

Ethical standard set

A Code of Conduct has now been published on Ericsson's intranet. The framework of routines and procedures aims to ensure standards of social responsibility and ethics. **7**

Wireless students

The IT University in Gothenburg has invested in a WLAN from Ericsson. This is significant for both instruction and the students' social contacts. **17**



Recipe for double capacity

Adaptive antennas are an important feature of the GSM Capacity Booster technology solution. This is Ericsson's solution for overloaded GSM networks and an example of how the company is working to support operators. **20-21**

contact



49.40

Ericsson B share,
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■ NO. 18 • NOVEMBER 1 2001



At one of Ericsson's warehouses in Kista, north of Stockholm, inventory levels are going down. That's good news for cash flow and in turn for the third quarter financial report.

Photo: Ecke Küller

Efficiency program reduced Q3 losses

Lighter loads on Ericsson's inventory shelves have helped keep cash flow on the plus side for the second quarter in a row.

This and greater-than-expected savings from the Efficiency Program meant that the financial markets reacted positively to Ericsson's third

quarter financial report. Ericsson's President and CEO Kurt Hellström praises the entire organization for accomplishing a great deal in this "very difficult time of transformation, with the Efficiency Program and the restructuring."

Corporate, 4-5

New chairman to be appointed

Lars Ramquist has announced he will not seek re-election as chairman of Ericsson's Board of Directors. The nomination committee will propose Michael Treschow, the president and CEO of Swedish appliance company Electrolux, as replacement at the Annual General Meeting of Shareholders in March 2002.



Michael Treschow

Corporate, 5

Volunteer trades Kista for Pakistan

Ericsson Response is sending Jan Herremo to Pakistan to establish and secure telecommunications for the International Red Cross. Response has also donated 20 mobile phones to the Red Cross. But this is only the beginning.

"When the war is over, the real work will begin. What we are doing now is building up our preparedness for future humanitarian efforts," says Dag Nielsen, head of Ericsson Response.

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■ WORLD WATCH ■

The market for mobile games is expected to generate substantial revenues – in a few years. Until then, developers have to court operators and traditional gaming companies to survive, claims market analyst Nitesh Patel. But they also have to produce games that work with the technologies available today. **8-9**

■ FEATURE ■

"Innovative Pricing" is the title of Andreas Jonason's doctoral thesis. With this work on how operators can earn money on current and future telephony, he obtained his Ph.D. in record time. **19**





In some professions there has always been a need for renewed **knowledge** and continuous training. However, in today's fast changing markets and technology driven world, fierce competition **makes** almost all professions subject to this condition ... In this situation, it's our mission to bring outstanding know-how, new learning opportunities and networking to **all** Ericsson employees. Based on your professional role and **the** corporate strategies, we will act as your guide to knowledge, networking and learning – no **difference** where you are.

Ericsson University

Hectic times for new Operating Officer

For Ericsson's new Chief Operating Officer, these are busy times. Among other tasks, he is reviewing the company's product portfolio and research and development activities, as well as trying to foresee how the market will develop. At the moment, Per-Arne Sandström is satisfied that the new organization has been established so quickly.

► Per-Arne Sandström has been Ericsson's Chief Operating Officer since September 1. This means that he is responsible for Ericsson's Business and Core Units. Previously, he was head of market area North America.

"When I received the offer of this position, I thought about it for about thirty seconds. Ericsson has entered a tough but exciting period, and I definitely wanted to be involved in influencing the company's future," Per-Arne Sandström says, when *Contact* interviews him at Telefonplan, in Stockholm, where he has his new office.

Per-Arne Sandström is currently tackling many major issues. One of the most important is a review of Ericsson's product portfolio – he has to decide what systems and products Ericsson will offer in the foreseeable future. He is also driving the Concentration Strategy, a review of research and development operations and in which countries these should be conducted.

New structure to "settle"

Now, Per-Arne Sandström wants the new structure within the organization to "settle."

"We now have a product and market organization that is designed to handle continuous changes in the market and economic cycle. For example, we can now implement rapid alterations to the product portfolio and services, according to the market demands. The reasons for this include the fact that the Business Units are now responsible for conducting business operations, while

the Core Units oversee research and development.

"We have a very dedicated management team, who are committed to bringing Ericsson back to profitability, so that the company can be one of the first to emerge from the current market- and economic situation, in a stronger position," he assures.

He is encouraged about some changes already. "I am extremely satisfied that we were able to implement the reorganization so quickly. It's like pulling off a band-aid – the longer it takes, the more painful it is," he notes.

Mostly positive reactions

Per-Arne Sandström tries to talk to employees as often as he can, and believes that he has a rather good overview of reactions to the reorganization.

"Most of the comments I have received from the employees are positive. However, since we have undergone such a major change, including cutbacks in personnel, it is clear that there is still a certain amount of concern among the employees," he says.

After a year and a half in Dallas, in the US, Per-Arne Sandström also thinks that it is nice to come home to Stockholm.

"My new role is an enormous challenge and I am happy to be able to join and strengthen the management team during the tough period that we have now encountered."

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It's like pulling off a band-aid – the longer it takes, the more painful it is



Ericsson's new Chief Operating Officer, Per-Arne Sandström, is currently tackling many major issues. One of the most important is a review of Ericsson's product portfolio – he has to decide what systems and products Ericsson will offer in the foreseeable future. He is also driving the Concentration Strategy, a review of research and development operations and in which countries these should be conducted.

Photo: Ecke Küller

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PRINTED AT

Nerikes Allehanda Tryck,
Örebro, 2001

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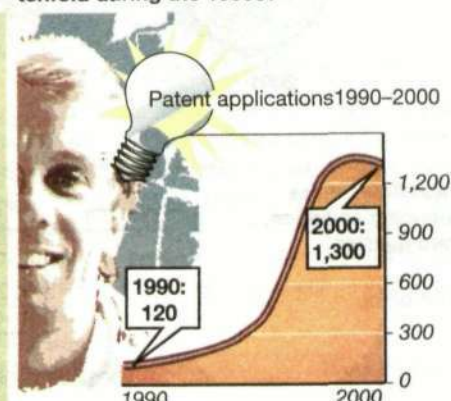
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DID YOU KNOW THAT...

...Ericsson's patent applications increased tenfold during the 1990s?



Ericsson well prepared for the future

Ericsson CEO Kurt Hellström praises the entire organization for accomplishing a great deal in this "very difficult time of transformation, with the Efficiency Program and the restructuring." Kurt Hellström feels that the third quarter results prove that Ericsson is prepared for brighter days.

► "I'm pleased that we have positive cash flow, and that we have continued to take market shares in the systems market," says Kurt Hellström.

"Our Efficiency Program is ahead of schedule, and a lot of people have done an excellent job. We are able to take our destiny in our own hands and execute what we thought was necessary to slim Ericsson, and adapt to new conditions."

Getting closer to customers

Kurt Hellström has been spending a lot of time the last months with Ericsson customers. Therefore he has a very good view of market developments.

"The market is still in a loss situation, but it's more or less along the expected lines, except in Latin America, where the slowdown came much faster than expected."

Kurt Hellström adds that Ericsson had warned the market about this in September. He says that although customers are still cau-

tious, he feels that sooner or later, the industry will bounce back powerfully.

Kurt Hellström elaborated on the customer situation, which is still focused on return on investments and deferring capital.

"That is hurting us. But the underlying fundamentals in the market are that traffic in mobile systems is growing. It's just a matter of time when this will impact our sales.

"From what our customers say, we could make estimates about next year that go either way. I'm pleased with positive developments in North America, where we are gaining market share. There are also positive developments in Eastern Europe, the Middle East and Africa. Of course, China is still a very positive market for us. We are planning for better times, because they are coming," he predicted.

Kurt Hellström noted that the Sony Ericsson Mobile Communications has had a better start than expected, and that the latest models of mobile phones from Ericsson, the T39, T65 and T68, were all selling very well.

Chief Financial Officer Sten Fornell commends the organization as well for accomplishing positive cash flow for the second straight quarter. For that he credits a push in driving down accounts receivable as well as inventory. But that's not quite enough to turn Ericsson's financial position around.

"I'm now formulating a SEK 13 billion challenge for the fourth quarter," says Sten Fornell. "This would give us a positive cash flow, not only for the fourth quarter but for the full year."

Cash wars

Sten Fornell realizes that reducing Accounts Receivable is a great challenge.

"It's starting to be a tug-of-war about cash. Everybody would like to sit on their cash. But we are delivering fine, we are delivering with quality, and of course we would like to have the money."

For next year, the Q3 report predicts an operating margin of five percent.

"All in all, I'm very optimistic about what we can do and what we can achieve in the fourth quarter," says Sten Fornell.

"Ericsson is moving in a direction where we're becoming competitive for the future. Brighter days are coming, maybe faster than we expect. In times like this, it is easy to be overly pessimistic," concludes Kurt Hellström.

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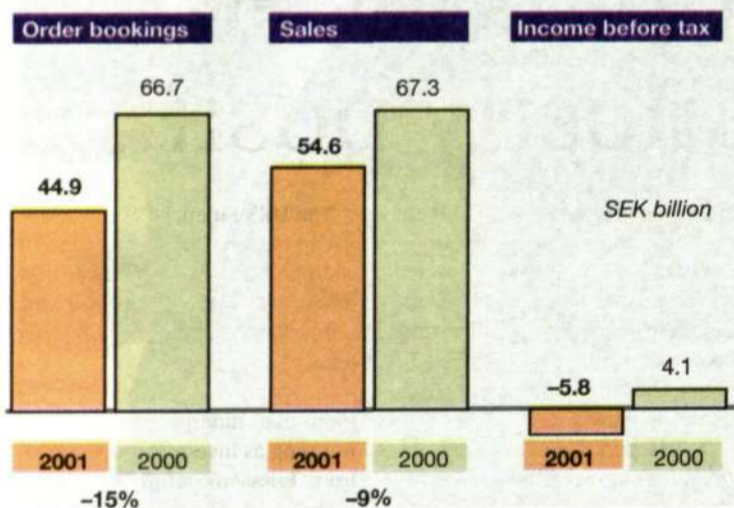


Driving down accounts receivable as well as inventory are two important achievements that have helped Ericsson reach positive cash flow for the second straight quarter.

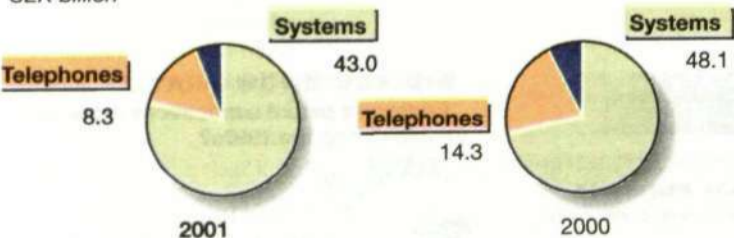
Photo: Ecke Küller

THIRD QUARTER 2001

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



Invoicing by segment, third quarter



Cash flow before financing activities, third quarter



Illustration: Pauus Media

Results show lower income but positive cash flow

► The third quarter report shows that Ericsson's cost-saving strategy is garnering results. Even though revenues declined, Ericsson's performance demonstrates that the company can quickly adapt its organization and costs in a difficult market situation.

Among other positive notes, strong focus on working capital put cash flow on the plus side for the second quarter in a row. GSM year-to-date sales are up 17 percent and Ericsson has extended its leadership in 2G and 3G mobile systems. The Efficiency Program is ahead of schedule and its momentum has led management to set a goal of a 5 percent operating margin in 2002.

The adjusted income before taxes is reported at a loss of SEK 5.8 billion in the third quarter of 2001, and shows drops in orders and sales throughout the core business. As previously announced by Ericsson, sharply reduced sales in Latin America were a major reason for the loss. However, sales are reported to be strong in China, the Middle East, and Africa.

Compared to last year's third quarter results, orders of systems are down 29 percent. Orders of phones were down 47 percent and "other operations" experienced a 46 percent drop. Sales of systems of all three units combined are down 19 percent compared to the same time span last year.

"Strongest in the industry"

In the operational review, systems were reported to have maintained a one-percent operating margin.

"Although this margin is not satisfactory, it has held up well compared to our peers," says CEO Kurt Hellström.

Mobile Systems experienced a six percent decline in sales in the Third Quarter. Kurt Hellström says sales performance in mobile systems is still "the strongest in the industry."

Multi-Service Networks, which had enjoyed 23 percent sales increase during the first two quarters of the year, saw a 21 percent plunge in sales.

"As a consequence of the lower sales and margins, the product portfolio is under review," states Kurt Hellström in his comments accompanying the report.

Mobile phone sales were characterized as "flat", at 7.2 million units, but higher average selling prices resulted in "somewhat improved" financial performance. The Sony Ericsson Mobile Communications joint venture marks the restructuring of the mobile phone business.

Adjusted operating income for other operations declined due to lower sales and volumes in both Microelectronics and Cable and Defense.

Positive Cash Flow

Cash flow stands at SEK 1.2 billion, and receivables are down by SEK 5 billion. Inventory was also reduced by SEK 2.4 billion thanks to better turnover. The Efficiency Program has been enormously effective. As a result of the program, Ericsson saved SEK 2.5 billion this quarter and has forecasted savings of 7 billion for the entire year. Kurt Hellström and Chief Financial Officer Sten Fornell have set an objective of achieving a five percent operating margin for 2002.

For the first nine months of 2001, Ericsson's orders totaled SEK 181.5 billion. Sales were SEK 173.3 billion, and adjusted operating margin was minus 8 percent.

Ericsson is not changing its global forecast of 25-30 percent mobile subscriber growth this year. The telecommunications industry slowdown accelerated during the third quarter as Ericsson foresaw, and now growth is predicted to be flat, if not lower by 10 percent.

For the fourth quarter, Ericsson expects net sales of approximately SEK 55 billion, and another loss due to continued price pressure, under-utilization of capacity and increased provisions for customer financing risks in Latin America.

Dodi Axelson

Ericsson invites new chairman

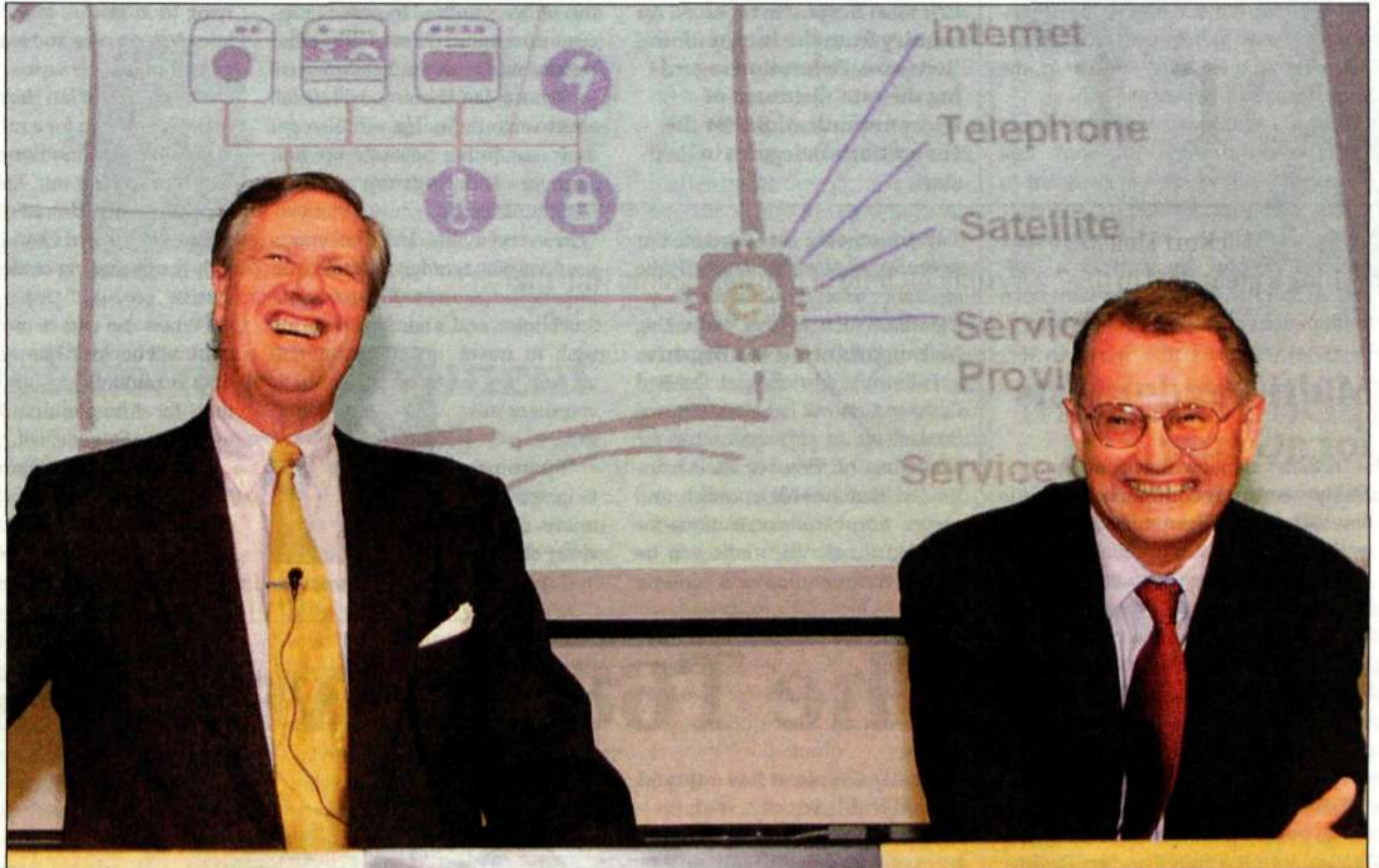
► After four years as chairman of Ericsson's board, Lars Ramqvist announces that he will not be available for re-election. The proposed successor is Michael Treschow, president and CEO of Electrolux. He will resign from his current position at Electrolux, and will also leave the Board of Investor AB. He is invited by Ericsson's board to follow its work up until his nomination at the Annual General Meeting in March.

Michael Treschow was born in 1943 in Helsingborg, Sweden, and holds a Master of Science from the Lund University of technology. Before he took over as President and CEO of Electrolux in 1997, he worked for Atlas Copco where he held the same position.

Lars Ramqvist will continue as Chairman of the Board until March, and will thereafter be appointed Honorary Chairman of the Board.

"After 22 years in the company's top management, 12 years as Director of the Board and four years as Chairman of the Board, it is time to leave the Chairmanship. I have had the great privilege and joy to contribute to developing Ericsson into a world-leading company and the leading supplier of mobile systems," says Lars Ramqvist, who has seen Ericsson through no less than four trade recessions.

He also says he is convinced that the company will be able to turn around negative results to the better this time, as all other times.



Ericsson's new leading men, Michael Treschow and Kurt Hellström, have worked together before. They are both members of the board of Atlas Copco. And now they will work together at Ericsson. Photo: Pressens Bild/Tobias Röstlund

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China is a market that is showing a strong level of growth. "There was continued growth during the third quarter and we also foresee substantial growth for the full year. The situation for long-term development looks positive," says Jan Malm, head of Ericsson in China.

Photo: Lars Åström

Optimism despite global downturn

► Operators continue to be cautious about making investments and the telecom market is sluggish throughout the world. However, after Ericsson's third-quarter report, the heads of the company's market areas are nevertheless able to discern growing business in several important markets.

A comparison of order bookings during the first nine months of 2000 and the same period in 2001 shows a decline of 15 percent. Stagnating markets are a global phenomenon, but there are indications that trends are moving in different directions in different regions.

There was a negative start to 2001 for the markets in Central and Eastern Europe, the Middle East and Africa, but this market area is now showing a strong trend.

"The EMEA market area is large and represents countries and markets that vary considerably," says Mats Dahlin, head of the EMEA market area.

"There is strong market growth in Central and Eastern Europe, driven by the positive developments in Russia. We are strengthening our position in Africa and we have recently had major successes in Nigeria. We have witnessed favorable growth in the Middle East and the future looks positive, but we are paying close attention to political developments. The situation in Western Europe

is worrying, but there are customers – operators – who are doing a favorable level of business, so my view of this is also mixed."

China is another market that is showing a strong level of growth.

"Developments are proceeding according to plan. There was continued growth during the third quarter and we also foresee substantial growth for the full year. The situation for long-term development looks positive and is being supported by the Chinese government's view of the future," says Jan Malm, head of Ericsson in China.

Caution among operators is expected to continue for a substantial part of next year. This is the result of the extremely difficult financial situation in several countries, including Argentina and Brazil. Despite this, there are several positive signals that could change this situation during the second half of 2002. The US is now in a phase when operators are starting to invest in new projects. Ericsson is well-positioned to do business when the market turns around," says Gerhard Weise, head of the Americas market area.

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Influential opinions are mostly positive

► Despite a loss of SEK 5.8 billion, Ericsson's third-quarter report received an overwhelmingly positive reception from the industry-watchers. The majority of influential opinions within the world of finance believe that the company is on the right track.

"This report surpasses market expectations in two extremely important areas. The first is cash flow, which we interpret as clean and favorable," says Lars Söderfjell, chief analyst at Sweden's Handelsbanken.

"The second is the Efficiency Program, which has started to show results. These results actually exceed our expectations."

Major interest

As chief analyst, it is one of Lars Söderfjell's main tasks to register and interpret industry reactions to the report.

"What we have seen to date has been a major purchase interest from US investors and the same can be said of continental Europe. The reason is that foreign investors and analysts were among the more pessimistic experts regarding Ericsson's ability to achieve a positive cash flow during the past quarter. They were positively surprised by the report and began to buy."

The UK's Financial Times began its article on Friday morning by stating that the Ericsson share price increased substantially after publication of the third-quarter report:

"...Shares in the company rose more than nine percent on Friday morning as investors took comfort from Ericsson's return to positive cash flow, its five percent operating margin target for next year and the news that Lars Ramqvist is to step down as chairman."

The European edition of the Wall Street Journal said that the loss was greater than expected, but that:

"Ericsson said its cash flow was SEK 1.2 billion, which compares with a negative cash flow of SEK 6.2 billion in the year-earlier quarter, which will likely please analysts".

A turnaround for Ericsson

In Swedish financial daily, Dagens Industri, the heading was: "Ericsson reports positive cash flow again." The newspaper speaks of a turnaround for the company and analysts interviewed by Dagens Industri are optimistic about Ericsson's future.

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Ericsson donates to the Red Cross

» A USD half-million check from Ericsson has been handed over to the American Red Cross to help with relief efforts following the terrorist attacks in the United States on September 11th.

Ericsson employees collected nearly USD 200,000 through Ericsson's Fast Response fund, which was designed to gather money quickly and get it directly to the Red Cross. Ericsson corporate rounded off the donation to a half-million, but Fast Response remains open for donations until the end of the year.

Multi-vendor tests for 3G core

» The world's first tests to determine how various suppliers' 3G core networks work in concert have just been completed in Japan. J-Phone, NEC and Ericsson have passed the first test in a series of Multi-vendor Laboratory Tests.

Ericsson has earlier demonstrated interoperability with 3G handsets from various vendors in customer environments, which was also a success and a world first.

The important feature of this initial test was to try out NEC's core network against Ericsson's HLR, Home Location Register and FNR, Flexible Number Register. Tests on other parts of the network have already begun. Next year, the tests will involve Radio Access Network manufactured by NEC, Nokia, and core networks manufactured by Nokia.



New hands-free discreet and smart

» Sony Ericsson is launching a new hands-free set with Bluetooth that weighs just 26 grams and can be attached to clothing or worn as a necklace or watch. It will be available on the market in November.

Called the Ericsson HBH-20, the new product consists of an earpiece and a Bluetooth radio connected by a short cable on which a microphone is placed. At about half the size of a credit card, the HBH-20 combines wireless technology with the design of a conventional hands-free set. The Bluetooth unit is equipped with small buttons that allow the user to manage incoming and outgoing calls without using the phone.

Finnish voice traffic over ADSL

» Finnish operator Sonera Entrum is the first customer to purchase Ericsson's system for IP telephony over ADSL. Ericsson's system allows the ADSL connection to be used for voice over IP.

"We are implementing an existing service on a new platform. This solution also works on Ericsson's Ethernet cable. This was the method selected by Italian operator Kingcom a few months ago," says Per-Olof Sjöberg, manager for Residential Communication Services at Ericsson Business Innovation.

Volunteer to Pakistan

Ericsson Response received an inquiry from the International Red Cross Federation regarding the establishment of telecommunications for the Federation's delegates in Pakistan.

"We are sending Jan Herremo, our telecom delegate. He has exactly the special training required for an assignment such as this," says Dag Nielsen, head of Ericsson Response.

Following a briefing at the Red Cross in Geneva, Jan Herremo was booked on an airplane bound for Islamabad on October 23. It is intended that he will establish and secure telephone connections for the Red Cross. VHF radio will be used for communications between

the refugee camps. In order to secure communications with other regions and with the headquarters in Geneva, Jan Herremo will install short-wave radio. He will also get their computer network up and running and organize satellite communications.

In everyday life, Jan Herremo is product manager for tactical radio links at Ericsson in Kista, outside Stockholm, and it has long been his wish to travel abroad on a volunteer mission.

"I have participated in many courses along the way and it is grati-



Jan Herremo

fy to at last be able to put this knowledge to use and really make a contribution," he says.

The plan is for Jan Herremo to remain in Pakistan for a month and it is possible that another person will join him to help out. Ericsson Response has also donated 20 mobile phones to the Red Cross, but this is only the beginning of the work that awaits.

"When the war is over, the real work will begin. What we are doing now is building up our preparedness for future humanitarian efforts," says Dag Nielsen.

Ericsson's cooperation with the Red Cross and the UN is unique, according to Dag Nielsen.

"Some companies help out by providing money, others supply

equipment, but there is no other telecommunications company that is as active in providing know-how.

Jan Herremo's greatest worry is all of the work that will be waiting for him on his desk when he returns home. This is despite the fact that his destination is the area that the world currently fears most.

"If the situation heats up too much, we will simply move to Iran or some other adjacent country," says Jan Herremo. "But things aren't as dangerous as they seem when you read the newspapers. I am confident that Ericsson and the Red Cross have our safety under control."

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The T68 arrives in stores

Recently, Ericsson has enjoyed considerable success with its T-series of telephones. The T39 has sold extremely well, and, less than a month after its launch, the T65 appears to be selling in large numbers. Now the rollout begins for the T68, Ericsson's first GPRS phones with a color display.

The T68 will first reach stores in the UK, Switzerland and Sweden, with global markets to follow.

"When we first presented the T68 at the CeBIT exhibition in March, we promised that the phone would be available in the stores by mid-October, and we have worked extremely hard to fulfill this promise," says T68 product manager Carl Smith.

A 24-bit color display, a built-in antenna, GPRS and Bluetooth are a few of the features that make the T68 an eagerly awaited product in the market. It is primarily targeted at 25 to 35-year-olds interested in technology and with an active social life.



The T68, Ericsson's new success, is now available in stores.

The T68 will also support MMS, Multimedia Messaging Service, although this will not be available until next year, since operators have not deployed MMS as quickly as anticipated.

"There were no MMS services for us to test, so we are delaying that function until we are able to test its quality," says Carl Smith.

the positive publicity the phone has received in the media.

"The phone seems to be hotly desired. People read about it in the papers and then come into the store to ask when they can buy one."

Another Ericsson phone for which expectations are high is the T65, which came onto the market just under a month ago. Reviews in the media have been favorable, and it has sold extremely well.

"It's a somewhat mixed group buying this model. Young people come in and look, but those who buy it are usually a little older or are business customers," Magnus Ljung notes.

The greatest success is the T39, however, according to Magnus Ljung. It has been on the market for some time now and was a big hit right from the start.

"It's small, has a smart design and is simple to use. It has sold incredibly well."

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Ericsson brings Mobitex to China

Ericsson has signed a major contract with the Chinese wireless operator Sky Networks Communication Group Co. Ltd. The contract includes delivery of a Mobitex system for mobile Internet services.

When it is completed, this will be the first commercial Mobitex network in China. The contract includes a provision for expansion in the area, which is the world's largest market for pagers with more than 80 million subscribers. Mobitex can be used as an online channel for wireless communication and for sending and receiving messages without the need for making or receiving calls. Sky Networks will focus on Mobile Internet services. In the future, the wireless data network will

be built using Mobitex technology to create an integrated information platform that includes the operator's satellite network, high-capacity data center and call center.

Commercial service is expected to be launched at the beginning of next year, with the network build-out continuing throughout 2002. The order includes equipment and services, but not wireless devices or terminals. Initially the new network will be able to serve about 500,000 subscribers in the capital, Beijing, and northern regions of China. This will make it the world's second-largest Mobitex network after the one operated by Cingular Interactive in the US.

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Remembering colleagues lost in Milan crash

Separate memorial services were held for the Ericsson employees who died in the plane crash on October 8 in Milan, Italy.

One service was held in Gothenburg, Sweden, where Håkan Andersson lived and worked, and others were held in Milan, Rome and Pagan, Italy, where Tino Calgaro, Agostino Picciriello and Håkan Andersson had all worked.

On October 12, more than 100 of Håkan Andersson's colleagues at Ericsson Microwave, family and friends in Gothenburg, Sweden, gathered for a memorial.

Colleague Fernando Kjellén said: "Håkan's death is a big loss for us, which will take time to heal. We are many who mourn him, each in our own ways."

Those who wish to send condolences or contribute to a fund for Håkan Andersson's family can contact Kajsa Toftered via Ericsson Microwave.

The cathedral in Milan hosted hundreds of mourners on October 13, remembering all of those who died in the crash at Linate airport.

In addition, private ceremonies for Tino Calgaro and Agostino Picciriello were held in Milan, Rome and Pagan, home of ERI Design Centers.

"All the employees at ERI are very sad to lose these esteemed, dear friends," said Gaetano Agnoli, ERI communications manager.

"This tragic loss is felt throughout our company."

Dodi Axelson

Ethical standards in print

A leadership position carries certain responsibilities. Ericsson has prepared a corporate Code of Conduct, therefore, to ensure that standards for social responsibility and business ethics are maintained. The document is available on Ericsson's intranet.

The document does not change the values on which Ericsson's

business operations are based today.

"It has been revised to clearly define the rights and conditions applicable for people involved in all aspects of our work," explains



Lars Göran Bernau

Lars Göran Bernau, director of Sustainability and Environment, an operational unit of Ericsson working with sustained business development.

The purpose is to clearly state to staff, suppliers and any other affected parties that Ericsson expects employers to respect fundamental human rights, to treat their workforce fairly and with respect.

"We feel responsible for the people that work in our production

and support of our products and services worldwide, which is increasingly becoming a requirement from our customers," says Lars Göran Bernau.

The document covers a broad range of issues including basic human rights, the right to collective bargaining and the right to have a workplace free of sexual harassment or racial or gender discrimination. It covers observation of standard working conditions like the right to a safe working environment, regular wages, and legal working hours. The document also reserves the right to monitor and make unannounced visits to sites where work is done directly or indirectly for Ericsson.

Ericsson's efforts to explicitly define its conduct in both business and environment have resulted in recognition from the Dow Jones Sustainability World Index, and its new benchmarking index STOXX (see article below).

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inside.ericsson.se/5minutes →
October 23

Dodi Axelson

High marks for telecom development

Ericsson has been named the telecom industry's "Sustainability Leader" by the Dow Jones Sustainability World Index.

Ericsson received the award in recognition of its sustained, long-term development achievements in communications technology.

The award has focused global attention on Ericsson's efforts to establish a leadership position in the telecom industry through greater resource efficiency.

Ericsson was also ranked as the leading company in the technology market sector by the new Dow

Jones STOXX Sustainability Index. The new index evaluates companies at three levels: environmental, economic and social performance.

In its evaluation of Ericsson, Dow Jones wrote: "The company's public commitment to, and communication about, sustainability has greatly improved this year. Product safety and public concerns about electromagnetic fields and health has been given great importance, highlighting Ericsson's commitment to social responsibility."

The Index also praises Ericsson's involvement in the UN Global Compact – a UN-sponsored pro-

gram for improving corporate social responsibility.

"It is not enough today to just deliver excellent products and services. They must be produced and delivered in a way that is respectful of the rights of everyone involved as well as supporting sustainable development of our world," says Kurt Hellström, CEO and president of Ericsson.

The index consists of more than 200 companies representing the top 10 percent of leading sustainability companies in 64 industrial groups.

Dodi Axelson

2,000 jobs eliminated in Sweden

Ericsson is following up its earlier job cut announcements with formal notification to 2,000 employees in Sweden. The announcements affect people in three areas: 1,300 in Stockholm, 600 in Gävle and 100 in Gothenburg.

The redundancies are in line with the ongoing Efficiency program

and a result of consolidating the new organization and continued implementation of Ericsson's production strategy.

Reduced workforce

The production in Gävle will be focused on industrialization of new 3G products (preparation for volume production). GSM production in Gävle will be transferred to Kumla.

Including these redundancies, Ericsson has reduced its workforce in Sweden by 4,000 since the beginning of the program in April 2001.

In line with plans

This is in line with earlier announced plans to streamline the entire organization and reduce costs by approximately USD 2 billion.

After negotiations with the unions, employees will receive individual notice. Support to notified people is subject to local union negotiations in order to adjust to specific conditions and employee needs. Employees can ask their local organization managers for more details.

Dodi Axelson

Mobile phones monitor heart patients

The ability to monitor patients with heart problems from within their own homes could become a reality in Denmark in the next couple of years. Ericsson in Denmark has been collaborating with the hospital in Ålborg and the operator Sonofon, among others, on a joint venture project to develop a solution for remote monitoring.

Yousef Jasemian, a doctoral candidate and employee at Ericsson in Denmark, is one of the instigators of the project. He hypothesized that hospitals, with the help of Bluetooth technology and GPRS networks, could transmit patient

information from the patients' homes to the hospital.

Ericsson in Denmark decided to run with his idea, forming a working group and contacting a number of partners that they felt should be part of the project. Six months later, five collaborators – Ericsson in Denmark, the hospital in Ålborg, operator Sonofon, the University of Ålborg and Danica Biomedical (which develops ECG equipment) – received research grants from the Danish Government's IT campaign.

Ib Byder is head of technology at Ericsson in Denmark. He explains that there are three main reasons for Ericsson's involvement in this effort.

"We want to be involved in influencing how Bluetooth tech-

nology is used and how it can be developed for various applications. We're also expanding our expertise by participating and it is a good way for us to demonstrate our social involvement. In addition, this work helps promote Ericsson as a desirable employer."

Remote monitoring is achieved through the use of small electrodes, attached to the skin, which measure the sound of the heart. Information about heart rates is sent via the mobile network to a server at the hospital. This allows doctors and nurses to remotely monitor a patient's condition.

Egon Toft is the senior physician at the cardiology department at Ålborg Hospital:

"The advantage of this solution is that we receive more information about a patient's condition within their home environment, where they are more likely to be up and moving about. Moreover, we can also follow up on any possible side effects caused by heart medication. We are better able to monitor patients during their period of recovery," says Egon Toft.

The project is being launched in November and will continue through March 2003. The first prototype system is expected to be ready for testing by December this year.

Ulrika Nybäck

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Contract in China exceeds expectations

Ericsson signed two contracts recently with Guangdong Mobile Communication Corporation (GMCC). The contracts are valued at nearly USD 535 million.

Ericsson will supply hardware and software for the expansion of

GMCC's GSM-network, which will serve more than 27 million subscribers in China. The contracts are part of a framework agreement signed by Ericsson and GMCC in September 2000.

"The expansion project will provide a significant improvement in coverage throughout the entire

province," says Stephen Yeung, vice president of Ericsson in China.

GMCC will also offer new services in the network, which will enable telecom operators to offer Mobile Internet services.

Equipment for both contracts will be supplied Nanjing Ericsson Panda Communications Company

Ltd, Ericsson's largest joint venture in China.

Deliveries have already been started, and the expansion project is scheduled for completion next year.

Tonya Lilburn

HELLO THERE...



Maria Vemdal

... coordinator of the "godfather" 3G-program now being conducted by Ericsson in Japan.

Describe the program.

"Japan is the first country in the world to install, test, implement and launch a 3G-system, and we have developed skills and expertise that we want to share with Ericsson employees in other countries. We have invited employees from various Ericsson companies to take part in our work and gain experience that will be highly useful in the future. The first market to install a new system usually receives spontaneous questions from markets that are next in line for installations of the same system. Our godfather program enables us to share the 3G-skills and experience that we have developed in a carefully structured manner."

How many employees are working with you today in various forms of "at work training?"

"Spain and Italy are among the first countries scheduled to launch 3G after Japan and the UK. We have five employees from Spain and five from Italy, with two more from Spain on their way over here. Most of them will stay in Japan for about six months. When they return home they will share their experience and acquired knowledge. Although the employees working with us today are from markets scheduled to launch 3G-systems in the near future, there is also room here for personnel from other markets."

What types of jobs are involved?

"A large part of the work is focused on configurations, integration and planning of the radio network, transmission design, installation work and multi-vendor integration, which involves the integration of equipment from other manufacturers. Some of the work is managed from Ericsson's office, while other jobs are conducted at customer sites with J-Phone personnel.

"All of the work so far has involved technical jobs, but we are also open to other aspects of operations. The key element is that we have skills we can share with others and opportunities to offer on-the-job training without detracting resources from our own operations."

How long have you worked in Japan, and what did you do before?

"I came to Japan about a year and a half ago and worked with terminal operations. I transferred to system operations in December 2000, when we also started to plan the present 'godfather' program. I enjoy living and working in Japan, and I'm fascinated by the fact that life is so different compared with Sweden."

Gunilla Tamm

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Mobile games a tough sell

Outside Japan and Korea, mobile games are slow to take off. In the meantime, companies in the industry are forced to desperately court operators and traditional gaming companies to survive. And to churn out games that work with today's SMS and WAP technologies.

Market analysts are outdoing each other in forecasting the mobile games market. Estimates vary from Strategy Analytics assumption that about 6 percent, or 107 million users, will play mobile games regularly in five years' time to ARC's optimistic forecast of some 850 million gamers, or about half the user base.

One conclusion on which nearly everyone agrees, however, is that mobile games will soon generate very substantial revenues for both operators and game developers.

The Swedish company Picofun has its own games platform and partnerships with more than 20 mobile operators around Europe. Still, the company is struggling in a mobile gaming market that is slow to take off.

"There are too few consumers to achieve critical mass with stable revenues," says Fredrik Syrén, Picofun's marketing and sales manager.

Nitesh Patel at market analysts Strategy Analytics believes that the companies that will succeed are those able to convince operators that it will be their platform and game channels that will attract frequent and regular users.

In addition to Picofun, Patel names Digital Bridges, Ludiwap, Jamdat, Cash-U and nGame as examples of companies with many operator contracts.

Own platform

"It is also important to develop strong partnerships with traditional game vendors," notes Nitesh Patel.

"In the long run, operators will want to avoid working with many small suppliers of platforms and games. They will want to have their own platforms and to work with a few large companies that are able to offer well-known games."

Such partnerships are now emerging. One example is the UK's Digital Bridges, which has signed a contract with the traditional games company



A little Snake and Pacman now and then, but it is computer games that are of primary importance to Timor Soltanov, Michel Lundberg och Robert Lundberg. They are eagerly waiting for mobile games that are less expensive. "Imagine being able to play against someone in Thailand," says 13-year-old Robert longingly.

Photo: Ecke Küller

Codemasters Ltd. Together, they have published LMA Football Quiz, which is a quiz game based on the popular Playstation game.

Another example is Finland's Springtoys, which in partnership with Infogames, one of the world's largest third-party suppliers of interactive entertainment, will produce various games for Palm handhelds.

Why don't the traditional game vendors develop mobile games themselves?

"The answer is that they lack experience in wireless technology. That's why there must be a player in the chain that develops wireless games for the major game vendors," answers Nitesh Patel.

When he looks into his crystal ball, he predicts that many of the mobile game companies will be bought up by larger developers. This will not take place until the market gains momentum, which will take several years.

"Operators are waiting for the J2ME (Java 2 Micro Edition) virtual machines to be built into mobile phones," says Nitesh Patel.

J2ME is needed so that Java games can be downloaded and played on the phone.

There are already several phones in Japan that support Java, but it is likely that all mobile phone manufacturers will equip their phones with this technology. Nokia has included J2ME in its 9210 Communicator, and Motorola has manufactured Java phones for Nextel. For the time being, however, there are few Java-based games.

"As far as I am aware, the only European operator offering Java games is Norway's Telenor via its Djuce portal," says Nitesh Patel.

The French game developer Infusio has developed a technology consisting of a proprietary game engine called ExEn that competes with J2ME.

It's important to focus on strong partnerships with traditional game vendors and operators

Nitesh Patel



ExEn can only be used for games, however, while J2ME is a generic platform for all kinds of applications that is also being standardized.

Common standard

Another important issue with which the industry is wrestling is that games work better on some networks and terminals than on others. A common standard is required to solve this problem. Ericsson, Motorola, Nokia and Siemens launched an initiative this summer, called the Mobile Games Interoperability Forum, to develop such a standard.

Sweden's Terraplay has already developed its own patented platform for both fixed and mobile games. The system supports such differing platforms as Windows, Playstation2, Java and Symbian, and this means that players can compete against one another, regardless of bandwidth and terminal.

"The system also the information in the game that is important and adapts the game according to the user's bandwidth," explains Ste-

fan Nilsson, information manager at Terraplay.

Do we really have to wait for Java, new standards and packet-switched data for mobile gaming to take off? Brian Baglow, information manager at Digital Bridges is skeptical.

"The game developers' biggest mistake is that they are focusing too much on future technologies. Many developers have ambitious plans for 3G phones, but they don't have a clue about how to develop attractive content for wap and SMS, which are the technologies that are available today," says Brian Baglow, adding that Digital Bridges is developing games that take advantage of the R520 GPRS phone's greyscale screen.

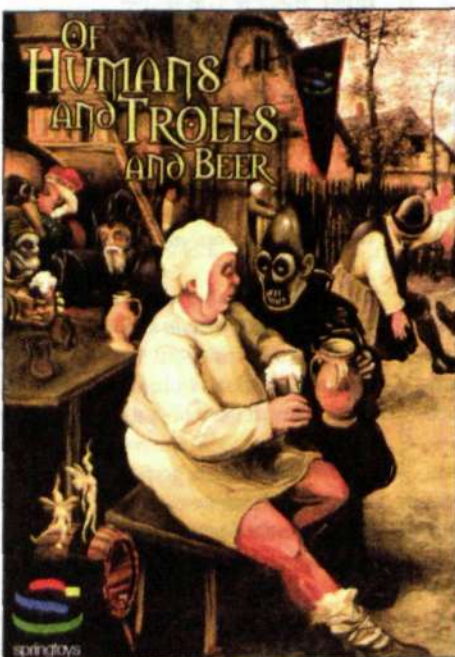
Picofun's Fredrik Syrén, however, is of the opinion that phone manufacturers and operators have a great responsibility to drive the market and ensure that revenues increase:

"Otherwise, it's going to hurt everyone involved when one company after the other goes bankrupt. That's nothing we or they want."

Strategy Analytics believes that the market for mobile games will peak in 2006 and thereafter decline in importance. Games will be the icing on the cake, rather than sustenance for operators. From 2005 to 2010, music and video clips will drive the market for mobile entertainment.

Elin Dunås

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There are already many imaginative wireless games. From the left: Of Humans and Trolls and Beer is a wap game from Springtoys. Botfighters – the world's first position-based mobile game by It's alive functions using SMS, just like Cute'n'clever from Picofun. The Pick a Pack puzzle game from Springtoys was developed for Palm handhelds.

FACTS/REVENUES

Forecasts from market analysts vary widely.

Strategy Analytics expects that there will be 107 million mobile game users by 2006 who will spend nearly USD 5 billion annually.

ARC Group estimates that there are currently 43 million mobile gamers today, but that this number will soar to 850 million by 2006.

Datamonitor believes that 150 million Europeans will play mobile games by the year 2006. By that time, revenues from mobile games will amount to USD 17.5 billion globally.

Yankee Group predicts traffic revenues from mobile games will amount USD 1.76 billion in Europe by 2005.



"Games aren't vital, but nice to have," says Per Holmkvist, games developer. Photo: Ecke Küller

Nokia projects increased sales

Nokia's earnings in the third quarter amounted to slightly more than USD 960 million, completely in line with expectations.

Nokia believes the market has stabilized during recent months, and projects a 25-percent increase in sales of mobile phones during the fourth quarter, which would approach sales reported in Q4 2000.



Nokia's CEO, Jorma Ollila

In September, Nokia's sales of mobile phones declined 50 percent in the Finnish company's domestic market.

At the beginning of October, the company launched its eagerly awaited GPRS-telephone and a special games terminal for young customers.

The company also promised to launch several other new models during the latter part of 2001.

Developing games not easy

As a developer of mobile games, Per Holmkvist has a job that many undoubtedly dream about. But the life of a games developer is no game. Instead, it is a balancing act between today and tomorrow.

The wake-up call that led to the creation of the Swedish mobile game company Bluefactory was an SMS message sent one night in November 1999.

"We've got to do something different!" were the words that Per Holmkvist suddenly spotted on his phone's display. The sender was his colleague John Wennerström.

Per Holmkvist was immediately ready to move. "We were sending SMS messages back and

forth all night long. By New Year, we had quit our jobs and started the company," he recalls.

Per Holmkvist is somewhat of a mysterious figure at Bluefactory, a company that has received most attention for its young, female president Soki Choi, also one of the founders. However, as the person responsible for product development, Per Holmkvist is a key figure.

"It's fun adding a little spice to people's lives," says Per of his job.

"At the same time, working in this industry is a balancing act. You have to use existing technology to survive, but you also have to show customers that you are pushing the envelope. That's a battle we're fighting every day," continues Per.

His company has developed some 30 games

and created everything itself except for the quiz games.

"However, in the future, many games will be based on external content," predicts Per Holmkvist, adding that he also believes that the market needs to mature out of the limelight before it takes off.

When Bluefactory recently surveyed the games behavior of mobile users aged 16 to 34, it was shown that 60 percent regularly played games on the phone. Although only 6 percent used SMS games and a mere 2 percent WAP games (the remainder used built-in games, such as Snake and Othello), the survey still showed that the habit of playing games exists.

Elin Dunás

FACTS/TYPE OF GAMES



Mobile games can be roughly categorized by whether or not they are played in real time.

Networked games are available via SMS and wap. The player makes various moves that are sent to the network's game server, which then processes the move and reacts. These are often termed "turn-based" and are most suitable for role-play, strategy games, quizzes and trivia games. A typical example of a networked SMS game is "Wireless Pets" by Digital Bridges. This game involves the user adopting a virtual animal of his/her choice and then taking care of it via SMS. Jamdat's action game "Gladiator" is an example of a wap game.

Real time or "twitch-based" games are played entirely on the phone. These include simple versions of platform games, action games, and all sorts of games that can be played on Gameboy. These games will be available as soon as Java 2 Micro Edition (J2ME) is built in to mobile phones. Today, they exist as incorporated games, such as Snake.



Cat, dinosaur or ghost? Just select a "wireless pet."

Reality games popular

Which games will be the most successful?

"Those that are linked to our own reality," says Nitesh Patel.

"In the US, Jamdat's game Gladiator became popular as a result of the film. In the UK, Picofun's game Lifestyler gained significantly more users when it was renamed Big Brother after the popular reality TV series," notes Nitesh Patel.

Bluefactory is a Swedish company that has been inspired. Its lifestyle game Mini Bar, which was launched at the end of September in coopera-

tion with the production company Strix is based on the popular Swedish reality TV series, The Bar. The object of the game is to create relationships with the participants by answering questions related to the program's intrigues.

Example: Moa and Anna have ganged up against Jaqueline. Who is right?

- a) Moa and Anna
- b) Jaqueline
- c) I don't care! Too childish!

Elin Dunás



Atlethe girl - one of the characters in Picofun's Big Brother game.

Nortel lost USD 3.9 billion

Nortel Networks of Canada reported a substantial third-quarter loss of more than USD 3.9 billion. Its result, however, was marginally better than expected.

Frank Dunn, the Canadian group's new CEO, sees preliminary signs of market recovery, but would not issue any statements about future business development.

Nortel is now in the process of reducing its workforce by half, from 94,500 employees to 45,000.

France helps 3G operators

The French government is to improve conditions for future 3G operators.

Fees will be based on the operators' revenues and the licenses will be extended from 15 to 20 years. Licenseholders Vivendi Universal and France Telecom, anticipate savings of more than USD 1.9 billion each in fees in the near future.

Many people now believe that other European countries will follow suit.

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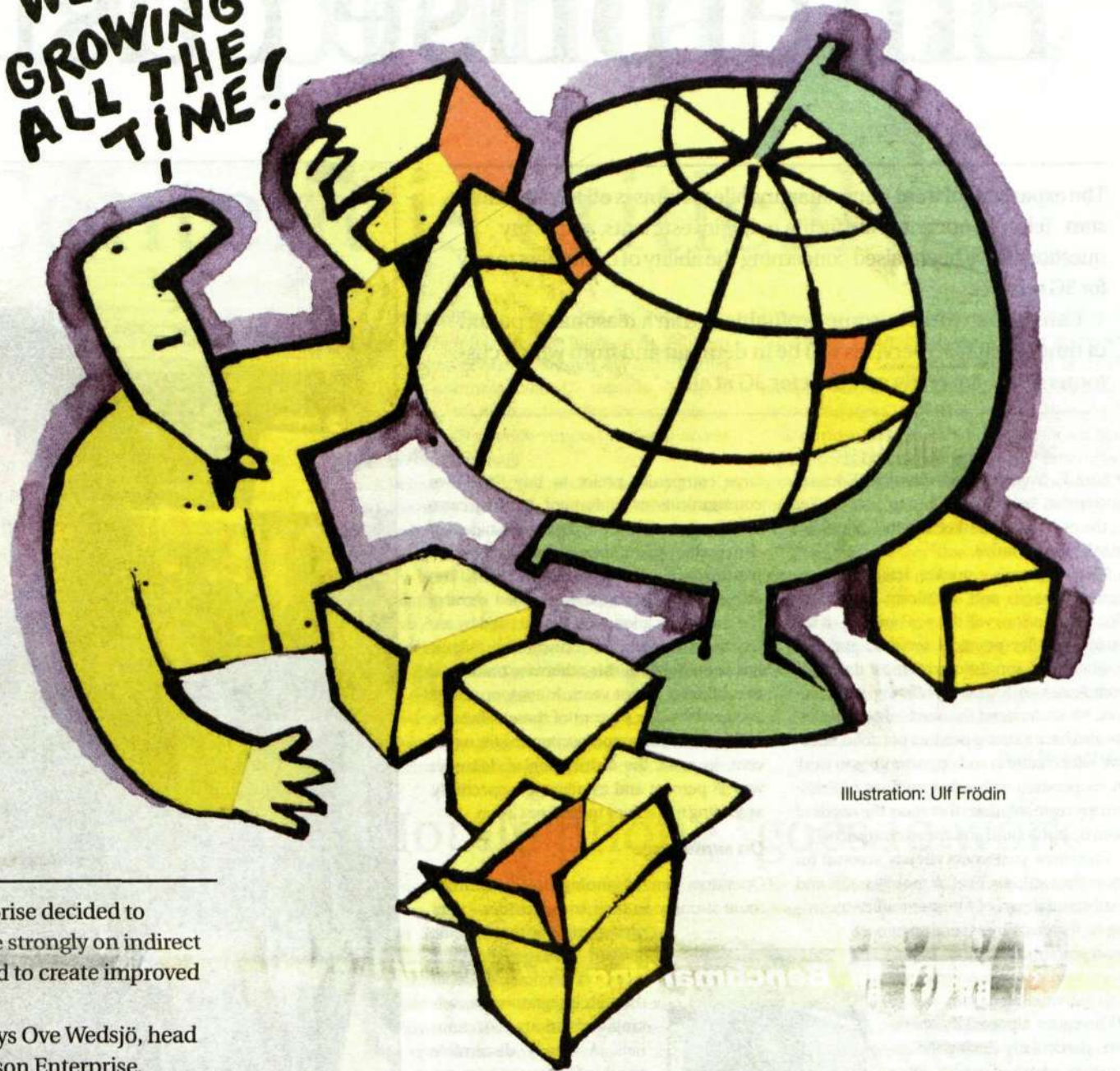


Illustration: Ulf Frödin

Less than two years ago, Ericsson Enterprise decided to discontinue direct sales and concentrate strongly on indirect sales channels. The change was intended to create improved potential for profitability and growth.

"Our efforts have been successful," says Ove Wedsjö, head of Channel Sales and Marketing at Ericsson Enterprise.

"We have reduced sales costs dramatically, increased our margins and created much broader market coverage."

Enterprise expanding through successful sales

► Ericsson Enterprise has agreements with about 400 partners worldwide, including distributors, value-added distributors, megadistributors (primarily major operators) and system integrators. There are also about 2,000 retailers in all parts of the world. One of the system integrators is Damovo, Ericsson Enterprise's former sales organization. The activities of Damovo were included in the market units before the operations were sold by Ericsson. Damovo has about 2,500 employees in 18 countries.

"The fact that we discontinued our direct sales activities does not mean we have withdrawn from the market – on the contrary, we have a lot more people today working in the marketplace, visiting customers with Ericsson Enterprise products and conducting business," says Ove Wedsjö.



Ove Wedsjö

"Our operations are growing despite a general slowdown in the market, and our growth is attributable to the expansion of our operations

beyond the segments in which we operated in the past. New sales channels account for 30 percent of our sales today, and more than SEK 500 million, approximately USD 50 million, in sales this year is attributable to completely new customers."

Key role

It should also be noted that Ericsson Enterprise has not withdrawn from the marketing units. Nearly 700 employees work in a regional development organization established to support indirect sales activities. The organization handles service, various forms of support, market launches and overall marketing. Regional offices are situated in Kuala Lumpur, Stockholm, Brussels, Vienna, Boca Raton in Florida, and California. More than 80 Ericsson companies also have Channel Managers to support local sales operations.

The primary task of Channel Managers is to ensure that skills and expertise related to the enterprise market are available and can be provided at the local level within Ericsson. They have a key role in the cultivation of sales

channels, including the establishment of new channels and development of existing channels. They also serve as a corporate resource, for example by working in cooperation with key account managers in the marketing units to create new business models that combine Enterprise's systems and products with Ericsson's range of services for telecom operators.

Ericsson's 30 largest enterprise customers, consisting primarily of multinational companies and organizations, have appointed key account managers within each region, while all other customers are managed indirectly. All orders are sent directly to Ericsson Enterprise's logistics unit in Karlskrona, Sweden, and the products are shipped from the same location. Order processing routines are now being transferred to an e-commerce system, which will also supply the sales channels with technical information and marketing materials.

Stable economy

The next phase of development calls for the integration of a CRM (Customer Relations Management) system that will also support elec-

tronic processing of customer contacts. Ericsson Enterprise has also launched an advanced partner program that includes certification at several levels. All partners will be certified, and the process of certification has already been started.

"These changes are laying the foundation for a stable long-term financial situation," says Per-Arne Wollsen, chief financial officer of Ericsson Enterprise.

"We have created a concentrated, effective and all-encompassing structure. We are able to monitor every link in the chain extending from our customers to our head office. Our primary objective is to achieve sustained business growth in the range of 20 percent and increase the profitability of our operational activities, which is a very realistic goal. We are making money, and we have been profitable for many years, but we also expect to achieve continued growth and increase our profits to a more acceptable corporate target level."

Enterprise customers key to 3G profitability

The expansion of third-generation mobile systems is off to a hesitant start. Telecom operators are facing major investments, and many questions have been raised concerning the ability of customers to pay for 3G services.

Can the networks become profitable within a reasonable period of time? Which 3G services will be in demand and from which customers? Is there really a market for 3G at all?

Lars E. Svensson, president of Ericsson Enterprise, believes the key to success lies in the enterprise market and its willingness to take the initiative.

"The enterprise market has both pronounced needs and significant opportunities. Corporations will drive 3G growth—if the operators offer practical services, and this is where Ericsson Enterprise most definitely contributes to Ericsson's offering to operators. We understand the needs of companies; we also have a strong product portfolio, effective sales channels and opportunities to work in cooperation with other sections of Ericsson to create solutions that meet the needs of both operators and enterprise customers."

Enterprise customers already account for more than 50 percent of all mobile traffic and a substantial part of Internet traffic. According to forecasts by several market research companies, enterprise customers will account for the overwhelming majority of 3G revenues reported by operators, particularly during the expansion phase. Despite these expectations, however, arguments are focused almost exclusively on consumer services in most discussions of 3G services. It is easy to forget that the first and second-generation mobile telephony systems were also developed in response to the needs and demands of enterprise customers. The boom among private customers came much later.

"The mobile telephone has given us tremendous freedom, but it has not been able to replace business switches or personal computers. Virtually every enterprise user has at least three terminals to keep a check on. We need our PCs for e-mail, intranet and Internet access, and we need our business switches to access services such as voice mailbox and call forwarding. We have talked about the mobile office for years. Now at last the concept can be put into practice," continues Lars E. Svensson.

Technology paving the way

Technologies such as GPRS, 3G and WLAN provide the broadband capacity that is needed to make all services and applications available from one and the same terminal. The underlying infrastructure, however, is highly complex and requires far-reaching integration between the networks of enterprise customers and operators, as well as between different technical solutions. In the new Mobile Internet world, system and network integrators will therefore assume a key role.

Growing interest has been noted among enterprise customers, with particular emphasis on small and midsize companies, to buy operator services or outsource their data and telecommunications needs. Most

large companies prefer to buy their own communications equipment, in many cases for security reasons, but they are also dependent on the skills and expertise of other companies to create effective, total solutions. Traditionally, operators have supplied most of the communications equipment used by enterprise customers, but a discernible change has been noted in this otherwise traditional trend during recent years. In 1999, operators accounted for 54 percent of these deliveries, with system integrators accounting for 11 percent. In 2000, the distribution of deliveries was 36 percent and 23 percent, respectively, according to a survey by Yankee Group.

On same stage

Operators are beginning to concentrate more strongly on their core activities—supplying traffic with a specific content—and reducing their focus on services available through integrators, consultants and various sales channels. A clearly discernible trend is for operators to coordinate their activities with system integrators in order to meet the needs of their enterprise customers.

"In the same way that Ericsson has consistently chosen to continue its operations in the terminal sector, in order to retain its knowledge of end-users, the company also needs to protect and develop its expertise in the Enterprise sector in order to help the operators attract enterprise customers with a competitive offering," says Kary Warnerman. He is responsible for Ericsson Enterprise's product portfolio, business development, strategy and coordination with other units. All of these functions have been gathered under a single umbrella since October 1.

"Our self-evident objective is to support Ericsson's defined core activities: business focused on operators. In this endeavor, it is important to maintain critical links between business strategy, corporate coordination issues and the product portfolio, all of which will enable us to move forward as quickly as possible," says Kary Warnerman.

"We are striving to create a market-driven organization, and we believe we have already made considerable progress in this respect. We have now established the sales channels we need to effectively offer enterprise customers our own products and solutions. In addition, our sales channels offer Ericsson an effective inroad into the market with solutions that combine products from all parts of Ericsson and from other manufacturers, packaged with services delivered by the operators."

Separate solutions

Ericsson Enterprise is participating in several corporate projects with the same objective. The most important is "The Ericsson offering to operators addressing the Enterprise segment." Enterprise Forum, a new unit established in spring 2001, is conducting the projects under the management of Torbjörn Nilsson.

"There are many different types of operators and service providers, and their needs and demands are different," says Kary



Today's new technologies have made it possible to access all services and applications from the same terminal.

Photo: Ecke Küller

The mobile phone has given us freedom, but it has not been able to replace business switches or PCs. Now, at last, the concept of the mobile office can be put into practice

Lars E. Svensson

Warnerman. "Ericsson's large systems solutions have been developed for operators with hundreds of thousands of subscribers, but they can still be adapted for operators with much smaller customer bases. In the future, we believe it will be important to develop a separate offering for this segment, depending on the financial situation, which may mean that a little more time is required before the market gains new momentum.

"We are striving to create a market-driven organization, and we believe we have already made considerable progress in this respect. We have now established the sales channels we need to effectively offer enterprise customers our own products and solutions. In addition, our sales channels offer Ericsson an effective inroad into the market with solutions that combine products from all parts of Ericsson and from other manufacturers, packaged with services delivered by the operators."

Kari Malmström



Content is critical

Enterprise customers will place the same demands on service content in tomorrow's networks as they do in today's business communication systems. They will also demand full mobility. Ericsson Enterprise already has the capability to deliver several products and services based on standards such as GSM and wap, which extend the enterprise network outside the office confines. In the future, mobile networks and enterprise networks will be combined in a single product.

Ericsson Enterprise has transferred the service core from its MD10 enterprise exchange to a modern, open server environment in which all telephony functions are available via an IP network.

"MD10 has more than 15 million users and, based on our contacts with them, we know how important these services are," says Thomas Näsström of the Ericsson Enterprise product development unit.

"By bringing the present service content into the future, we will be able to create an attractive offering for both enterprise customers and operators that sell services to enterprise customers."

At the beginning of next year, the first enterprise customers will begin testing the Mobile Enterprise Communications Solution—a complete concept for the integration of internal enterprise networks with public networks based on GPRS, 3G or WLAN in "hot spot" environments. The solution is a competitive combination of first-class telephony services, mobility and applications integration.

"Users will log-on simply and only once, after which they will be able to move freely between the different networks without any interruption in their communications," explains Thomas Näsström. "WLAN functionality, for example, or Bluetooth will provide support for local access within the company."

Customers will have access to all available business applications—intranet, databases, and support systems—from any location using the terminal of their choice. United Communication, a built-in application, will register which terminal is being used, where the user is located and which network is to be used.

"This capability creates opportunities to open enterprise networks, with no loss of security, to mobile users outside the company, such as customers. Many companies have already implemented, or plan to implement, e-commerce platforms to offer greater efficiency to their own

employees and increase their availability to customers. Naturally, they also want to provide them with mobility, all of which will be made possible with the Mobile Enterprise Communications Solution," says Thomas Näsström.

Enterprise customers and operators are both showing strong interest in Ericsson Enterprise's mobility solutions. Discussions concerning future business models are already in progress with several operators.

"The demarcation line between fixed and mobile networks is now in the process of being erased altogether, with 2.5G and 3G being viewed as wireless access to the Internet. I also believe a highly creative climate will emerge for development of new services at the interface that now exists between enterprise customers, system integrators and operators."

Kari Malmström

Mobile phone "goes to work"

Companies that already have MD10s from Ericsson can now convert the switch to create a "mobile" exchange. MD10 Mobile Extension connects enterprise networks to GSM networks and makes it possible to use mobile telephones exactly like normal fixed telephony extensions, with all the same services.

The logging-in procedure is simple. The moment a telephone is turned on, it becomes a part of the enterprise network. All switchboard functions can be accessed from the mobile telephone, including the capacity to redial busy extensions and make conference calls. Name and number presentations are also available on the mobile phone display, even though the call is processed through

the switchboard, enabling callers to use the redialing function for missed or rejected calls. The switchboard operator is also able to place calls to mobile users in a queue.

The mobile network connections are established through number conversions by the operators. It will also be possible for enterprise customers to enter contract agreements for uniform call rates, regardless of which network is used, and to divide billing for mobile calls between the company and its employees. The company pays for all calls during normal office hours, for example, while the employees pay for calls during their leisure time. Several operators have prepared their networks to offer these services to enterprise customers.



T68

Potent package makes your office mobile

Now you can use your wap phone to send and receive e-mail and hook up to the intranet via a hand-held computer in a simple, stable and secure manner. Mobile Intranet Package, launched in July, takes us a giant step closer to Mobile Internet.



"We went to great lengths to create a complete solution that the customer can put to direct practical use," says Joakim Wohlfeil of the Portfolio Management Marketing unit at Ericsson Enterprise.

The main products in the package are a wap-gateway and the Ericsson Mobile Organizer (EMO) and Ericsson Virtual Office (EVO) software. These products can also be purchased separately.

EMO provides access to e-mail, a calendar function and an address book via wap, while EVO connects portable or handheld computers directly to the company's intranet via a compressed and encrypted tunnel. Mobile Intranet Package also includes other datacom products and terminals. Ericsson Enterprise, in cooperation with Sony Ericsson, will be offering support functions for Mobile Intranet for all new terminals as they are released.

While Mobile Intranet Package is based on second-generation mobile telephony, it offers a substantially higher capability for mobile working than has so far been achieved with GSM. Users benefit from a shorter log-in time, a more secure connection and increased speed.

The applications can also be run via GPRS, and Mobile Intranet Package has been greeted with considerable interest from operators who are currently rolling out GPRS services. A number of deals are in the pipeline.

"Mobile Intranet Package is a highly flexible solution that can be adapted to the needs of companies, service providers and operators that wish to offer the service to their enterprise customers," says Joakim Wohlfeil. "When we exhibited the package at CeBIT this spring, it was hailed as a prime example of how Ericsson is making Mobile Internet into 'an everyday thing.'"

Kari Malmström

Best sales channel for

Over the past year and a half, Ericsson and Microsoft have developed solutions that have enabled office work to become increasingly mobile. Now, in order to sell and market the companies' solutions in the best possible manner, the joint venture will become a separate unit within Business Unit Global Services. Although the subsidiary will be a wholly owned Ericsson venture, collaboration with Microsoft will continue.

► In the future, Ericsson's collaboration with Microsoft will be regulated through an Original Equipment Manufacturer (OEM) agreement, which means that Ericsson will have the right to sell Microsoft's share in the solution.

"The OEM contract is a natural continuation of our collaboration with Microsoft. In today's telecom market, continuous change is incredibly important – and this also applies to collaboration. Joint ventures will be initiated, changed and dissolved, according to the needs of customers and the demands of the marketplace," explains Fredrik Strand, who is acting head of the joint venture and responsible for the integration process.

While he is somewhat disappointed, he is not surprised over all the negative publicity in the media.

Excellent partners

"The most important aspect is not the extent to which the collaboration is based on a joint venture or a cooperative agreement. The important thing is to build on the same principles that we started out with, namely that Ericsson and Microsoft make excellent partners," says Daren Mancini, operating manager of the joint venture.

The joint venture has developed solutions for the mobile office under the "Moso" banner. Solutions developed have been aimed primarily at operators and businesses, enabling end users to access their e-mail, schedules and address book from a mobile phone or handheld computer.

After a year and a half of operation, the company has signed three contracts, 40 collaborative agreements in 30 countries and is conducting 16 pilot projects. The company has now reached a point where the most important service is to be able to help its customers with such activities as marketing, business support and rapid deliveries. In light of this fact, management came to the conclusion that the best solution would be to create a separate unit within the Ericsson Business Unit Global Services.

"Ericsson's sales and marketing channels are incredibly valuable to us. We've also sensed that customers currently have considerable need for business support and, with the assistance of this business unit, it will be easier to meet that need," says Daren Mancini.

Employee reactions to news of the decision to make the joint venture company a part of Ericsson have been mixed. Initially, many were

hesitant, but the more information they have received about Global Services, the more positive their attitudes have become. At present, the atmosphere is favorable and employees are involved in the integration process, according to both Daren Mancini and Fredrik Strand.

Positive atmosphere

A continuous flow of new contracts and cooperative agreements has reinforced this positive atmosphere within the joint venture company. In recent weeks, two new contracts were reached and Daren Mancini indicates that several more are in the works, although he declined to reveal the names of the companies involved.

"Over the next two quarters, we will continue to sell our business solutions to operators. In the long term, however, we will also be entering the consumer market," says Fredrik Strand.

Ulrika Nybäck
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inside.ericsson.se/5minutes
→ october 23



"The OEM contract is a natural continuation of our collaboration with Microsoft," says Fredrik Strand, who is acting head of the joint venture and responsible for the integration process. Standing next to him, to the left, is Daren Mancini, operating manager for the joint venture company.

Photo: Gunnar Ask

Sales support key to success

The newly established Sales and Business Management plays a key role in Global Services.

The task is to provide the market units with all necessary support to increase sales of services in the telecommunications market.

► Head of Sales and Business Management is Ingvar Larsson, who previously headed Telecom Management and Professional Services within Global Services. In his new position, he bears an even greater responsibility for the success of Global Services in increasing its sales of service and support.

Naturally, his opportunities to affect the outcome have increased accordingly, and this is how he views his task.

"I enjoy challenges. Telecom Management and Professional Services was, in many ways, a purely missionary assignment and, as head of Sales and Business Management, I will face many challenges."

Two primary tasks

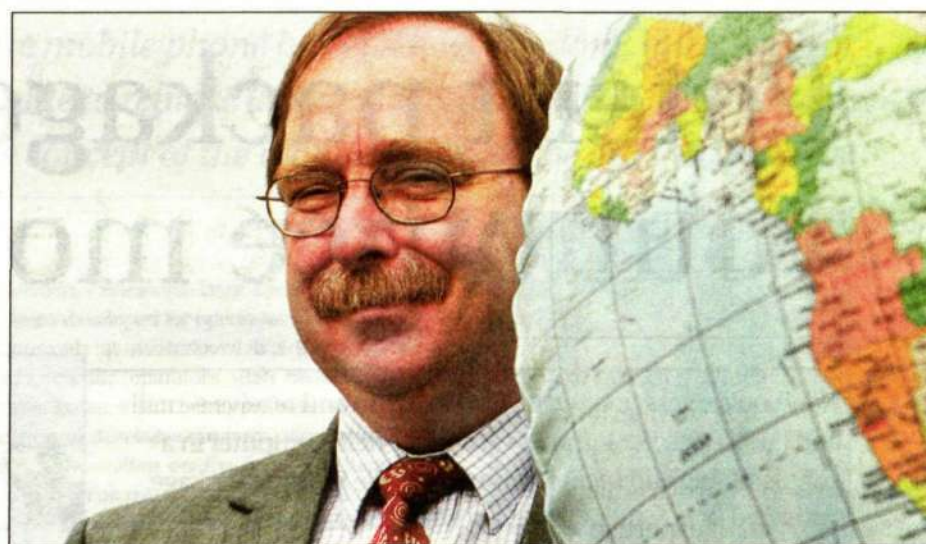
The unit has two primary tasks: to actively help the market units conduct operations within service and support and to support the sales organizations, already established by Global Services in the market units, with training and resources.

"The management for Sales and Business will be located in Stockholm, although all sales will take place through the market units. It is therefore important that we acquire the right people to sell the services and that they are given all possible support in order to succeed in their assignment," explains Ingvar Larsson.

A uniform portfolio

Four different support programs have already been developed and it is Sales and Business Management's assignment to conduct these out in the market units. The Portfolio Implementation program will ensure the provision of a uniform service portfolio for all market units. The Consultative Culture program will train sales personnel in how to behave with customers. The Service Growth program focuses on how to increase sales of services. The Successful Services and Solutions Sales program will develop the way in which services are sold.

"I expect to have all of the programs fully



Ingvar Larsson, head of Sales and Business Management, says that major opportunities lie ahead. "Even during downturns in the sector, operators need service for their systems. I am certain that we will be able to sell even more when the industry improves again."

Photo: Rolf Adlercreutz

operational in all of the market units by mid-2002," he says.

Just like the head of Global Services, Bert Nordberg, Ingvar Larsson is convinced that the future is bright when it comes to service and support.

"Major opportunities lie ahead of us. Even

during downturns in the sector, operators need service for their systems. I am certain that we will be able to sell even more when the industry improves again."

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collaboration

Improved expertise with new centers

Ericsson is gathering its top expertise in systems service at five Global Expertise Centers. The intention is to improve efficiency in the provision of expertise while keeping costs low.

► The five Global Expertise Centers form part of the Global Services business unit and are located in Stockholm, Gothenburg, Dublin, Montreal and Kuala Lumpur. Their main task is to assist the market units with the sort of expertise that they cannot maintain themselves.

"This partly involves expertise in areas where they do not usually conduct business,

for example, in the delivery of integrated billing systems or network operation. In part, it is a matter of expertise that requires familiarity with a product or systems development unit, in order to be maintained," says Göran Kördel, who heads the Global Expertise Center in Stockholm.

The normal procedure will be for a Center to work in direct contact with the customer on the assignment of the market unit.

"Previously, such expertise has been spread among regional units and local companies throughout Ericsson and it was difficult to locate the appropriate expertise," says Göran Kördel.

"Ericsson has now slimmed the number of experts somewhat and gathered those who remain within Global Services. The restructuring means that the collective salary costs of the company are reduced and that

the market units need only pay for experts as and when they need them.

"The five Global Expertise Centers will collaborate intimately, but each will have its own specialist field.

"Stockholm, for example, specializes in network design and network integration, while Gothenburg focuses on customer and network care, and so on. The idea is for each center to work globally within its field, but that we should also collaborate in order to complement one another.

"If Stockholm is unable to accept an assignment, we should be able to pass it smoothly over to Kuala Lumpur. In that way, we need never say no to a customer," explains Göran Kördel.

Jenz Nilsson

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New name – same task

When Ericsson Internet Applications became one of Ericsson's core units, its name was changed to the Service Networks and Applications Core Unit. Lars Boman, head of the unit, says that the new name better reflects the unit's operations. The aim is and remains the same – to ensure that operators can offer end-user services as the build-out of the mobile Internet proceeds.

► The former name placed the emphasis on applications, which is not the unit's exclusive area of operations, since a major portion of its work also focuses on the development of service platforms. The new name is only one of a number of changes that have occurred during the past year.

As part of the Efficiency Program, the sales and marketing functions were transferred to the business units. Today, Service Networks and Applications works exclusively on product development.

"Our products and solutions reach the market via many channels, such as Mobile Systems, Multi-Service Networks and also Global Services, where our products are included in customer solutions," explains Lars Boman. "For products that are incorporated in enterprise solutions, Ericsson Enterprise will also serve as a sales channel. In addition, certain products will be distributed via external system integrators."

Coordinated offering

During the past year, all operations related to applications development and service platforms have been gathered into Service Networks and Applications, which recently took over two operations that were formerly part of EHPT. This concludes the task of combining operations.

"We have taken over the operations relating to Jalda Safetrader – software for secure payment services – and the unit within EHPT that was developing the adaptation products that perform mediation functions between the Internet and billing systems. Previously, several of Ericsson's products in this area competed with each other. Now we will be able to develop a coordinated offering," continues Lars Boman.

The Efficiency Program has served as a motivating factor in the task of concentrating

operations. Lars Boman points out that Service Networks and Applications will be reducing its workforce by some 800 persons to approximately 3,600 persons. The number of design centers has been cut from 27 to 18.

"Naturally we also reviewed our entire product range and removed a number of products. In certain cases – where products already had sufficient functionality – we froze development work. Above all, we have done everything possible to avoid duplicated development."

Within the unit, great expectations are focused on Service Network Framework, the architecture for the development of mobile data services. Due to the subdued market growth, the roll-out of GPRS and 3G networks has not proceeded as rapidly as had been hoped, and this in turn has slowed down demand from operators for turnkey solutions.

"Service Network Framework is an architecture that could be likened, for example, to the building standards that apply in the construction industry, in the sense that product development is based on certain standards. This makes it easier to build turnkey solutions from a series of individual products. The hope is that this will become the dominant service platform among the operators who purchase mobile systems from Ericsson," says Lars Boman.

Flexibility with Easy Access

The first solution Ericsson is launching to integrate operators in the service network structure is called Mobile Internet Easy Access. It is a solution that interconnects telephones, GPRS networks, WAP gateways, portals, etc. in a turnkey solution. While the customers themselves choose which parts they want to include, the hope is naturally that they will purchase the total solution.



Lars Boman is head of Ericsson's Service Networks and Applications Core Unit. While the stagnant market growth and the demands of the Efficiency Program have imposed considerable stress and strain on his unit, Lars Boman still looks to the future with optimism.

Photo: Ecke Küller

"The market unit in Hong Kong cooperated with SmarTone to develop Mobile Internet Easy Access," says Lars Boman.

Service Networks and Applications is continuing with the work of stimulating and training third-party developers. Initiatives and programs such as Cyberlab, Mobile Internet Application Centers and Developers Zone have been combined in the Mobility World program.

"The heads of the marketing units decide whether there should be a Mobility World Center in their region. I am anticipating that the number of centers will be adjusted to reflect the mergers that are forming larger marketing units. This will also lead to a substantial rationalization and efficiency-enhancement process."

Although considerable interest is still being shown by third-party developers, they have had a difficult time as a result of the subdued market. However, Lars Boman emphasizes that we have still not seen the real harvest of all the effort invested in Mobility World. This will be evident as soon as it becomes simpler to add applications to networks via the service platforms.

"We have undergone extensive changes, but now it feels as if things are falling into place. The main task of Service Networks and Applications is still to ensure that there are services available when GPRS and the 3G networks are rolled out," concludes Lars Boman.

Jesper Mott

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PART OF ERICSSON'S NEW ORGANIZATION



WLAN is the solution for mobile students

It would be difficult to imagine a more enthusiastic group of students than those studying at the IT University in Gothenburg. The university has invested in a WLAN from Ericsson that is proving a boon for education as well as students' social contacts. Students Nima Samadi and Helena Fabersjö are on top of the world and delighted that the institution has boldly invested in this technology.

► The IT University in Gothenburg is the result of collaboration between Chalmers University of Technology and Gothenburg University. Some 150 students are registered at the IT University, which offers courses focusing, for example, on IT in the business world or health-care, interaction between humans and computers, and mobile informatics.

Victoria Nilsson is a researcher at Viktoria Institute in Gothenburg, where she teaches approximately 30 students in the Mobile informatics program. All of the students must have at least a Bachelor's degree before they can begin courses at the IT University, and most of Victoria Nilsson's students have a technical background. Successful completion of the 18-month program leads to an M.Sc. with a specialization in mobile informatics.

"The students who complete this program become experts in mobility," says Victoria Nilsson. "During the course units that are currently under way, they learn programming for mobile networks, and at a later stage in the program they will study design and conduct user studies. These are Ericsson's future employees."

Laptops save space

Virtually all of the approximately 150 students attending the IT University use laptop computers equipped with network cards that give them access to a WLAN supplied by Ericsson. It would have been impossible to provide the students with their own stationary computers, since this would take up too much space. By



At the IT University in Gothenburg, Victoria Nilsson teaches students in the Mobile informatics program. She and students Nima Samadi and Helena Fabersjö are very satisfied with the WLAN from Ericsson that covers the campus.

Photo: Anna Rehnberg

using portable computers and the WLAN, the space problem is eliminated.

The 30 or so students studying mobile informatics are equipped with both a laptop and a handheld computer linked to the wireless network. Access to the WLAN is virtually indispensable for their coursework.

"It is essential for us to have a wireless network, since the instruction we provide is largely aimed at teaching the students to program for mobile networks – primarily for handheld computers," explains Victoria Nilsson.

In the spacious facilities, the students sit in groups with their computers in front of them. While some of them work intensively on group projects, others chat and surf and enjoy each other's company. Helena Fabersjö sits in a smaller room with a few coursemates putting the final touches to an assignment that has to be handed in. She has previously studied electrical engineering with a specialization in telecommunications.

"It's marvelous to study in a place where you can really push yourself. I feel really privileged," says Helena Fabersjö.

She explains that the students have access to all the instructional material via the network. Lectures are video filmed and stored as Quicktime files, which students can download whenever they wish. This gives them considerable freedom to use whatever study technique they think is best. The laptop and the handheld computer have become universal tools, thanks to the WLAN.

"The wireless network has functioned well. It was overloaded on one occasion when a lot of us were here at the same time downloading lectures on video, but otherwise it has worked perfectly," relates Helena.

Mobility provides possibilities

Nima Samadi is a trained computer engineer who wants to pursue more advanced studies in mobile informatics. Like his coursemate

Helena Fabersjö, he finds the program stimulating and enjoyable. He thinks that mobility and the possibilities opened up by WLAN are exciting. His portable computer has become a tool for use both at the university and at home.

"I don't use my stationary computer any more. When I come home, I plug the broadband lead into my laptop. At home I have ADSL with a capacity of more than 500 kbit/s. The wireless network has a capacity of 11 mbit/s, which is much faster," says Nima Samadi.

The students at the IT University are agreed that wireless is best, but they still need to plug in a lead occasionally to have enough power for a long study session.

"Until technology permits the wireless transmission of power, we will just have to put up with the fact that we will still need to plug in now and then," concludes Victoria Nilsson.

Jesper Mott

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Views on WLAN are made clear

At Ericsson, we will support the standards sought by the market, says research manager Håkan Eriksson, in reference to the recent debate about which WLAN standard should apply in the future.

► Wireless local data networks – Wireless LAN or WLAN – are a highly current issue. This applies to both the application that rids offices of cables while providing the same rapid data transfer speeds, and the application that provides local WLAN connections from such places as airports and conference centers.

To some extent, the discussion has focused on security – it has been said that anyone can listen in to information transmitted via a WLAN. There has also been discussion about

which WLAN standard should win, Europe's HiperLAN or the American 802.11. The answer to the matter of security was provided in the previous issue of *Contact*. For several years, Ericsson has offered a solution involving the proprietary "Guard" node. According to Håkan Eriksson, the answer to the discussion on standards is the following:

"The background to the problem lies in there being two main tracks for WLAN in the 2.4 GHz band. In Europe where the background is one of mobile telecommunications, a standard called HiperLAN was selected. This has been largely promoted by Ericsson, which has primarily focused its efforts on the consumer market. In the US, the IEEE has developed the 802.11



Håkan Eriksson

standard, which has focused on computer and laptop devices.

WLAN is now transferring to the 5 GHz band. HiperLAN will be upgraded to HiperLAN2 and 802.11 to 802.11a, which will then also develop into 802.11e and h.

"Ericsson will offer operators and companies the infrastructure they demand for both the 2.4 and the 5 GHz bands. That is, 802.11b for the 2.4 GHz band and 802.11a for the 5 GHz band, or HiperLAN and HiperLAN2, respectively.

"HiperLAN2 will have better capacity and performance than 802.11a, but when 802.11 develops to the planned e and h generations, it will incorporate details from HiperLAN2, thus becoming comparable with it."

Håkan Eriksson also wants to sort out the matter of WLAN and 3G. It has been suggested from time to time that WLAN will make 3G superfluous.

"This will not be the case. WLAN represents a useful complement to 3G, but will never be able to replace a mobile network with full coverage.

"If we have learned anything from the development of mobile telecommunications, it is that users want to be able to move around and to take services with them anywhere. People do not want to have to go to particular places to be able to obtain a broadband connection for their terminals."

In this respect, WLAN is extremely limited. As a comparison, Håkan Eriksson explains that 10,000 WLAN base stations would be needed to achieve the coverage of a single cell in a UMTS network. It would not be feasible to implement this.

Lars Cederquist

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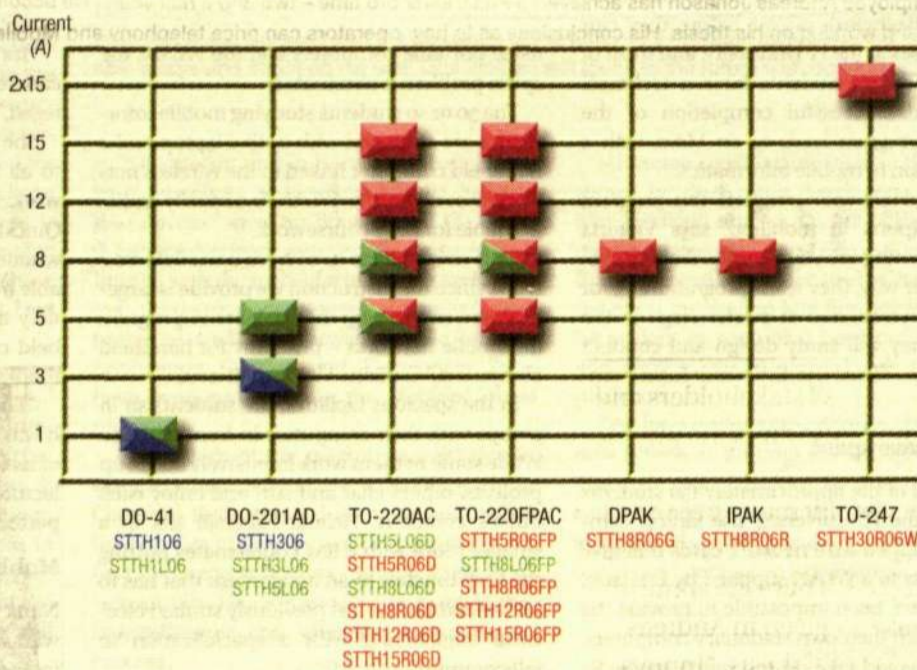
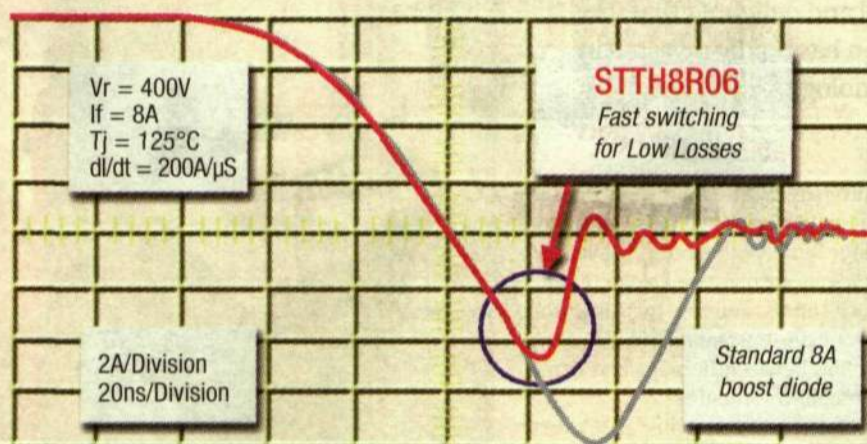
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Ericsson employee Andreas Jonason has achieved a Ph.D. in record time – two and a half years. He accomplished this feat despite having to divide his time between making presentations for customers and working on his thesis. His conclusions as to how operators can price telephony and Mobile Internet services are welcome knowledge in the telecom world. Photo: Ecke Küller

Doctor with right price cure

Profitability for all stakeholders and ongoing modification of the pricing of telephony services are worthwhile goals for operators hoping to thrive in the current and future telephony markets. These are some of the conclusions given in Andreas Jonason's doctoral thesis, "Innovative Pricing."

► Andreas Jonason started working at Ericsson three years ago. He has divided his time between work on his thesis and customer meetings and conferences. The average time required to write a thesis is five years. Andreas Jonason finished in record time: two and a half years. How was this possible?

"When you write a thesis, gathering empirical data is often the part that requires a great deal of time, and in this respect I was given much support by Ericsson. I've also had the great advantage of working closely with the operators. During one period, for example, I worked with NTT DoCoMo in Japan," Andreas Jonason explains.

Contact interviewed him at the Royal Institute of Technology in Stockholm, just after his thesis was approved by the examining committee.

"Reverse compensation" is key

A key part of the thesis was to discover why NTT DoCoMo's i-Mode services have become

so popular in Japan. The Japanese operator's pricing strategy is to generate profitability for all parties – that is, "reverse compensation," as Andreas Jonason prefers to call it.

An example of the "reverse compensation" type of business strategy could be that the content developer Sony delivers a number of mobile telephony services to NTT DoCoMo. Sony earns a small amount of money every time a consumer downloads one of their services to a mobile phone. The operator itself charges for the amount of data sent, per megabit. So, the user indirectly determines what services will be offered, and the content developers are stimulated to develop a wide range of services.

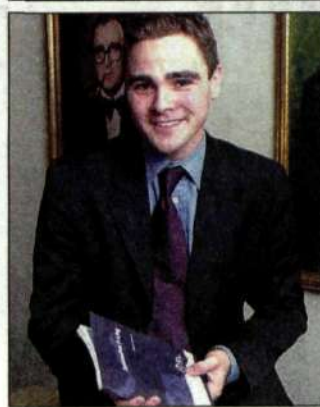
Dangerous pricing

Andreas Jonason has also studied several US operators and their pricing structures. There, the situation is often the reverse: operators charge the content supplier for the privilege of offering its services on the mobile network.

"Here, we're seeing a completely different approach. In the US, many operators regard the mobile phone as a type of television: you pay for exposure time. There is a danger with this type of pricing: end-users have no control over the services offered on the mobile networks. At worst, this can work against operators' interests and prevent the next-generation mobile-telephony services from meeting expectations," Andreas Jonason explains.

He hesitates to make generalizations, however.

"The market is incredibly complex and a service or method of charging that works in



FACTS/ANDREAS JONASON

Name: Andreas Jonason

Latest news: Recently obtained a Ph.D. with a thesis entitled "Innovative Pricing"

Accomplishment: Completed thesis in two and a half years

Age: 26

Started at Ericsson: 1998

Address: Central Stockholm

Degree: Ph.D. in industrial economics

Favorite hobbies: travel; playing floor hockey and badminton; listening to music

A key aspect of innovative pricing is to set one's own prices so as to benefit from customers' success.

one country or during a certain period may not work in another context," he adds.

If the conclusions of the thesis turn out to have real impact, what would this mean for Ericsson?

"For Ericsson and other telecom suppliers, it's important that the prices for systems and products are in line with operators' pricing. To put it simply, Ericsson cannot have products and systems that operators cannot afford," Andreas Jonason explains.

Which companies in the telecom industry will be the most profitable in five years?

"A key aspect of innovative pricing is to set one's own prices so as to benefit from customers' success. For this reason it is extremely important to know how customers – operators, for example – plan to price their services in the future, and to continuously follow up any changes in their pricing strategies," Andreas Jonason concludes, before rushing off to the party to celebrate his successful thesis presentation.

Ulrika Nybäck

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Capacity Booster a good network fix



The secret lies in the wide antenna. "Using adaptive technology, such as dividing the cell into eight parts, we can reduce interference and more than double the capacity of a network," says Johnny Widén of Ericsson Microwave Systems. Photo: Niclas Henningsson

GSM Capacity Booster is Ericsson's solution to overloaded GSM networks. Using adaptive antenna technology, this new base station solution can more than double the capacity of existing networks.

"The introduction of GSM Capacity Booster demonstrates that we are taking care of our GSM customers," says senior project manager Johnny Widén, at Ericsson Microwave Systems.

► At the beginning of September, the world's largest mobile phone operator, Vodafone, announced that the company had revised upwards its forecasts for 2001. Before the end of the year, Vodafone now anticipates that the number of subscribers in the company's networks worldwide will have increased by 20 percent.

Vodafone is not alone in issuing positive forecasts. Despite the fact that 3G is just around the corner, second-generation mobile phone systems continue to grow. Around the world, operators are experiencing a mixture of delight and concern as they see the number of subscribers reaching capacity limits.

The timing is therefore right for Ericsson's launch of its GSM Capacity Booster – a base station solution that is used to increase the capacity of existing GSM networks.

The GSM Capacity Booster, otherwise known as RBS 2205, consists of a base station equipped with advanced radio and signal processing devices and a multilobe antenna – an adaptive antenna developed by Ericsson Microwave Systems in Mölndal.

It is the adaptive ability to direct antenna signals in specific directions that is at the core of this new concept.

New methods required

The most common way to increase the capacity of existing mobile networks is to divide large cells into smaller ones. With more cells, a greater number of calls can be administered simultaneously.

There are, however, limits to the number of times cells can be divided up. It is also expensive to find new sites and install new base stations. Moreover, excessive interference can result from adjacent cells operating on the same frequencies.

This is where GSM Capacity Booster comes into the picture. Its adaptive antenna divides cells up into eight lobes, transmitting signals only to the area where the mobile phone is located. While it monitors a broad area, it only transmits across a narrow range. Unlike an ordinary base station, which transmits potentially disruptive signals



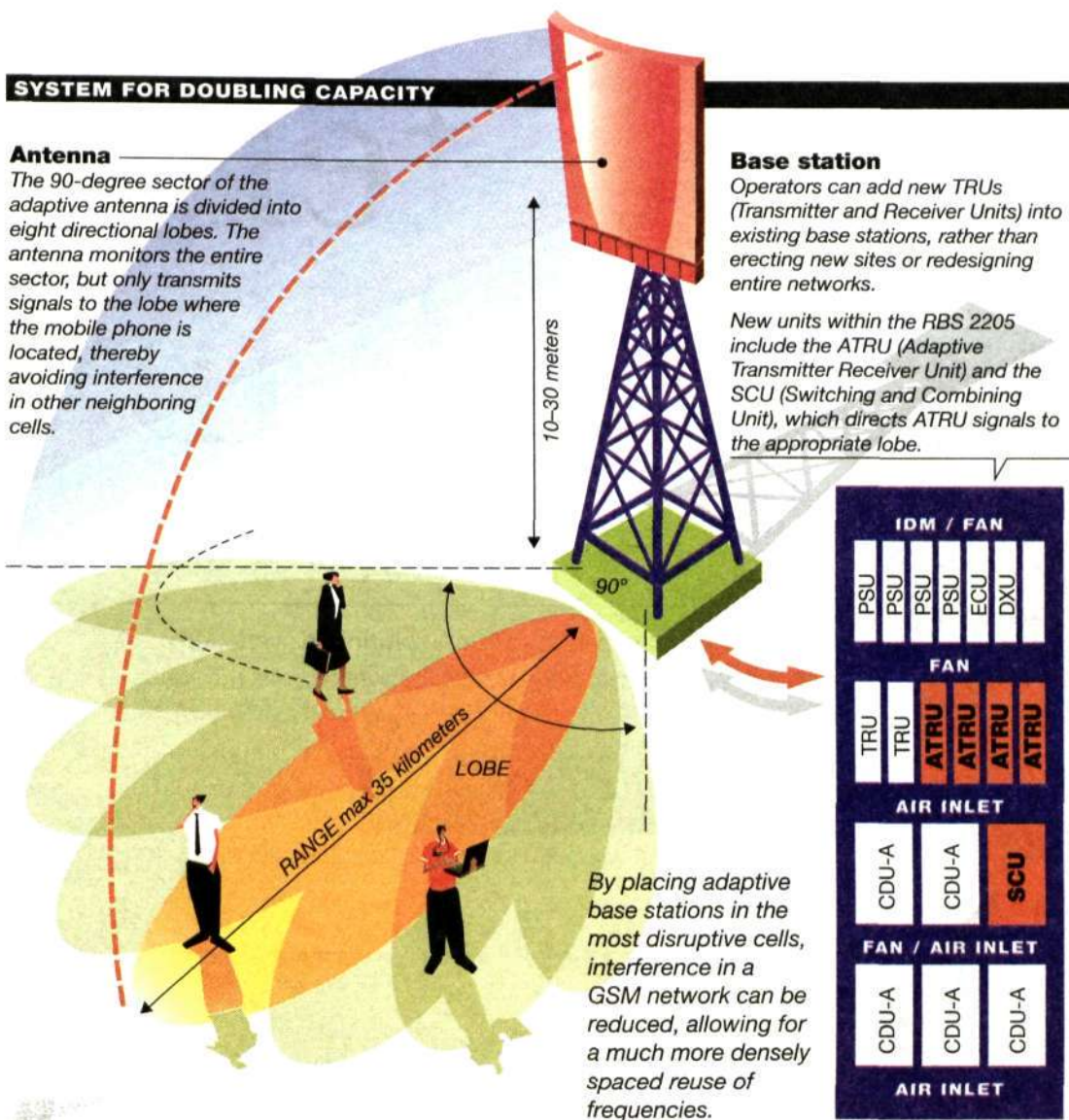
Louise Cederlund, software project manager for the new RBS 2205 base station, with the new adaptive transmitter-receiver unit, ATRU. Photo: Ecke Küller

across a 90-degree sector, the RBS 2205 transmits only within a narrow range. Since all base stations constantly alternate among different frequencies, adjacent cells are almost never subjected to interference.

Doubles capacity

When operators choose to use this system in areas that are especially subject to interference, fantastic results can be achieved using minimal resources. Field tests have demonstrated that using the GSM Capacity Booster solution in ten percent of a network's cells can increase total capacity in that network by up to one hundred percent.

The advantage of this new solution is that existing base stations are replaced using the RBS 2205, minimizing installation costs for operators. No new cells need to be built. It is also possible for operators to install several TRUs (transmitter and receiver units) in



Graphics: Martin Gradén

neighboring cells, in order to increase network capacity.

"The difficulty with the software has been to develop lobe selection algorithms that can keep track of mobile phone users and know which lobe they are currently in," says Louise Cederlund, project manager for the software used in the RBS 2205.

Successful collaboration

GSM Capacity Booster was developed at several Ericsson locations in Sweden (Mölnådal, Lysekil, Kista, Skellefteå, Luleå) as well as Nuremberg, Germany. The basic elements of the product were developed in close collaboration between German operator D2/Vodafone (formerly Mannesmann Mobilfunk) and Ericsson Research in Kista.

Throughout the development process, engineers in Mölnådal received measurement data from field tests in their German partner's network. An unusual arrangement with a very successful result, according to Johnny Widén.

"The ability to measure real data has enabled us to be very precise in our development efforts. We know what the customer needs and know that our product will deliver what we promise."

In addition to the collaboration with

FACTS/NETWORK PLANNING

Adding a GSM Capacity Booster changes an operator's network architecture. In order to facilitate network planning, the LMD unit of Ericsson in Denmark, located in Copenhagen, has developed a network simulation program that shows how and where the base station solution should be used in order to provide the greatest improvements to an operator's network. The new service is sold together with the system.

D2/Vodafone, the GSM Capacity Booster has already been tested by a dozen or so operators in Europe, the Middle East and Asia. Results have been very good, leading Johnny Widén to be quite confident about the full-scale launch of the GSM Capacity Booster.

"GSM Capacity Booster is a powerful niche product with a natural place in the company's GSM product offerings. Especially since Ericsson is now showing our GSM customers new pathways to the future."

Niclas Henningsson
freelance journalist

Lars Cederquist



More information about Gonzalo Camarillo's book is available at www.amazon.com. His homepage can be found at www.hut.fi/u/gonzalo.

New book demystifies protocol

When Gonzalo Camarillo at Ericsson in Finland noticed how the new IP Multimedia protocol, Session Initiation Protocol (SIP), was growing and becoming increasingly difficult to grasp and comprehend, he decided to write a book about it. It took about a year, including a short break, before the book was ready for publication in September 2001. It is called SIP Demystified.

"Writing the book was the best way of learning all about the subject," says Gonzalo, adding that he did all the work himself, including the writing and the explanatory illustrations.

"In this way, I could have everything exactly as I wanted it."

SIP is an open signaling protocol, which will connect the mobile world with the Internet, and enable the creation of new multimedia services for the new 3G networks in a simple manner. SIP was selected by the collaborative group for 3G - 3GPP - as a standard for IP Multimedia in Release 5, which is scheduled for completion in March 2002. SIP will be to the new services what http has been to the Web, according to the summary of the book.

"I noticed that many people have excellent technical knowledge of SIP, but also that they don't understand why SIP is better than other protocols," says Gonzalo. "You must understand the philosophy behind SIP, in order to efficiently develop new SIP services."

"Traditionally, there have been two competing signaling protocols in the Internet, SIP and H.323. Now it's quite clear that both will be present in the network in the medium term. When it comes to the long term, one never knows, but I believe that SIP is a good candidate to acquire a fairly large portion of the future signaling market."

The book is targeted to a very wide audience, from software engineers to business managers. The first section features an introduction to traditional signaling protocols to help people with a pure datacom background to understand "why SIP is a revolution rather than an evolution of the traditional telecom protocols."

Gonzalo Camarillo has worked at Ericsson since 1998 and, since January 1999, has been employed at the Advanced Signaling Research Laboratory in Jorvas, Finland. In January 2001, he transferred to New York on a one-year contract, where he works closely with SIP's originator, Professor Henning Schulzrinne.


Lars Cederquist

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We value the partnership approach and enjoy an enviable reputation for performance and service. For instance, we provide services in billing, pre-paid, messaging and fraud detection areas for Ericsson.

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Ericsson flag is flying high

► Thanks to Rolf Lindblom's climbing efforts, Ericsson's flag now flies at the top of Kilimanjaro.

"I thought it would be a nice thing to do. It's traditional to put up a flag after a great mountain has been climbed," says Rolf Lindblom.

Of all the men and women who have ever tried, only nine percent have reached the peak of Mount Kilimanjaro, the highest mountain in Africa. The rest have been forced to turn back due to high altitude sickness.

"Sure, it was difficult at times to continue the climb in such thin air. On several occasions, I felt like I was at least 80 years old. But it was a fantastic feeling when we reached the top," says Rolf Lindblom, who works for Ericsson in Bahrain as manager of regional support for the Gulf markets.



Rolf Lindblom and his guide, Tumsify W. Kessy, rest after reaching the peak of Mount Kilimanjaro.

Photo: Gunnar Lundgren

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Highest marks for magazine

► Ericsson's magazine On – the New World of Communication recently received the highest marks in an survey of customer magazines conducted by Computer Sweden.

"Professional and appealing. It's trendy and really loaded. It feels like 'Wired,'" was the jury's opinion. On is published four times a year for Ericsson's customers around the world.



SimCell lets you play at planning the radio network for a UMTS network.

Pretend to be a UMTS operator

► What is it actually like being a 3G operator? Why not try for yourself. At the LinLab Research and Innovation laboratories in Linköping, Sweden, two students have devoted their diploma project to developing a game that lets you experience the planning and construction of a 3G network while facing tough competition.

SimCell was developed by Johan Königslehner from the Royal Swedish Institute of Technology and Andreas Olsson from the Chalmers Technical University, supervised by Adam Lidvik and Per Magnusson from LinLab. The game can be downloaded from:

© Linlab.ericsson.se/simcell.html

Funny ideas spur creativity



Use smoke signals instead of GSM for communication.

► At Ericsson in Belgium, suggestions from employees on how the company can save money are encouraged. An employee who submits a really good idea can win a dinner for two. To further encourage creativity, the worst suggestions imaginable are presented on the cost savings website.

"Don't be afraid to share your suggestions. Your bright ideas will sound completely brilliant, compared with these worthless suggestions," are the words of encouragement on the site's start page. The bad ideas, however, were not submitted by employees. Instead, they were created by the information personnel who are responsible for the suggestion box.

Read more savings suggestions, both good and bad, at:

© belgium.ebr.ericsson.se/ebc_corporate/ideabox/ideabox.html



Use all (six) sides of a sheet of paper when printing. In this way, paper costs can be reduced by 80 percent.



Find ways of reducing the number of paper print outs. Print your Powerpoint presentations on cloth and re-use them as curtains, thus resulting in a double savings.



Generate electricity for your own PC by installing pedals under your desk.



Let visitors pay for coffee, water and the chair that they use at meetings.



Use just one language within Ericsson, preferably Latin, since it is the source of so many languages.

Illustration: Björn Hägglund

NEW ASSIGNMENTS

Kumar Balachandran has been designated an expert in the area of wireless communication networks.

Rajaram

Ramesh has been designated expert in the area of wireless communication systems.



Karl Nolnar has been designated expert in the area of array processing and interference suppression algorithms.

Greg Bottomley has been designated expert in the area of wireless receiver algorithms.



All four work in the US at Ericsson's research and development center in Triangle Park, North Carolina.

Valter D'Avino has been appointed head of the Global Customer Unit Telecom Italia from October 22. Massimo Gentili will continue as head of Market Unit Italy and Country Manager for Italy.

ERIC & SON





Erik Glimtoft has worked at Ericsson for almost 17 years and has spent most of that time abroad. He has not only established friendships around the world but also a network of contacts, which has been extremely valuable in his work. Now he works in Taiwan.

Photo: Shing-Ting Huang

The third generation

Erik Glimtoft is truly a third-generation Ericsson employee. He has also worked on three generations of Ericsson mobile systems, first NMT, then GSM and now UMTS. Furthermore, he has spent nearly all of this time abroad.

► As early as 1922, Erik's grandfather, Adde Bergman began work at what was then LM Ericsson. When he retired in 1975, he had spent nearly all of his working life at Ericsson and had spent more than 30 years in countries such as Iran, Afghanistan, Lebanon and Tunisia.

Adde Bergman began as an errand boy and general assistant at the age of 14, but soon advanced to become an apprentice at various departments. He improved his knowledge of engineering by attending evening classes. In 1936, he was given his first foreign posting, in what was then Persia. From there, he moved on to Afghanistan, but when the family was to return to Sweden, war broke out and they had to remain in Tehran for seven years. For his grandson, Erik Glimtoft, employment at Ericsson began with a summer job in Saudi Arabia in

1984. This involved installation work on the large order for an NMT 450 system that Ericsson had been awarded.

"I was a 'gopher' and helped out doing all sorts of things. My family was staying at Ericsson's camp in Saudi Arabia because my dad was working for Ericsson – and still does. His job has meant that we have lived abroad more than we have lived in Sweden," he explains.

Erik Glimtoft has followed in the footsteps of his father and grandfather by working for Ericsson abroad. During the almost 17 years he has been employed at the company, he has worked nearly three in Sweden.

"I probably had working in foreign countries in my blood from a very early age," he laughs.

Mobile telecommunications has been the area, which has held Erik Glimtoft's interest.

After NMT in Saudi Arabia, he moved on to AXE and analog mobile telecommunications in the UK, China, Algeria and Mexico, as well as other countries. Following that came GSM in countries such as Germany, Switzerland and Malaysia. He is now working with 3G as senior project manager for new customer accounts in Taiwan.

"Because I have worked with installation and making systems operational, I have always had close contacts with customers," he explains.

Over the years, Erik Glimtoft has not only established friendships around the world but also a fantastic network of contacts, which has been extremely valuable in his work.

He does not view the probability of his working at Ericsson until his retirement as at all unlikely.

"Each time I move to a new country, it gives me a kick. It's not only the country and my colleagues that are new but also the customers, which means that the job never gets boring."

Gunilla Tamm
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CHRONICLE



Lars-Göran Hedin
corporate editor

Lost without it!

► My first mobile telephone was a black box with a receiver. It weighed five or six kilos and held the charge for about 20 minutes. But it could be recharged via my car battery, if the engine was running, of course. To leave the car parked overnight with the mobile phone connected to the cigarette lighter outlet always created some hard work in the form of pushing the car to get it started. The good old days were not exactly the Stone Age, but it was as long ago as the late 1980s.

The mobile phone I have today is so small it disappears in my pocket. It requires no maintenance whatsoever for several days at a stretch. This creates new problems, however. One of the more serious problems, for me, is remembering where I put it the last time I used it. As we grow older, as I'm sure some of you know, we have a tendency to forget things. And the mobile phone is no exception.

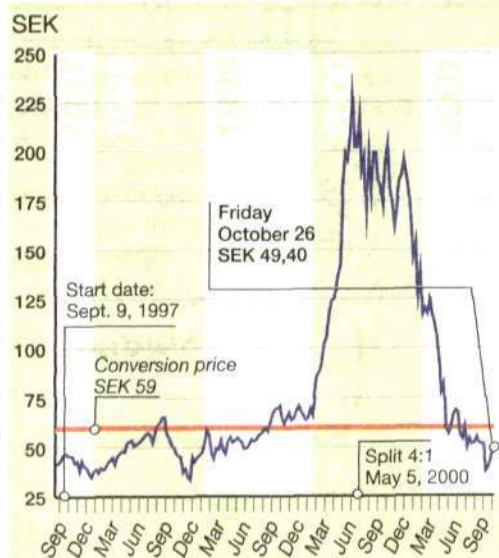
Fortunately, I have become so dependent on my mobile that I realize it's missing after only a few minutes. I quickly start running around the house looking for my "security blanket." I even call it and wait anxiously until I hear it ringing or feel it vibrating. And then, hey presto, there it is!

Last summer when my family and I went on vacation by train. I nestled into my seat with my mobile phone on the table next to me. I said hello to a friend from the office, who by some strange coincidence, was on the same morning train. The train was slightly behind schedule and when we arrived at the junction in Alvesta, we had to rush to catch the Copenhagen train. When we finally made it, I realized, of course, that I had left my mobile phone on the other train. What to do?

Using my wife's mobile, I called Ericsson's switchboard and asked the operator to connect me to the friend from work who I met earlier – to his mobile, I mean – and I was speaking to him within a few seconds. I asked: Is my mobile phone still next to the seat where I was sitting a little while ago? Yes it is, he replied, and this day was saved.

I am now waiting impatiently for Sony Ericsson to develop the idiot-proof mobile telephone, a phone that can provide the security I want and need. A telephone that will not allow me to leave it all alone in a train compartment, restaurant, or barbershop. I have heard the positioning function in GSM systems today is so precise that it works with a margin of just a few meters. So if I could get a small transmitter implanted in my head, the system would know when the distance between me and my mobile phone is more than, let's say, 10 meters. That's about the limit of my tolerance for being away from my precious mobile phone.

THE ERICSSON B SHARE



For additional information, access the website:
<http://inside.ericsson.se/convertibles>