite-based Global Positioning System (GPS). Estonia is virtually

the only country outside Sweden to have implemented positioning technology. There, it is used by the emergency call system (112) to determine where callers are calling from. A similar emergency assistance system will also be implemented in the US and discussions are currently under way within the EU as well.

Yet another possibility is to connect emergency services such as police, fire and ambulance. By equipping every police officer with a GSM phone, it will be possible to determine, from a central command center, which officer is located closest to an accident or crime scene.

Accuracy improving

Currently, accuracy in Sweden averages 150 meters. Within a year, however, that will improve significantly. Current systems are de-

signed with the assumption that all intelligence is supplied from within the network. Consequently, no special phones or SIM cards are required.

In the next generation, mobile networks will be combined with GPS to determine positions to within a couple of meters. This will also require built-in GPS receivers in telephones.

The disadvantage of using GPS is that it is based on satellite signals, which can only be received outdoors. Consequently, the next step will be to further refine the existing mobile phone network, in order to reduce the margin of error for positioning to around 60 meters. That version is expected to launch next year.

Lars-Magnus Kihlström

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Successful test project gives results

Team Positioning is a test project in which Ericsson is collaborating very closely with the operator Telia.

For Ericsson, this collaboration involves a new and more profitable way of working, close to both customers and the market.

► Team Positioning is an unusually close partnership between Ericsson and the operator Telia, in which both parties are sharing the expenses and revenues.

Currently, 35 people at Ericsson and Telia are working together in Telia's facilities at Nacka Strand in Stockholm. Lars Hallström, of

Ericsson, and Jörgen Jonsson, of Telia, form the leadership duo. In addition, there is a steering group consisting of representatives of both companies.

"There is a fundamental belief that through close collaboration, we will be able to quickly get products out into the market. We contribute the technology and our expertise, while Telia has the network," says Lars Hallström.

Jörgen Jonsson agrees that speed is important.

"We were the first to offer commercial testing when we launched the Yellow Pages Close to You service last summer, but that is unim-

portant over the long term. We know that developments will move quickly. Now we want to get roaming functions in place so that users can take the service with them when traveling abroad," he says.

The project will initially last five years.

"There are several advantages for Ericsson in this collaboration. For example, we'll get a much better understanding of how customers operate," says Lars Hallström.

Ericsson is also in discussions with other operators in other countries about partnerships.

"Personally, I'm convinced that this will be a new way for Ericsson to conduct business," says Lars Hallström.

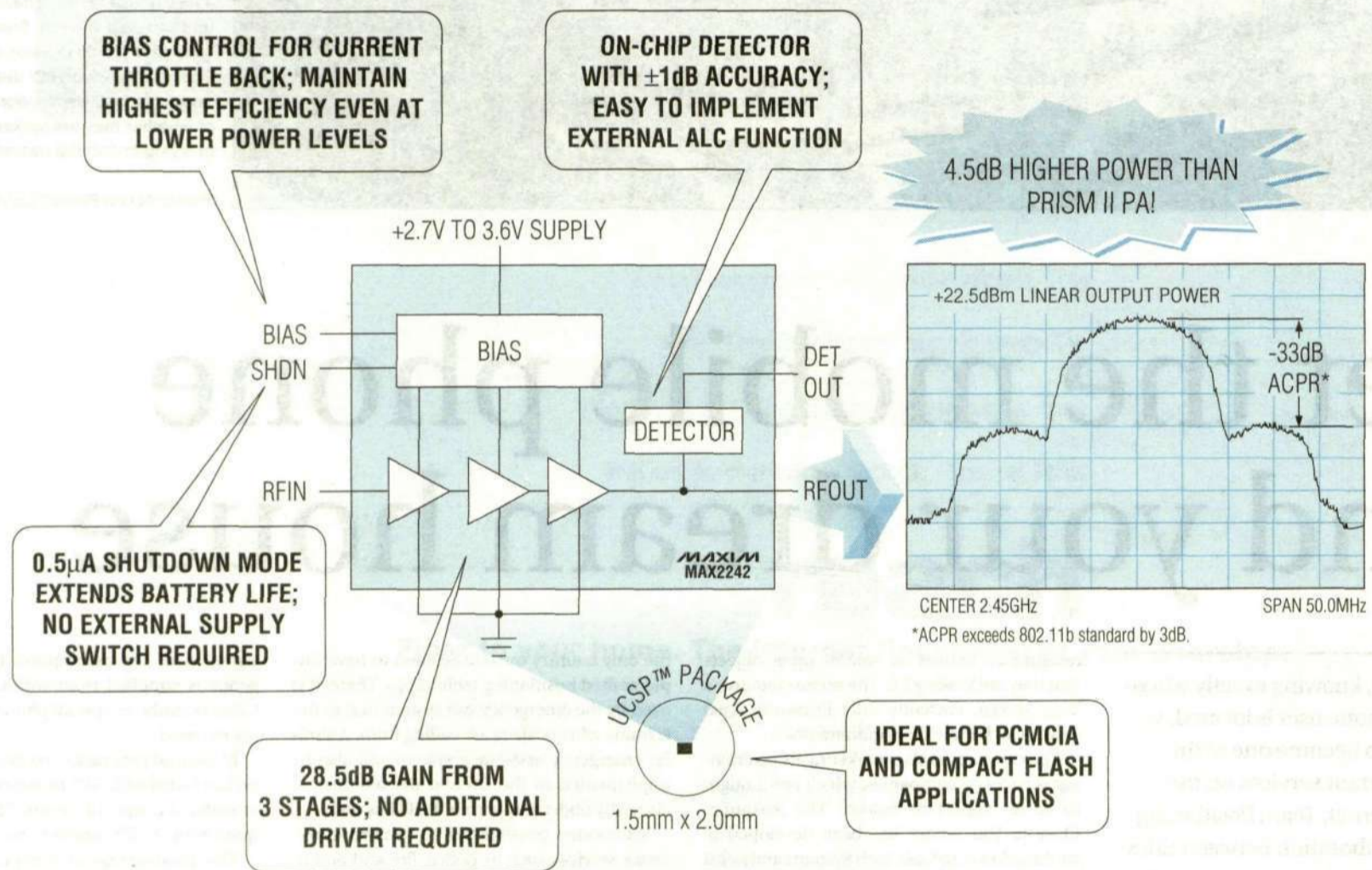


Lars Hallström

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It's good to be first in the market with a new invention, but it is by no means enough. It is just as important to be quick to protect an invention by applying for a patent. Patent operations at Ericsson have become increasingly important and about 1,200 patent applications are submitted each year.

Patents provide freedom in the market

► In 2000, patent operations were reorganized. Out of the previous organization by business unit, eight patent areas were created. These are controlled by the business organization, but have areas of responsibility that are defined according to technology field. This provides better continuity and patent activities do not have to be changed every time Ericsson reorganizes its business and product structure. A patent usually transcends business unit boundaries and it is also valid over a long period, ten years or more.

Today, there are eight patent units: Radio Access, Core Networks, Consumer Products, Internet Applications and Solutions, Service and Backbone Networks, Microelectronics, West (which includes defense operations) and Research.

Increasing number of applications

"This year, we will submit 600 patent applications for Core Networks' operations, which is approximately half of the total number of patent applications submitted by Ericsson," says Gabriele Mohsler, who works at Ericsson Eurolab in the German city of Aachen and is responsible for Core Networks' patents unit.

She is a patent attorney and has worked with patents for ten years, the past four and a half at Ericsson. A patent attorney often has technical training, complemented by legal studies. At Ericsson, there are about 150 persons working on patents and the number of patent applications from Ericsson has grown substantially in the past ten years, from some 60 in 1990 to between 1,200 and 1,300 this year.

"There are three main areas in which to apply for patents. There are patents related to standardization, products and the future," continues Gabriele Mohsler.

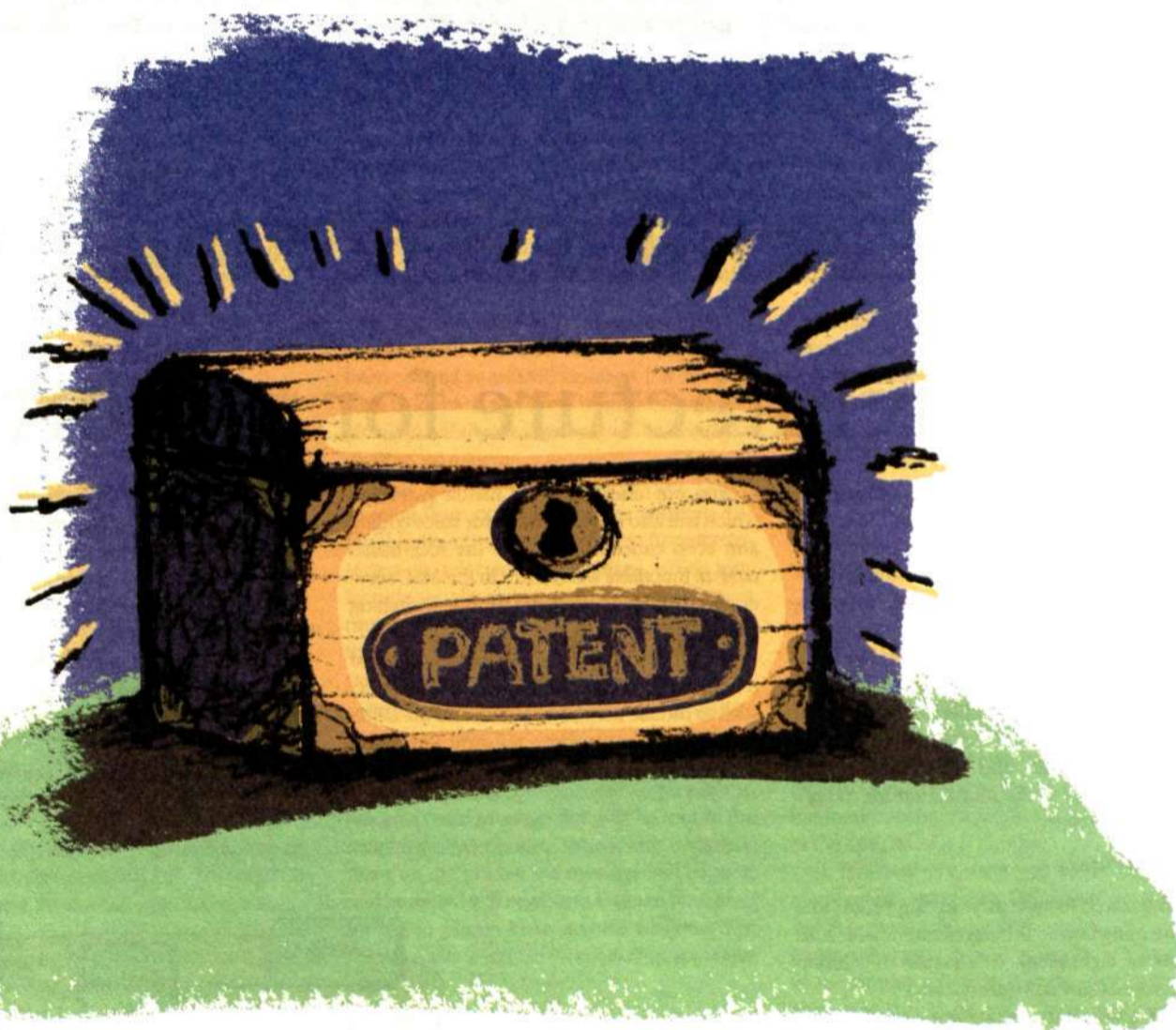
"Patents give us freedom in the marketplace and make our products less expensive. Patents protect the results that are the fruit of our research and development."

"With the current process of convergence in telecom and datacom, it is even more important to submit patent applications at an early stage," she says.

Patents involve very large sums of money, so it is vital to have the right patents. Being first to have a patent within a new standard means that competitors must pay for a license allowing



Gabriele Mohsler



Being first to have a patent, especially within a new standard, involve large sums of money. Competitors must pay for a license allowing them to use the patent.

Illustration: Ebba Strid Udikas

them to use the patent. It is also crucial to avoid patent infringement. This was a lesson that many companies, including Ericsson, learned at the end of the 1980s when Motorola earned large sums of money from its GSM-related patents and the license fees that its competitors had to pay. However, Ericsson is in a favorable position for the standard related to UMTS.

Patents throughout the world

Ericsson has patents in more than 120 countries throughout the world. The US, China and the countries of Europe are among the places where the company has a large number of patents.

In certain countries in South America, a patent is required before local production is permitted.

To be able to apply for a patent, a product or idea must be new. A patent is valid for 20 years.

Ericsson has a portfolio of approximately 10,000 patents and this portfolio must be maintained. Earning money by selling patents has become much more common and more important than it was a few years ago.

"For people who work in research and development, it should be a part of their everyday work to think about the ideas and products for which patents can be sought. Often it is apparently small improvements to our current systems and products that can become valuable patents."

Gunilla Tamm

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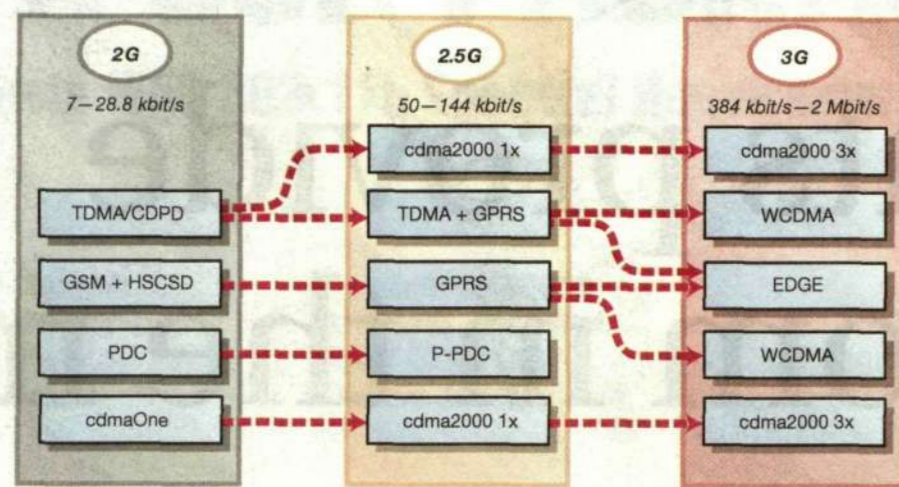
This is the third article about Ericsson's role in the development of mobile telephony. This installment describes third-generation (3G) systems, which will mean a greater revolution in technology than when GSM was introduced.

Third generation a giant leap

The first-generation systems for mobile telephony – NMT, AMPS and TACS – were analog. The second-generation systems, which were launched in the early 1990s, were digital and included GSM in Europe, D-AMPS (subsequently TDMA) in the US and PDC in Japan. PDC was based on TDMA and is the world's second largest digital cellular standard. GSM is the leading global standard, both in terms of the number of subscribers and the geographical area served. Third-generation mobile telephony is now being introduced.

The transition from second to third-generation mobile telephony is motivated by the rapidly growing need for bandwidth for non-voice services, such as e-mail, multimedia and Internet. The terminals now being developed will be able to handle data services either directly or via a connection to a portable computer.

An important difference between second and third-generation mobile telephony is that third-generation systems are optimized for packet switching, which is less expensive than circuit-switched transmission. This change is necessary because IP (Internet Protocol) will undoubtedly be the transmission technology of the future even for mobile telephony. Packet-switched In-



The transition from the second to the third generation is motivated by the rapidly increasing demand for bandwidth for non-voice services, such as e-mail, multimedia and Internet.

Illustration: Claes-Göran Andersson

ternet traffic needs only one tenth of the bandwidth that the same traffic would require in a conventional circuit-switched network.

The transition to the third generation will depend on the frequency bands for which operators are licensed. The alternatives are:

- refinement of current systems on existing frequency bands, or
- new technology (WCDMA) on a new frequency band.

Thanks to the continuous development of GSM, operators are able to increase data trans-

mission speeds in their 2G networks operating on existing frequency bands.

During 1998, a circuit-switched technology called HSCSD (High-Speed Circuit-Switched Data) was launched to provide higher data speeds in GSM systems. The technology is based on using several time slots for a single connection, thus allowing capacity to be expanded to 57 kbit/s.

The next step in the development of GSM is the packet-switched General Packet Radio Service (GPRS). With this technology, which was introduced in 1999, operators can offer packet-switched data transmission using the bandwidth currently available in GSM. GPRS employs built-in routers that were developed by Ericsson and which are now doubling the theoretical maximum speed to 115 kbit/s. GPRS is a major step toward the development of third-generation mobile telephony and multiservice networks.

EDGE (Enhanced Data rate for Global Evolution) is a 3G technology for packet-switched data on existing GSM and TDMA frequencies. With this technology, which supplements GPRS, the system selects the optimal modulation and coding methods for the prevailing radio conditions. With the best modulation method, EDGE can

New architecture for tomorrow's networks

Ericsson has developed a new horizontal architecture for mobile systems that will allow operators and service providers to make a smooth transition to third-generation wide-band systems. This architecture allows operators to handle circuit-switched traffic in a transport network designed for packet data. Operators will be able to leverage their installed base of GSM hardware and software and to migrate to 3G via an upgrade. Ericsson's solution leverages and re-uses the AXE technology that is the foundation for today's mobile systems.

Revolutionary

The new architecture plays an important role in the transition to third-generation which, in terms of technology, is a greater revolution than when GSM was introduced.

The application and service layer contains user applications. These can be made available via the Internet on special network servers.

The control layer contains functions for managing, controlling and monitoring the network and for administering subscriptions, meaning that it provides everything required for establishing connections for voice and data communications.

The connection and transport layer corresponds to the central transport or backbone network. Put simply, this is the physical channel for communication and information.

By making a logical distinction between a server portion, which is responsible for services and which controls traffic in the network, and media gateways that are responsible for transport, separate control and transport layers are created. The switching function is

broken out and placed in media gateways, which will also be responsible for voice coding and echo cancellation, while the AXE-based control functions will remain in the MSC server, which derives from the Mobile Switching Center.

The transport layer consists of switches and routers that can handle different types of traffic, such as mobile telephony (voice) and the GPRS packet-data service. Once a logical separation has been established, the operator can change

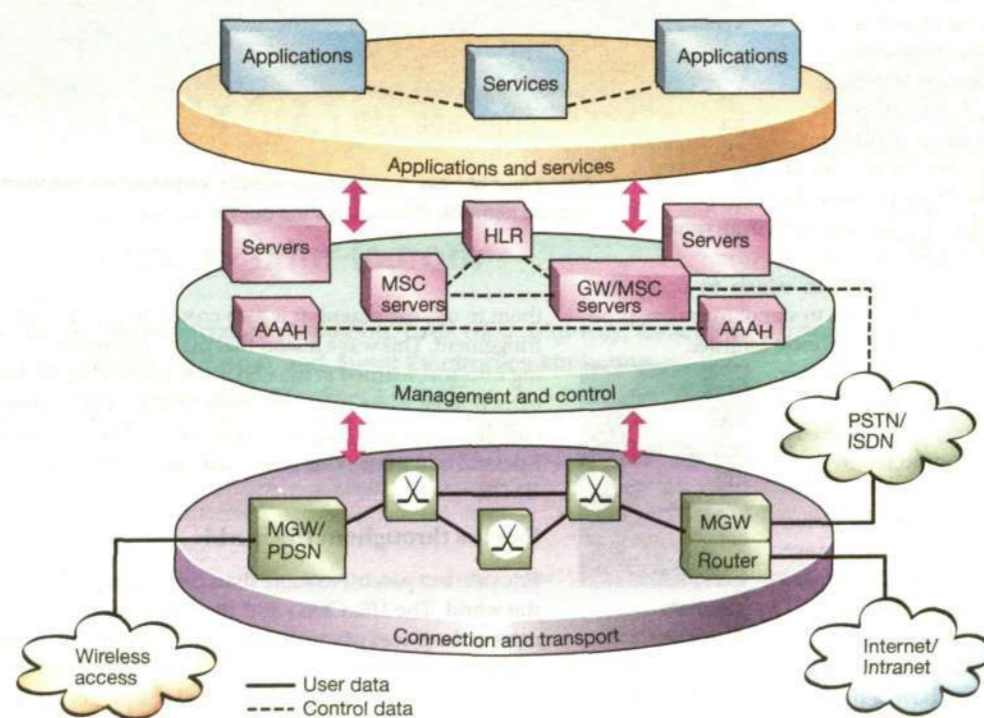
the technology for the transport layer, for example from today's STM (Synchronous Transfer Mode) to ATM (Asynchronous Transport Mode) or IP by modifying the control layer.

The GPRS packet-data service that is now being introduced in GSM networks will also permit migration to 3G. A GPRS server (SGSN, Serving GPRS Support Node) works in parallel with, and in the same manner as the MSC server.

Media gateways are the key to the new

architecture. They are located at the edge of the backbone network and can be likened to traffic interchanges between the backbone and access networks and between the backbone network and the servers on the control layer. Media gateways are future-proof, because they can handle both circuit- and packet-switched traffic.

Media gateways in the 3G network are built on the Cello Packet Platform (CPP), which is one of the cornerstones in the new networks.



— User data
--- Control data

leap

achieve speeds up to 384 kbit/s, which complies with the definition of 3G. EDGE is primarily intended for multimedia services.

Wireless access to Internet

WCDMA (Wideband Code Division Multiple Access) is a wideband (5 MHz) wireless technology for transmission between users and base stations in a cellular network. This makes it possible to transmit large data volumes cost-efficiently and to develop tomorrow's mobile communications in which mobile multimedia and wireless access to Internet services will be the primary applications. Although WCDMA is optimized for future requirements, the technology is being harmonized for today's users. In its development work, Ericsson has devoted special attention to providing a smooth migration from today's GSM systems. Transmission speeds will initially increase to 384 kbit/s throughout the coverage area, with up to 2 Mbit/s in local hot spots.

Nearly 85 percent of the world's digital cellular operators have chosen WCDMA.

Bertil Edin
freelance journalist



MMS, Multimedia Messaging Service, is an enhancement of the popular SMS service in which users can send short text messages between mobile phones. With MMS, it will also be possible to send moving images, digital sound, melodies and text.

Photo: Lars Åström

Multimedia will lift networks

Each month, more than ten billion SMS messages are sent in the world's cellular networks. With new enhancements for adding images and sound, the industry expects the service to increase in popularity.

At the GSM World Congress in Cannes in February, Ericsson and Nokia demonstrated together a new service that will provide a real boost for wireless networks. This service is called Multimedia Messaging Service (MMS) and is a refinement of the popular SMS service through which users can send short text messages between mobile phones. With MMS, it will also be possible to send moving images, digital sound, melodies and text. The next step will be to send short video clips and music.

"Messaging is currently the largest application after voice for mobile phones," notes Lars Novak, business development manager at Ericsson in Lund.

"SMS has become incredibly popular. Today, several operators make more money on SMS than conventional telephony."

Many users now want to be able to attach photographic images and sound to their messages and are thus eagerly awaiting MMS. The new multimedia service must be as easy to use as SMS, however, and should only consist of a few steps: selecting the telephone number to which the message will be sent, entering the message itself, attaching a digital image or sound, and sending the message.

"It really will be that simple," says Kristina Ahlgren, demonstrating the new T68 phone for which she is project manager.

MMS follows the SMS paradigm, meaning that the message is sent from person to person, rather than as an e-mail to a mailbox. An MMS message is thus sent to a special terminal with certain characteristics. If the recipient

does not have an MMS terminal, the message can be opened as SMS. However, once it has been opened as an SMS message, it is not possible to go back and open it again on an MMS terminal. MMS messages will not be saved in a mailbox on a server.

There are three main MMS services. One is sending from one telephone to another. Another is downloading new content from the Internet via selected push services, which may include your favorite team's latest goal, custom ring signals and new background images. The third service will be sending messages from a mobile terminal to an e-mail address.

It will be very easy to send a voice message. Today, users leave messages in a voice mailbox when they cannot reach the person they wish to call, but in the future, it will be possible to record a voice message that will be sent to the recipient's telephone. When the recipient turns on the phone, the message will be sent, and he or she will be able to listen to it without having to phone in to a voice mailbox. The message can even be forwarded to someone else.

Standard on all phones

MMS is designed for mobile devices and based on WAP technology that is independent of the type of network and therefore future-proof. The technology is now being standardized by the 3GPP body for third-generation mobile networks, and the industry expects that MMS will be a standard service on all future terminals.

"Ericsson has been one of the creators of MMS in the 3GPP standardization process, in which Magnus Svensson was Ericsson's primary spokesman," says Lars Novak.

An operator that wants to be able to offer MMS will probably already have a WAP gateway and will then only need to add an MMS server (MMSC), which is installed in the network. A couple of servers will be sufficient to serve all users.

Put simply, MMS packets are sent over WAP

as framed binary data. Each frame consists of several small and independent objects that can contain images, sound and text of varying sizes. The frame also has a header that specifies who sent the data packet and where it is going. The layout and presentation of messages is determined by SMIL, which is pronounced as "smile" and stands for Synchronized Multimedia Integration Language, which is an XML-based standard.

Two primary functions

"SMIL has two primary functions: showing where on the display an object should be presented and determining the timing for how objects appear and disappear, almost like a self-playing mobile PowerPoint presentation," explains Jörgen Birkler, the manager responsible for the technical implementation of MMS in the T68.

To facilitate use, there will be a number of ready-made templates for designing pages, but for users who wish to create their own pages, other options will be available. The size of the display allows just three objects to be presented simultaneously. These may include a text message, an image and sound on each page. A message may consist of several pages.

Pricing for MMS is being studied by a committee in which Ericsson and other leading suppliers are participants. The intention is that MMS should not cost much more than the current SMS service and that users will pay per message. Prepaid MMS will be an important service. It will be possible to use MMS in today's 2G or 2.5G (GPRS) systems, but with 3G networks, quality will improve and video streaming will be added.

"MMS is expected to be available on the market by the end of the year. Ericsson's forthcoming T68 with a color display will be the first MMS phone to be launched on the world market," concludes Lars Novak.

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Uniform training makes managers better

Managers at Ericsson need to become better informed about the company's goals and visions. At an Ericsson-wide leadership course, participants learn how to communicate in a clear, straightforward manner, so that they, in turn, can spread the word to their employees.

► Ericsson managers are not satisfactorily informed about the company's goals and visions, a fact that has become clear during internal manager-training programs. A companywide course for leaders is helping to change that, however.

Ericsson is implementing uniform leadership-training programs on a worldwide basis. For the past two years, it has been obligatory for managers and project leaders to complete the Leadership Core Curriculum (LCC) if they have not already attended a similar program. After completion of the course, they become Certified Ericsson Managers.

"The whole point of the course is to create a common language so that you have a good idea of what an Ericsson manager can do, regardless of where in the world he or she works," says Per Dalén, head of the Leadership Academy, which is responsible for Ericsson's leadership-training activities in Sweden.

Much to digest

A certified manager has, for example, learned how to form and lead teams, how to get employees to develop themselves and what is required to generate a creative working environment. A great deal of emphasis is placed on the ability to communicate in a clear, straightforward manner. Participants perform various group exercises and are given home assignments designed to improve their communication techniques, such as becoming good listeners and more aware of their own body language.

"Communication is the most important tool for good leadership available to a manager," says Per Dalén. "An underlying theme throughout the course is to help participants get to know themselves better, so that they can lead and inspire their employees more effectively."

Harry Roossien, Group Leader at the Testing & Certification unit in Emmen, northern Netherlands, recently completed his one-year LCC training. There was a great deal of information to digest, and he believes that the course had a major influence on him.

"Having your manager's support and interest is essential, if you're to be able to profit from such training. As a person, you also have to be open to criticism and be able to provide feedback to your classmates."

Ericsson's values, goals and visions are an integral part of this training. Discussions also focus on how managers can most effectively reach out with these messages in their everyday work.

"We've found that knowledge about Ericsson's goals and visions is actually quite poor internally," says Per Dalén. "We could do a much better job of spreading such information, and this is where management training programs can play a major role. Ultimately, I believe that this requires that senior executives become more visible within the organization, giving voice to our visions and strategies."

Better communications

Managers have become subject to increasing demands in recent years. There is a never-ending stream of information to incorporate and disseminate to employees. At the same time, many messages have to be sought out actively.

"There's a great deal of information available on the Web, but a lot of people simply don't find their way to it. One of my course participants said something very insightful: if Martin Luther King had merely posted his 'I have a dream' speech on the Web, we probably wouldn't even know who he was today. In our training programs, we place a strong emphasis on the importance of entering into a dialog with employees about important topics, rather than simply informing them."



Harry Roossien agrees that communications within the company need to be improved.

"The first time I heard about or discussed the company's vision was at the course. This information had not been withheld from me, but surfing the Web isn't exactly a top priority during my working day—especially if you don't always know what to look for."

A Certified Ericsson Manager has four different roles: business-oriented leader, innovator, developer of core competencies and relationship builder. At the same time, managers also need to be role models for the company's core values – professionalism, respect and perseverance.

"Our management programs have been significantly refined in recent years," says Per Dalén. "In the past, we were given one

An Ericsson manager has four different roles: developer of core competencies, business-oriented leader, innovator and relationship builder. A large part of the companywide training program for managers and project leaders deals with communications skills.

Illustration: Helena Halvarsson

week a year for training activities, now we have a whole year at our disposal. But most importantly, course participants now have the opportunity to implement their new skills once they are back in the office. Otherwise, it's easy to forget our classes when everyday work starts piling up."

Lena Widegren

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WHAT ARE THE CHARACTERISTICS OF GOOD MANAGERS? Survey: Ebba Gideon Sörman



Ranka Grubestic, Sagreb, Croatia

"Managers should be tolerant and open to new ideas. They must be good communicators and listen to their employees."



Okumura Koji, Yokohama, Japan

"They should have plenty of experience of the tasks involved, but most importantly they must be sensitive and listen to what their employees have to say."



Ola Olsson, Product handling, Stockholm

"They should be more of a manager than an engineer. It's also important that they take care of their employees and ensure that they receive the skills development they need."



Marianne Karlsson, Purchasing, Sundbyberg

"They make time for their coworkers and are attentive to the working atmosphere. They must be aware of what is going on."



Aida Cham, Receptionist, Stockholm

"A good leader should be fair and have the ability to listen to employees. They must show appreciation and sensitivity. When there are problems, they must get involved."



Rebecca Sanjuanello, Project Leader Administrator, Kista

"They must be good listeners and open to new suggestions. They should also be able to gauge the atmosphere among employees and listen to what they have to say."



Britta Ahlberg's department has the whole world as its workplace. However, many people were starting to feel burned out. Now they exercise twice a week during working hours and feel much better. A simple way of getting exercise is to leave your car at home and take the bus, train or subway to work, getting off a couple of stops early and walking the last bit.

Photo: Alexander Farnsworth



WRONG!

Using the elevator as a habit.



RIGHT!

Incorporating exercise into your workday, taking the stairs.

FACTS/POSITIVE EFFECTS OF EXERCISE

- Increased happiness
- Increased self-confidence
- More mentally alert
- Lower blood pressure
- Easier to fall asleep, calmer sleep
- Reduced risk of being overweight
- Lowers blood lipid levels
- Reduced risk of coronary or arterial disorders or diseases
- Increased stamina

Take a chance on exercise

Britta Ahlberg has a stressful job. Her entire department started exercising when many of them started feeling burned out.

"No matter how stressed you are with your job or family, it's incredibly rewarding to get out and move around," says Britta Ahlberg.

► Britta Ahlberg's department works with Event Marketing for mobile systems.

"We have very demanding deadlines, with the entire world as our workplace. We participate in trade shows and organize conferences, exhibitions and customer events."

She explains that many people within her department started feeling increasingly bad. They were on the verge of becoming burned out.

"It was mostly the pace of the job, but also the fact that many have families and all of the stress that involves with hurrying to collect or

drop off kids at daycare or school, as well as shopping, cooking, washing and cleaning."

Fortunately, Britta Ahlberg has a manager with foresight.

"He took the initiative to deal with the problem and now we have exercise sessions twice a week during working hours. Since many of the 34 employees are often away on business, not everyone participates at the same time. However, everyone who does thinks that it is the greatest.

"We've tried out various kinds of exercise, including water gymnastics, spinning, body-

pump and circuit training. Everyone who participates feels much better; they're happier and perform better in the jobs."

Health care consultant Agneta Skoglund-Fall has complete understanding for the fact that it can be difficult to find time to exercise. She explains, however, that exercise does not have to be a major undertaking. Rather, it should be about finding those everyday situations that can help you get at least a half hour of activity every day.

"You could, perhaps, get off the bus one stop early and walk the last bit," she suggests.

"These days, many employees do not get nearly enough activity. They sit at a desk all day. Ericsson offers good opportunities for exercise in many locations around the world. Chances are great, however, that only the people who are already active will take advantage of the opportunities. We also want to reach those people who don't get any activity at all," says Agneta Skoglund-Fall.

"Just a 30 minute walk or bicycle ride each day is enough to feel much better."

Britta Ahlberg and her colleagues feel that it is more efficient to have exercise incorporated into their work schedule.

"While I'm in the habit of frequenting an exercise center on my own, once it starts getting dark and cold outside, it becomes easier to just stay home."

Britta Ahlberg drives a car to work, but she has always enjoyed walking.

"I like to take long walks in the woods. Our children have left home and we've moved out closer to the coast. It's wonderful to be able to stroll along the sea as well. I end up sitting in front of the computer quite a bit. It's impossible to avoid. But during extremely stressful periods, I've at least always taken time to go for a walk," says Britta Ahlberg.

Cecilia Sandahl
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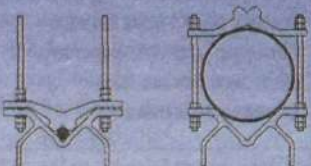
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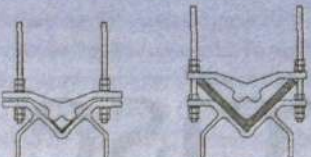
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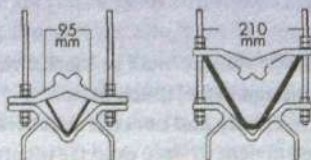
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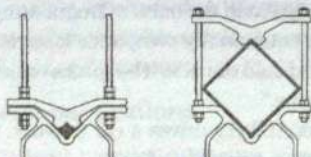
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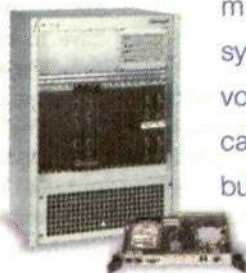


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Swiss rider Markus Fuchs is said to be the clown of Team Ericsson. But he was not clowning around when he took home the world championship in show jumping.

Photo: Roland Thunholm

Quick and flawless master

► "My best victory so far," says world cup winner and Ericsson rider, Markus Fuchs – who only a couple of years ago had virtually given up hope of ever winning a championship show jumping title. But that was before Team Ericsson. These days, nothing can stop the Swiss rider.

It was a fantastic world cup final at the Scandinavium in Gothenburg, Sweden. Following a shaky start, with the threat of cancellation hanging over the event due to foot and mouth disease and the potential absence of numerous

riders, the event ended up being an equestrian celebration with all of the world's elite riders on hand.

After two show jumping events held on Good Friday and the day before Easter, standings were very even among the top riders. Monday's championship included two rounds, with the possibility of a third in the event that several riders tied with the same number of errors.

After two rounds, the atmosphere at the arena was electric. Markus Fuchs and last year's world

cup winner, Rodrigo Pessoa, were tied with five errors each. Initially, Rodrigo Pessoa's horse made easy work out of the difficult course. But then he knocked down rails at the last and next to last obstacles. As a result, Markus Fuchs and Team Ericsson won their first world cup victory.

"I had essentially given up hope of ever winning a championship," says Markus Fuchs.

Susanne Stammering
freelance journalist



Hellström presents equality award

► Ericsson's equal opportunity award for 2000 went to Ericsson's Croatian subsidiary, Ericsson Nikola Tesla. Ericsson President and CEO Kurt Hellström was on hand to personally present the award to company Vice President Gordana Kovacevic.

Kurt Hellström and his colleagues from Ericsson in Sweden were met by the President of the local company, Åke Enell, as well as other company management officials.

The ceremony was also attended by representatives of the Croatian government. Kurt Hellström gave a speech and conveyed the award, a crystal vase designed by Swedish artist Ulrika Hydman-Vallien.

Ericsson Nikola Tesla won last year's equal opportunity award in fierce competition with several Ericsson companies in Europe.

Tonya Lilburn

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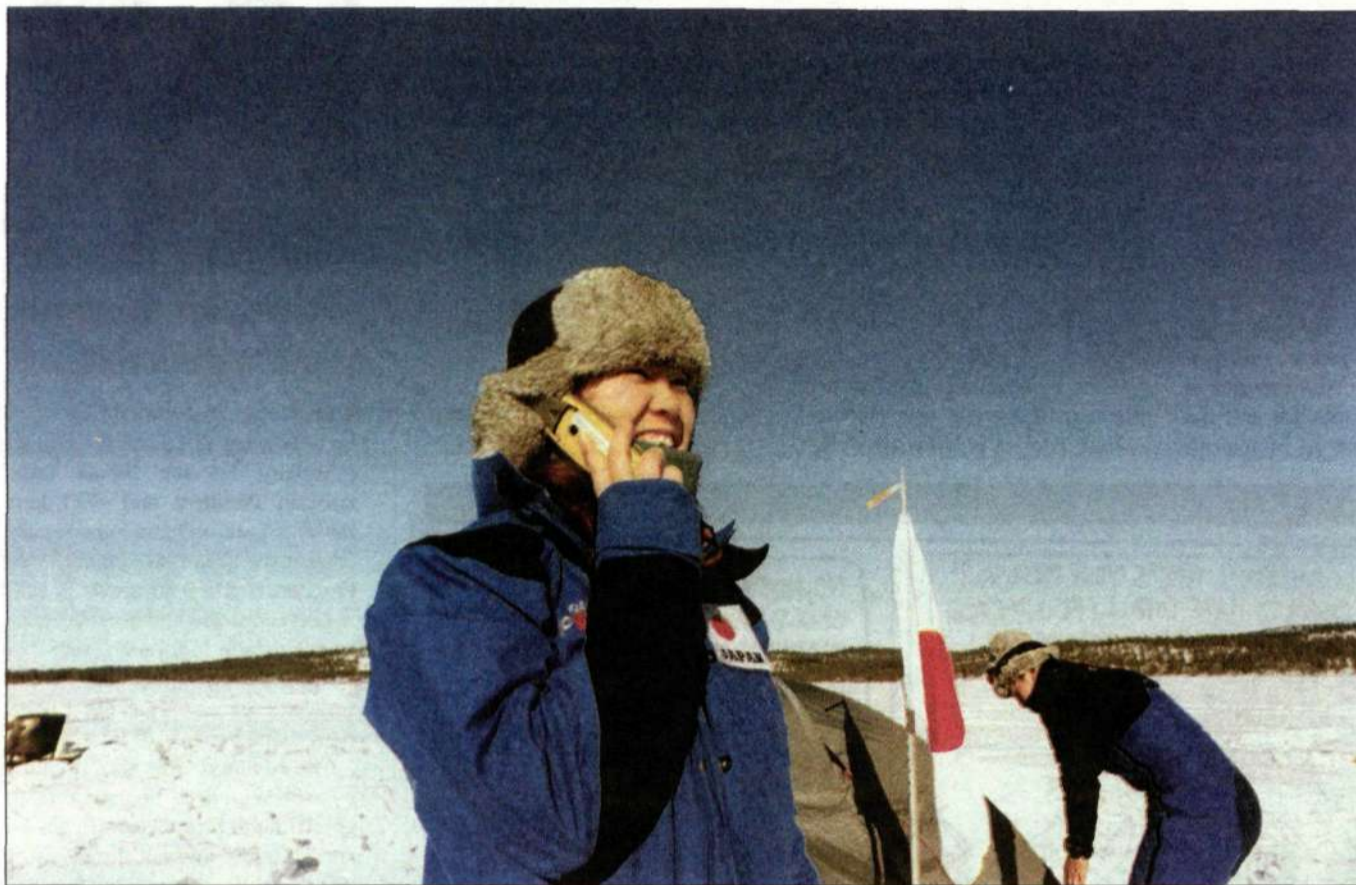
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The more than 300-kilometer-long Fjällräven Polar 2001 dogsled race was held recently. Starting in Tromsø, Norway, participants crossed the finishing line in Jukkasjärvi, Sweden. Ten two-man teams from nine different countries competed. A happy Tomoko Tanaka, of Japan, immediately called home to her mother in Osaka after winning the race. Photo: Lars Åström

Icy honeymoon ends in tears of joy

Newlyweds Kazuyuki Maruyama and Tomoko Tanaka of Japan put their marriage to the test and came away with a victory in the Fjällräven Polar 2001 dogsled race.

► Tears of joy ran down the cheeks of Kazuyuki and Tomoko as they crossed the finishing line in Jukkasjärvi, northern Sweden. After four days of harsh weather, during which they trekked more than 300 kilometers, wild wolves and frostbite became just a memory. With the sun shining from a clear blue sky, a joyous Tomoko called home to her mother in Osaka to relate the good news.

"Today was definitely the easiest day so far, and now everything feels just wonderful." Kazuyuki and Tomoko were married only

a couple days before the start of Polar 2001. The Japanese team kept their wedding secret from the race organizers right up until the last day. Once the news became known, however, competitors and spectators alike were eager to congratulate.

Challenging days

This year's race turned out to be one of the toughest ever. Snowstorms and nighttime temperatures as low as minus 30 degrees Celsius placed severe demands on the participants, who spent between six and eight hours a day on their sleds, and their nights in tents.

In order to ensure their safety, a team of doctors was on hand throughout the event, and every participant was equipped with an Ericsson R310 mobile phone for emergencies.

The phones were put to good use the very first day, when the Belgian team encountered difficulties.

"We received a phone call that the

woman in their team was experiencing severe pain in one of her hands. When doctors checked her condition, it became clear that parts of her hand were frostbitten," says Petter Karlsson, one of the race officials.

Thanks to quick medical treatment, the extent of her injuries could be limited. Nevertheless, the Belgian team was forced to withdraw from the race.

Howling wolves

The enduring memory that most participants will take away from this year's race is the fantastic scenery and close contact with the sled dogs. Even Sweden's wolves made their presence known from time to time.

"We never saw any wolves, although we heard how they howled at night when they were circling round the camp," says Kazuyuki Maruyama.

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FACTS/FJÄLLRÄVEN POLAR 2001

The dogsled race was organized by Swedish outdoor equipment manufacturer Fjällräven AB. After starting out from Tromsø, Norway, on April 4, the finishing line in Jukkasjärvi, Sweden was reached on April 8. Ten two-man teams from nine different countries participated. The event is limited strictly to "ordinary people" in good physical condition. There were some 3,000 applicants for this year's race.



UPCOMING

May 10: Ericsson is the principal sponsor of the Swedish EU Presidency Gala Concert in Brussels. Appearances will be made by Malena Ernman, mezzo-soprano, Peter Mattei, baritone, and The Real Group, jazz a cappella. The King and Queen of Sweden will attend.

May 10: 3G Tour TransContinental visits Zagreb in Croatia, and on May 17 the tour goes to Prague.

June 2: The annual family excursion to Kolmården Zoo. 5,000 tickets are available for sale.

☉ <http://sverige.ericsson.se/fun>

June 3-7: The SuperComm exhibition takes place in Atlanta, GA.

June 19-22: CommunicAsia in Singapore.

☉ <http://inside.ericsson.se/communicasia01/index.html>

UPDATES

Ericsson's resultat for the first quarter 2001 has been published.

☉ www.ericsson.com/investors/3month01.shtml

This year's Environmental Report has been published.

☉ <http://inside.ericsson.se/environment>

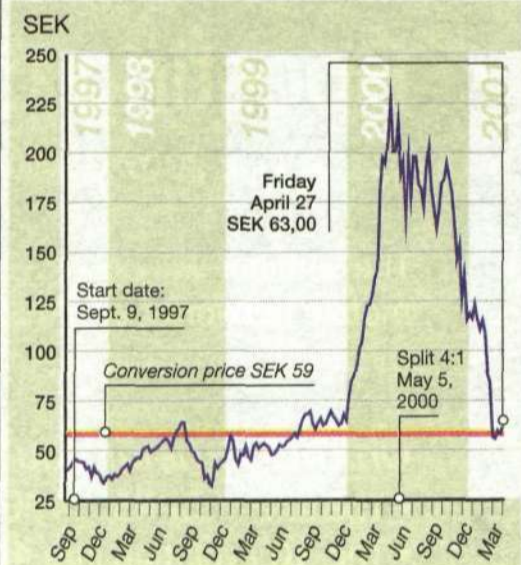
NEW ASSIGNMENTS

Johan Lallerstedt has been appointed President of Ericsson in Tunisia, effective May 1, 2001.

Sara Mazur has been appointed Director, Access Networks.

Michael Rasmussen, presently Financial Controller for Ericsson's activities in Poland, has been appointed President for the company in Poland, effective May 15, 2001.

THE ERICSSON B SHARE



An Extraordinary General Meeting of shareholders on September 9, 1997, approved a proposed convertible debenture program. The conversion period extends through May 30, 2003. For additional information, access the website: <http://inside.ericsson.se/convertibles>

