contact

Kurt Hellström, Ericsson's President, proudly presents Ericsson's positive third-quarterly report, which triggered an upsurge in the company's share value. More than USD 9 billion was added to Ericsson's market value.

Photo: Claes-Göran Flinck

Report sparks share leap

The release of Ericsson's third-quarterly report on Friday heralded good tidings for both Mobile Systems and shareholders alike. In response to the news of continuing strong sales growth, the company's B-shares rallied by 15 percent, adding SEK 75 billion (more than USD 9 billion) to Ericsson's market value. Ericsson announced a three-month pre-tax profit of SEK 3.65 billion (USD 500 million), a figure much greater than that expected by market analysts.

Most notably, Mobile Systems reported a sales increase of more than 40 percent. The North American market also grew considerably with a high demand for mobile telephone services.

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NEWS

Ericsson stages the future

Ericsson received rave reviews for its stand at the Telecom99 exhibition in Geneva. The new image was demonstrated by the unveiling of the new mp3 player and FM radio, as crowds flocked to Ericsson's stand. **10–13**

Efficiency drive in Germany

Ericsson in Germany has developed a pilot-project within TTC Global, boasting both faster and more accurate deliveries at reduced costs. Ericsson in Gävle, Sweden, is in full collaboration. **21**

Scandinavia flies high

Sweden and Finland are Europe's foremost IT countries. But why is there such a concentration of mobiles and computers there? Contact examines a background of industrial success. **18–20**

Green issues gather pace

A considerable amount of environmental work is done within Ericsson, but no broad perspective exists. Martin Davies has been appointed to spread the new environmental management system. **23**
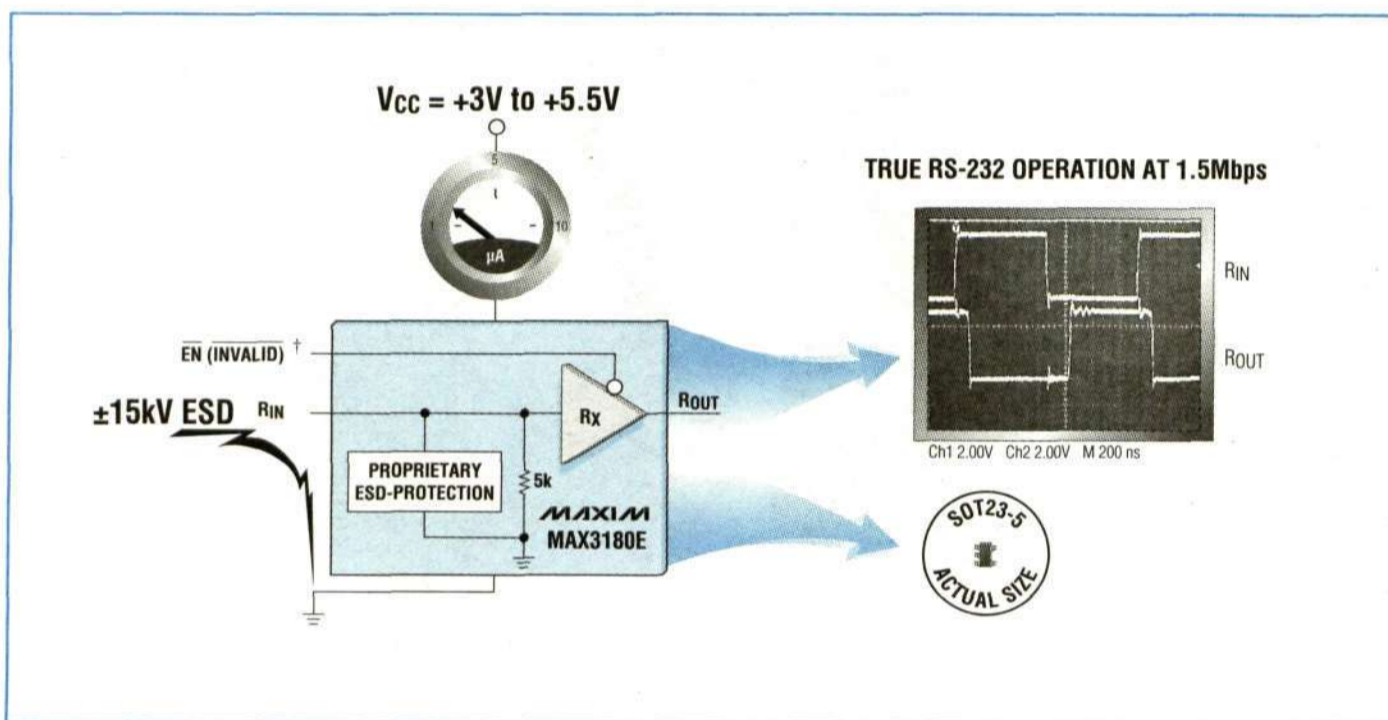
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POWER OF MOBILITY

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THE PUBLICATION FOR ERICSSON EMPLOYEES ALL OVER THE WORLD

ERICSSON

Third-quarterly report shows strong sales growth

Ericsson's third-quarterly report was released last Friday, showing continued strong sales growth. Most notably, Mobile Systems showed an increase of more than 40 percent. The report also heralds a positive reception for the new product portfolio in Consumer Products.

Ericsson's order intake increased for the period by 13 percent, and for the third quarter by 36 percent; mainly in relation to the U.S., Japanese and European markets. Negative results in Consumer Products and the Enterprise Solutions segment were offset by the continued strong performance of Mobile Systems.

Ericsson increased net sales by 13 percent year to date and by 14 percent compared with the third quarter of last year. Strong sales growth in North America and Europe from the Network Operators and Service Providers business segment were the main contributors. Sales in the third quarter are in line with the normal seasonality of Ericsson's business and declined 3 percent compared with the previous quarter.

Overall gross margin declined to 41.1 (43.2) percent. Gross margins for Mobile Systems and Wireline Systems remained robust. The decline in overall gross margins from last year is mainly a consequence of significantly lower margins for Consumer Products.

Operating expenses for the nine months were SEK m. 50,659, or 36 percent of sales, an increase of 21 percent over last year. For the third quarter, operating expenses were SEK m. 16,164 or 33 percent of sales. Although the rate of increase has been reduced some in the third quarter, the level of selling, general and administration expenses is still of great concern and subject to reduction efforts.

Expenses for R&D year to date were SEK 23,250 m., which remains around 16 percent of sales. The R&D expenses include increased efforts in areas such as 3G mobile systems, datacom technologies (IP and ATM) and new mobile phones.

Market development

Ericsson showed strong sales growth of 42 percent within the market area North America and 16 percent within Europe, Middle East and Africa (EMEA). Sales in Latin America increased by 9 percent, while sales in Asia Pacific decreased by 2 percent.

Strong sales increases were generated in Japan, Taiwan and India. These increases were more than offset by lower sales in China, Singapore, Malaysia, Thailand and the Philippines. However, during the quarter, there was a moderate resurgence of new contracts from operators within China and Thailand, totalling more than SEK m. 1,200. The slow down in China, which is expected to be temporary, is a
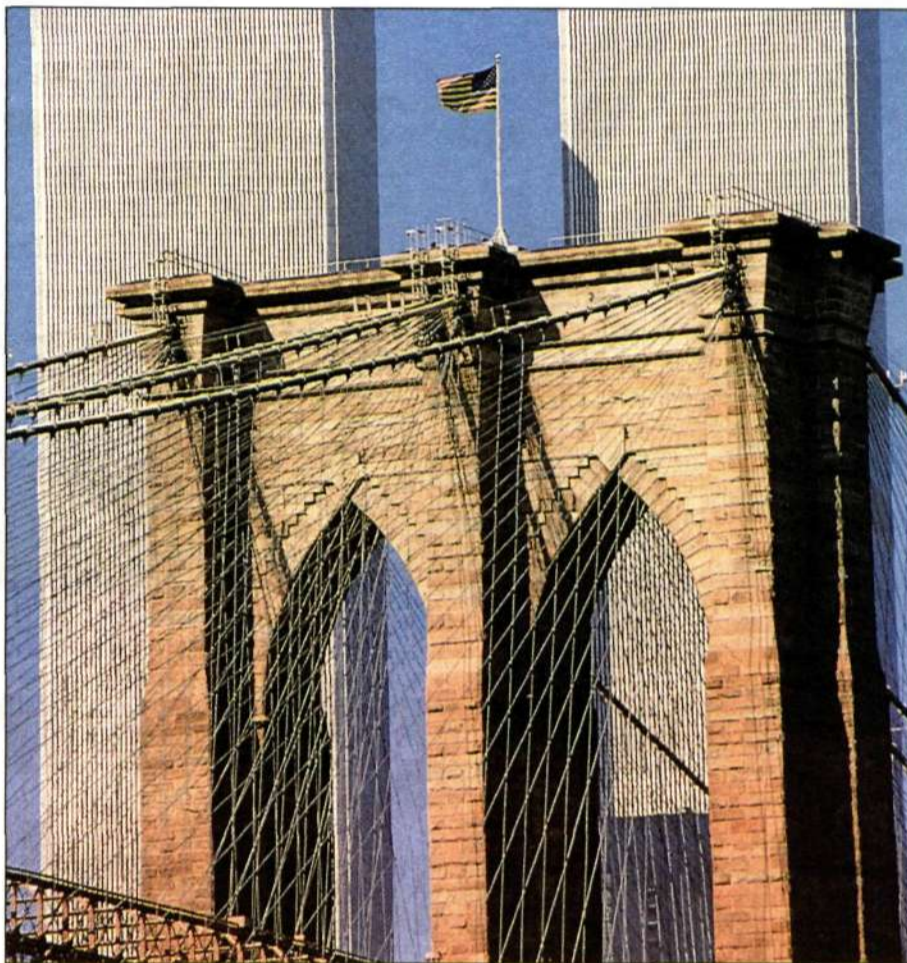
A massive sales growth of 42 percent in market area North America aided the overall sales increase, detailed in the third-quarterly report. Photo: Lars Åström

result of regulatory uncertainty and restructuring of Chinese operators. For the full year, sales are likely to be lower than last year. The financial instability in the region still affects sales in many markets.

Sales growth in North America remains extraordinary as a result of very strong demand for mobile telephone services. Due to the very successful introduction of "One Rate" plans, subscriber growth in the U.S. has started to match that of other markets.

Sales growth

Sales growth in Network Operators and Service Providers continued to show a very strong development, especially regarding Mobile Systems during the nine-month period and in particular in North America. Operating margin also continued to improve. The segment now represents 69 percent of Ericsson's total turnover.

Sales grew by 23 percent to SEK m. 99,208 (80,876) during the period. Operating margin was 12 (11) percent for the period. For the third quarter, operating margin was 16 percent (13).

Sales of Mobile Systems increased by 43 percent to SEK 72 billion and account for 73 percent of the segment's total sales. Ericsson be-

lieves a sales growth for Mobile Systems in the 30 to 35 percent range for the full year to be achievable. The underlying development of the operating margin continues to be positive, with gross margins remaining stable for Mobile Systems.

The results of Wireline Systems continued to improve and were positive for the period. Sales decreased by 4 percent. Operating income was SEK m. 481 (223) for the nine-month period. The improvement of operating income during the nine-month period demonstrates that the turn around of the Wireline business is continuing in the right direction.

Furthermore, new business is developing from Ericsson's next generation network and network migration solutions, with substantial orders from several customers such as BT of the U.K. Dutch operator KPN and Diginet of Latin America. These projects underline the smooth migration path that Ericsson offers operators for next generation networks. Ericsson has also signed its first wireless broadband (LMDS) contract and is participating in important field trials with NEXTLINK in the U.S.

Enterprise Solutions reported a 21 percent increase in sales. Excluding internal sales, sales

growth was around 8 percent compared with last year. The loss of SEK m. -289 (4) was mainly related to development expenses involving Wireless Office. The external sales amounted to SEK m. 7,106 for the period and SEK m. 2,052 in the third quarter.

Consumer Products

Consumer Products reported sales of SEK m. 29,797 (32,701) and generated a loss of SEK m. -415 (3,317). Sales were down 9 percent compared to last year and down 6 percent from the second quarter. Unit volume increased 29 percent over last year to 21 million units. However, the ramp-up of production for the new product portfolio has been slower than planned, especially for the high-volume units like A1018, T10 and the T18 for the TDMA standard. This has affected sales and profitability negatively, even though the customer demand for the new models is very strong. A recovery in terms of production capacity is expected in time for the segment to meet fourth quarter objectives.

As of mid-October, production of the T28 was at the targeted rate. Capacity to fulfil customer demand will not be achieved until the first quarter of next year.

Performance improvement

The actions were described in connection with the six months report. The management has focused on operational performance, including issues such as time to market, cost savings, improved cash flow and the restructuring program.

The restructuring program is continuously updated and will now affect 16,000 employees during 1999/2000, around 40 percent via outsourcing and the rest through job-rotation, divestitures and lay-offs. The estimated cost savings have increased to SEK m. 3,700 on an annual basis from 2001. Costs for the restructuring program amount to SEK m. 1,500 year to date, of which SEK m. 900 during the third quarter. Benefits amounted to SEK m. 300 giving a net cost of SEK m. 1,200 for the period.

In order to improve return on capital, Ericsson has decided to sell its real estate assets around the world. Additional actions will be taken on an ongoing basis to reduce capital employed.

Outlook for 1999

For the full year 1999, we believe that sales growth in a range of 12 to 15 percent is possible. This is significantly better than the previous expectation of around 10 percent. Furthermore, pre-tax earnings in the range of SEK m. 15,000 to SEK m. 16,000 should be achievable.

Lars Ramqvist, Chairman and CEO
Kurt Hellström, President

Edited by: Nils Sundström/Matthew Tapsell

DID YOU KNOW THAT...

Ericsson is Number One in infrastructure
The value of total sales of mobile infrastructure in 1998 was USD 36 billion.

Percentage of sales

Others 21
Ericsson 30
Nortel 10
Nokia 11
Lucent 12
Motorola 16
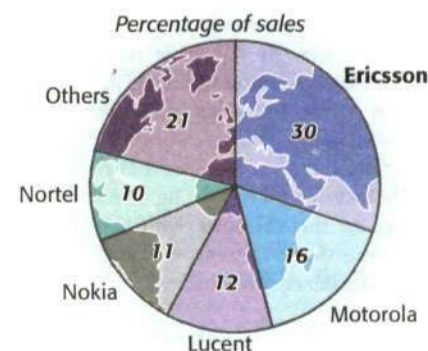
Chatboard unveiled in Italy

Ericsson is strengthening its position among young people in Italy – a country with over twenty million mobile phone users, making it one of the world's biggest mobile phone markets. At the Milan IT trade show, the European launch of Ericsson's Chatboard attracted lots of attention.

Ericsson's new mini keyboard, Chatboard, had previously only been shown in Hong Kong a couple of weeks earlier, when it was unveiled to European audiences at Milan's "SMAU" IT trade show at the end of September. Many people gathered in Ericsson's display area in order to get a closer look at the tiny keyboard, which can be used to send SMS messages and e-mail.

Held in Milan, "SMAU", with its 490,000 visitors and 2,800 exhibitors, is the second largest IT trade show in Europe, second only to CeBIT in Germany.

Young enthusiasts

More than anyone else, it was the younger visitors who were the most enthusiastic about Chatboard. Since Italy is already experiencing SMS fever, the new keyboard is expected to be a big hit in the Italian market.

Young Italians also liked the new hands-free accessory that makes it possible to listen to stereo FM radio between calls – several of them were standing in the display area, dancing to music while testing the accessory.

"We're realizing now that we've taken on a completely different position than our competitors among young customers, not only in advertising, but also in terms of products," says Benedetto Condreas, marketing manager for Ericsson Telecomunicazioni.

He is also very satisfied with the company's successes in Italy so far this year.

"Despite the fact that we have launched relatively few new products compared with our competitors, we've increased our market share and, according to the GFK marketing institute, we're now the second biggest in Italy."

Motorola biggest in Italy

Unlike many other countries, Motorola is the biggest brand in Italy. They were the first to launch the really small mobile phones that Italians are particularly enamoured with, but Motorola's market share is now dropping sharply.

"We've also been successful in introducing our own service points in mobile phone stores. The first ones were established about a month ago, and already there are 42 located in various stores. At the same time, many store owners are making inquiries about becoming exclusive Ericsson dealers who only work with our mobile phones. Since we're currently focusing on improving direct service to the customer with this campaign, that is very encouraging," concludes Benedetto Condreas.

Mats Lewan

With a barcode reader, information on a specific product can be gleaned via the Internet. This business concept has been developed by a new company, ConnectThings.

Scanning the Internet for product info

Ericsson and the venture capital company IT Provider have jointly formed a new Internet company. The business concept for the new company – ConnectThings – is to provide a service that simplifies searching for product information on the Internet.

At the world premiere last week, Electrolux, AstraZeneca and Sony Music Sweden participated and showed various applications of the new service. The basic idea is to link all types of products, which are provided with a unique barcode, to information on the Net. By scanning the barcode, the user is able to connect to the product's website in a matter of seconds, without having to type any complicated URLs.

"This service creates a simplified and more precise way of working with the Internet. It will make it easier for people to find the information they're looking for regarding a specific product," says Gösta Tyrefors, President of ConnectThings.

The unique aspect of this solution, which was created by Ericsson Medialab in Stockholm, is the design of an enormous database, known as a distributed database, which can handle several billion products quickly and efficiently.

Most of today's products already have an individual barcode, based on guidelines developed by barcode organizations in Europe and the U.S. ConnectThings' business concept is to set up URLs that link the companies' various products with the correct web pages. The companies that join ConnectThings will pay an annual fee to have their product links included in the database.

Several different services

The pharmaceuticals company Astra Zeneca and the white goods' manufacturer Electrolux have already joined the new service. This will create entirely new opportunities for interactivity between companies and their customers.

For example, the user will be able to scan the barcode on his OTC medicine and receive information about it. Electrolux itself is testing a service that allows service technicians to easily access the correct manual for a specific product. Sony Music Sweden is also testing the service, in order to enable customers to listen to samples of albums via the Net.

"Barcode scanners for consumers will be released to the market in the first quarter of 2000. The scanner is linked to a serial port on a computer and the price will be less than SEK 200," says Gösta Tyrefors.

Innovative solution

It is already possible to use the new service to receive information about companies that have already joined. For example, the user can find out about all of AstraZeneca's OTC pharmaceuticals, simply by accessing the www.connectthings.com site and typing in the figures given next to the product's barcode.

Gösta Tyrefors

ConnectThings' business concept was originally a business cell supported by the Ericsson Business Innovation unit, whose task is to develop new core operations for the company.

Concept can be pursued

"Good ideas that are not potential core operations must also be utilized and commercialized. By spinning them off to a new company, the business concept can be pursued through a more independent organization, where Ericsson is a joint owner. Such operations also support our operators, since they generate more traffic via computer networks," says Anders Friman, head of Ericsson Business Communication.

ConnectThings currently has ten employees based in Stockholm. During the autumn, the company will also open an office in the U.S.

Nils Sundström
nils.sundström@lme.ericsson.se

www.connectthings.com
bi.ericsson.se

Ellemtel shuts down its operations

A decision was made this past summer to completely shut down Ellemtel, or Ellemtels Utvecklings AB as it is formally known.

Established in 1996, the company is owned fifty-fifty by Swedish Telia and Ericsson. The name Ellemtel goes back further than that, however, but all previous operations were transferred to the parent company when the present Ellemtel was formed.

The company has been providing communications services for telephony, Internet and multimedia applications since 1996.

"At the time the decision to shut down was made, there were 42 employees left at the company," says Lars-Erik Eriksson, the president of Ellemtel.

Since the company was not part of either Telia or Ericsson, employees were not automatically transferred to those companies, but will have to apply for new positions, either within the owner companies or with outside firms.

"Most of the people working at Ellemtel came from Telia and Ericsson believing that they were still working for the same company and are therefore disappointed that they are being let go. They have been given notice of redundancy," says Lars-Erik Eriksson.

Employees at Ellemtel are, however, receiving assistance from Ericsson Career Consulting as well as Telia's equivalent organization.

Patrik Lindén
patrik.linden@lme.ericsson.se

Successful relaunch of NMT 450 in Romania

By addressing a selected segment of the market, focusing on service and low call charges, the Romanian mobile phone operator Telemobil has expanded its NMT 450 system by over 9,000 subscribers in three months. The company expects to have 45,000 subscribers by the end of the year.

"Romania has an NMT 450 system that was put into operation in 1992. When the operator Telemobil came under new ownership, the network which now operates under the name SunTel, had approximately 8,000 subscribers, provided poor service and had a future that looked bleak," according to Ovidiu Iosif, of Ericsson in Romania, who is Key Account Manager for SunTel.

"The market was skeptical when we presented our plan for investing in the NMT 450 system, while Ericsson, on the other hand, believed in our business plan," says Diwaker Singh, president of Telemobil. "Since we couldn't compete with the country's existing GSM system because of the huge investments made in them, we had to find our own niche."

Targeting small companies

Diwaker Singh explains that the market niche that SunTel is focusing on is "middle and lower-end companies" which, in this case, means the self-employed and other small businesses. When the "new" NMT system was launched in May, it was done so on a modest scale, with personal contacts as the primary tool.

Until then, SunTel had been presented as the company that of-
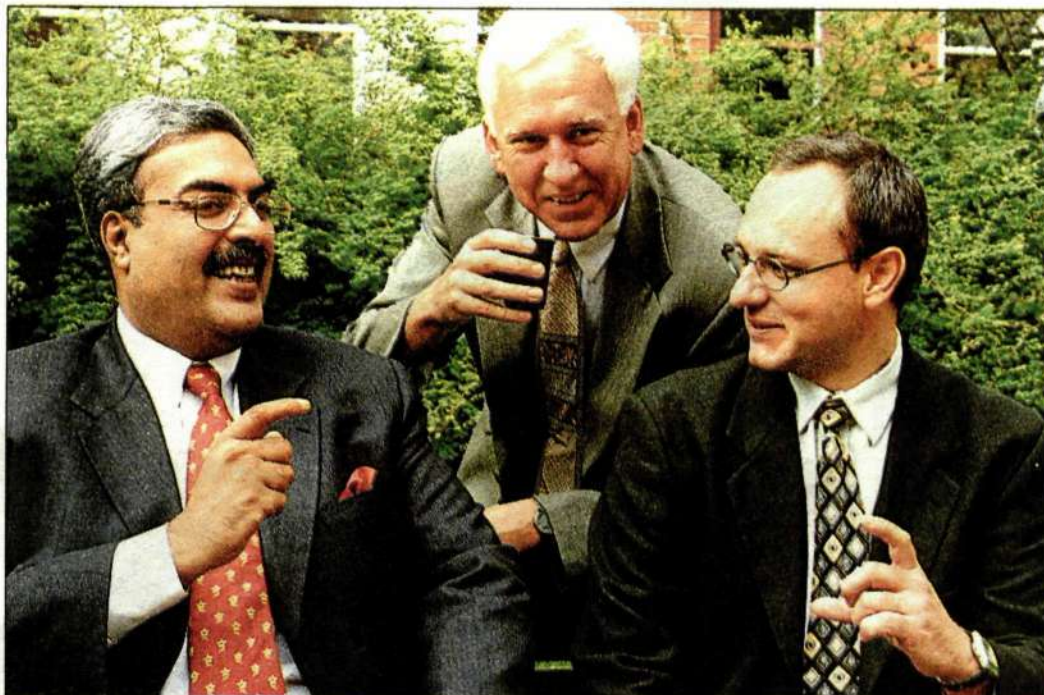
On the left, Diwaker Singh, president of Telemobil, is extremely satisfied with the development of the NMT 450 system in Romania. In the middle is Thomas Lundin, head of Ericsson in Romania and, next to him, Ovidiu Iosif, Ericsson's Key Account Manager for SunTel.   Photo: Lars Åström

fered the most economical mobile phone in Romania. The company has also invested in LEMS terminals, and the technology that goes along with these phones, from Tellit, a terminal manufacturer based in the U.K. One aspect of the company's focus on service is that malfunctioning phones can immediately be exchanged for new ones at the company's sales offices.

As previously mentioned, service is a key marketing factor, and SunTel is the first mobile phone operator in Romania to offer 24-hour service. When Telemobil acquired the NMT system, it made technical investments to improve, among other functions, the voice quality. In addition to Bucharest,

the company has invested in two other cities.

SunTel lives up to its promise of being Romania's most economical mobile phone service with the help of charges that are 30-40 percent lower than those of GSM.

30-second intervals

While GSM subscribers pay by minute, NMT subscribers are billed in 30-second intervals. SunTel subscribers also have the ability to bank their unused minutes.

"In May, when we started up, the average talktime was 4.5 minutes per day – by August that figure had increased to 6 minutes," says Diwaker Singh.

He believes that NMT 450 will continue to be successful in Romania and plans to increase capacity in Bucharest and launch the services in the rest of the country in the near future. Singh expects the system to have 45,000 subscribers by the end of 1999. He is also convinced that the NMT 450 system is far from being obsolete. On the contrary, a large market is waiting, first for NMT 450, and then later when the system is digitized to become GSM 400 – a system which will have all the advantages of digital technology and the wide coverage of 400 band.

Gunilla Tamm
gunilla.tamm@lme.ericsson.se

Networks growing fast in Japan

The rapid increase in the number of mobile telephone users in Japan continues. Ericsson's customer, J-Phone, now has over six million subscribers to its network, which covers the entire country.

Ericsson has six customers in Japan who make up the J-Phone business group, which recently changed its name from Digital Phone Group/Digital Tu-Ka Group.

"Our PDC operations continue to go very well, with stable subscriber growth at J-Phone. We expect growth to continue, adding an additional one million subscribers within the next five to six months," says Ingemar Blomqvist, head of PDC Systems.

Even though voice is still the most important aspect of mobile phones, Japanese subscribers are becoming more interested in other

applications. Ericsson's customers were the first to offer SMS, Short Messaging Service, in Japan. Applications such as SkyMelody and SkyWeb have been created for that service. In the past, price was the most important competitive factor, but now it is the ability to offer different applications that plays the biggest role in attracting subscribers.

Currently, there are 45 million mobile phone subscribers in Japan. Of these, 57 percent are connected to Japan's – and the world's – biggest mobile phone operator, NTT DoCoMo. It is also one of Ericsson's customers, with the supplies of MDE base stations.

Recently, Vodafone Airtouch increased its ownership of J-Phone through its acquisition of Cable & Wireless's share of the business group.

Gunilla Tamm

NMT operators prefer GSM 400

A majority of NMT operators are recommending GSM 400 as the technology to use in digitizing NMT 450. That became clear during a meeting with the NMT operators' organization NMT MoU, held in St. Petersburg, Russia, at the beginning of October.

During the meeting, technical evaluations of the three proposed digital versions of NMT were presented. Both GSM 400 and CDMA 450 fulfill the requirements that operators have for a digitized NMT system and NMT MoU would like these systems to be developed further for commercial applications. On the other hand, the D-NMT proposal, adapted for a Tetra version, was not approved.

Both of the recommended digital techniques fulfill the various needs of operators, according to NMT MoU. Now it is up to indi-

vidual countries to make a decision on how they want to digitize NMT. A majority of NMT MoU operators recommended GSM 400, however, which has been jointly proposed and specified by Ericsson and Nokia.

Ericsson and Nokia recently demonstrated call connections using a GSM 400 test system at an operators' meeting in Budapest.

"We expect that GSM will be the solution most countries choose when the 450 MHz frequencies are accessible. Lucent and Qualcomm, who have developed CDMA 450, are very aggressive in our markets. They see CDMA 450 not only as an option for the 450 MHz band, but also as a stepping stone towards future deals for third generation mobile systems in Europe," says Olle Ljungfeldt, head of Ericsson's NMT and TACS Systems unit.

Nils Sundström

Global field-testing of GPRS

➤ Ericsson has signed contracts with 45 operators around the globe for delivery of a GPRS test system. GPRS (General Packet Radio Service) is the first step towards third-generation mobile telephony, and enables wireless Internet, among other things.

The system, which will be delivered to operators in North and South America, Asia Pacific and Europe, includes infrastructure, terminals and applications.

Ericsson signed its first GPRS system contract in January 1999.

New contract with China Unicom

➤ Chinese mobile operator China Unicom has hired Ericsson to expand its GSM network in the Sichuan province in a contract valued at SEK 450 million.

The province has over 70 million inhabitants, of which 680,000 will be served when the expansion is complete. Work is scheduled to be completed in February, 2000.

During 1999, Ericsson has signed contracts with China Unicom totaling SEK 1.475 billion.

New stock option program

➤ Ericsson's board has submitted a proposal for a new stock option program for the years 2000 to 2002. It applies to approximately 5,000 employees in the U.S. and an additional 2,000 employees around the world.

During this period, 20 million options will be distributed, the majority of which, 14.3 million, will be issued during the first year. Another 3.8 million will be distributed in 2001 and an equal number the year after.

The approval of shareholders is required in order to implement a stock option program and an extraordinary shareholder meeting has therefore been scheduled for November 4.

BT orders next-generation switches

➤ The U.K. company, BT, has ordered equipment from Ericsson with a total value of USD 180 million.

This is the second part of a major general agreement signed in January of this year for Next Generation Switching (NGS) telephone switches.

They will make BT's U.K. telephone network Europe's first combined broadband/narrowband network with options for voice, Internet, data and multimedia services.

Shandong MCC chooses Ericsson

➤ Shandong MCC, a Chinese mobile operator in the Shandong province, has selected Ericsson to expand its GSM network. The order, valued at SEK 840 million, will expand the system to accommodate 3.8 million subscribers.

The new network will be ready in April 2000.

Shandong MCC has also announced the extension of its network to incorporate 500,000 subscribers, a development which will also involve Ericsson.

Shandong MCC is an offshoot of Shandong Post & Telecommunications Administration, with whom Ericsson has collaborated since 1995.
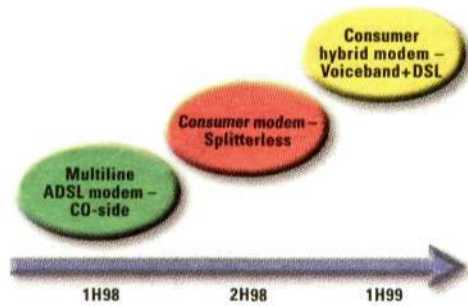
Frank talk on future and outsourcing

When will the reorganizations ever end? Why does our unit need to be outsourced? Do we really need all of these consultants? Those were some of the pointed questions posed to Kurt Hellström when he met with Ericsson's union representatives from EU nations.

Each year, Ericsson's corporate executive team meets with representatives from operations within the EU, for a two-day discussion of current issues. These gatherings have been held for the past five years with this year's meeting being held in Stockholm. Some 30 representatives from the EU countries where Ericsson has operations employing 150 people or more participated, as did Norway, and Croatia which was there as an observer. Most countries usually send union representatives, although they can also send other people who have the employees' trust.

The main subject was, of course, the significant changes that both the telecom industry and Ericsson have been subjected to. President Kurt Hellström first gave an analysis of the market situation and the new organization, and then answered questions.

Essential

José Antonio Fragoso and Maria Carmen Ferreras, of Spain, painted a picture of how a general sense of uncertainty is spreading across Europe. In Spain, which is a key market for Ericsson, additional personnel reductions are being planned, despite the fact those operations there are going well. Kurt replied that while Ericsson is actually growing in Europe, there are also problems and that it is essential to take swift action.

"We need to keep pace with the ever-changing world and will continue to do so. We have no other choice if we are to survive. I consider Ericsson in Spain to be a strong, well-managed company, thanks to its leadership which has speedily taken the necessary measures."

Giuseppe Pavinato, of Italy, brought up the issue of the large

When Ericsson President Kurt Hellström met union representatives from Ericsson companies within the EU, he was asked a number of questions regarding restructuring and outsourcing.　Photo: Matthew Tapsell

number of consultants, despite reductions in other areas.

Kurt acknowledged that Ericsson has rules that recommend avoiding hiring consultants who work long hours without being employees whenever possible, but cited the fact that the company lacks expertise in some areas, which must be acquired at any cost.

Currently, there is a shortage of skilled workers in the labor market, so it is important to locate operations and research facilities in places where the expertise can be found. Take Milan, for example, where the necessary skilled labor was available for work on the MINI-LINK project. "Our problem now isn't finding tasks for our personnel, but rather finding personnel to do the work that needs to be done," explains Britt Reigo, Senior Vice President, Corporate Human Resources.

Mac Hawes and Lee Turner, of the U.K, asked questions pertaining to core operations and outsourcing. They were told that Ericsson is not outsourcing research, but that people need to be prepared to collaborate more with others in that area.

Utilize resources

It is important to be able to financially motivate the advantages of various outsourcing measures. But that is not always so easy, since much of what is being done is for the future and not to meet current needs.

"Why outsource an operation that has talented employees who know Ericsson, when Ericsson simultaneously has a need for skilled workers?" asked Lee Turner. "Why not utilize existing resources?"

It is Kurt Hellström's contention that the problem is more complex than that. The knowledge required is often so specialized that universities and university colleges need to be

scoured for the appropriate people.

Other questions discussed included Ericsson's "tarnished" image and rumors that Enterprise will be sold, a rumor that was dismissed as baseless.

"Aside from discussing factual matters, the most important aspect of this gathering was to enable representatives to meet the new executive management team," says Göran Whitlock, chairman of the working committee, who has been involved since the beginning in 1995.

"This is the biggest and really only true source of information on the European level. The gathering has now found its format and the participants have got to know each other. We try to get the elected representatives to stay for a few years in order to have some continuity in our work."

Lars Cederquist
lars.cederquist@lme.ericsson.se

Clients in Brazil calmly face 2000

Ericsson is maintaining continuous contact with its customers all over the world, regarding its planning for the millennium change and the status of its contingency plans. Earlier this autumn, Ericsson gathered together its largest customers in Brazil to inform them of how Ericsson is tackling the problem. Among others in attendance at the meeting were Telefonica, TESS, ATL, Embratel and CTBC.

Customers are satisfied with Ericsson's work and grateful for keeping them informed of Ericsson's efforts surrounding Y2K issues.

"It's essential to maintain contact in order to know what Ericsson is planning," says Wagner Carrijo of CTBC Telecom.

"We're negotiating with all the major suppliers and feel that Ericsson is among the leaders," says Edson José Carluccio of Telefonica.

Ericsson in Brazil wants to maintain close contacts with those who are dependent on having their products function.

"There will be surprises, which is why it's important to do as much as we can in advance, in cooperation with our customers, in order to minimize any eventual consequences," says Timo Aaltonen of Ericsson in Brazil.

"The purpose of the meeting and the whole

millennium project is to reassure our customers that Ericsson can handle any eventual problems that could arise in conjunction with the millennium change," says Eduardo Gosling, Y2K coordinator at Ericsson in Brazil.

Ericsson has been working hard on the millennium issue since 1998. Should something serious occur at the end of the year, it will be much worse than should an ordinary problem occur. Normally, if a problem occurs, one person calls. If something happens in conjunction with the millennium shift, then everyone will be calling at once.

Patrik Lindén
patrik.linden@lme.ericsson.se

DEBATE

Y2K adds to workload

Svante Nagy is one of the many people working on millennium preparations at Ericsson. He questions all the reports that are required of him from every conceivable direction. He believes their numbers are increasing exponentially.

"Questioning Y2K reporting at Ericsson is probably akin to swearing in church, but I still plan to go out on a limb. My experience with millennium preparations, after one year as Y2K coordinator at a development facility with over one hundred employees, is as follows:

IMPLEMENTATION IS GOING WELL. Everyone involved in the practical work has, on the whole, taken the millennium bug quite seriously.

Any hindrances have been effectively eliminated, replaced or corrected. Product tests, specifications, contracts and so forth, have been taken care of in a speedy manner with a high level of priority. After working hard during the winter and spring, we now feel well-prepared for the remaining tasks.

REPORTING INCREASING EXPONENTIALLY. The situation appears to be just the opposite at higher levels within Ericsson. Panic has started during the second half of 1999. It appears to me that many of those who are requesting reports and issuing directives are poorly informed on what the operations look like for the units that they are placing demands on.

Requirements are creeping downwards and spreading through a number of intermediaries in pyramid scheme fashion. At the end of the line, this is causing something known in the military as "firing panic", where everyone is shooting but nobody sees the target! People believe that they have made an effort, but resources have been used carelessly, ending up with very meager results.

MY REGULAR REPORTS (currently five different kinds) are now supposed to be sent to ten different people outside my own unit. Added to that are a growing number of one-time reports for people who are appearing right and left.

I truly hope that the enormous resources being spent on the Y2K problem are primarily being used on practical matters, but from my lowly perspective within the organization, it seems to me as if reporting work has started to detract from the main task at hand.

TO COLLEAGUES INVOLVED IN Y2K WORK, consider the following:

Fractured reporting and ordering routes mean that we are wasting energy. Streamline the flow of information.

Don't change reporting routines without an extremely good reason. Increasing the level of detail is not the same thing as clearer or more valid information. Keep requests to the essential facts.

Micro-management requires extremely good insight into daily operations. Aim at creating goals and offering tools and practical insights that will facilitate our work out on the floor!

Svante Nagy is Y2K coordinator at the Center for Wireless Internet Integration

Mobile phone for the stylish

➤ Nokia unveiled a new model cell phone, Nokia 8210, that is aimed at fashion-conscious individuals between the ages of 15 and 35. The phone, which was shown for the first time at a fashion show in Paris featuring Kenzo a couple of weeks ago, was also on display at Telecom99 in Geneva.

"A phone should be an expression of the user's personality, and is just as personal as a pair of eyeglasses or clothing," says Kenneth Katter, product marketing manager at Nokia.

The phone weighs 79 grams and is being launched first in major trendsetting cities in Europe and Asia. The dual band phone for the GSM 900 and 1800 bands offers a built-in antenna and voice activation.

Wireless Internet hot at show

➤ WAP and wireless Internet are in. Like Ericsson, many of its competitors also showed off what they have to offer in these areas at Telecom99.

Motorola, for example, unveiled a new smart phone, the P1088, with a touch screen that allows users to write directly on the screen. It is the world's first smart phone to support Java for accessing the Internet, according to Motorola. The phone will be available during the first quarter of next year.

Motorola, together with Phone.com, also provided a WAP service at the show. Using Motorola's P7389, visitors to the trade show could read news, e-mail and information from specially prepared WAP pages.

Cisco and the UN help via the Net

➤ Renowned artists – including Bryan Adams, Sheryl Crow, The Eurythmics and David Bowie – performed a Netaid concert in New York, London and Geneva in conjunction with the opening of Telecom99, with the proceeds going to help needy people around the world.

The concert was broadcast simultaneously by the BBC, MTV and radio stations in 132 countries around the globe, as well as over the Internet portal Netaid, which Cisco and the UN have formed. The portal can handle 125,000 simultaneous live transmissions and a thousand financial transactions per second from around the world.

Solectron – a major Ericsson supplier

Koichi "Ko" Nishimura, President and CEO of Solectron.

Solectron is one of Ericsson's most important suppliers. It is changing electronics manufacturing and setting global trends. With its efficient production, Solectron has become a major name in contract production for electronics manufacturers.   Photos: Sue Anne Moody

Solectron is one of Ericsson's key alliance suppliers. It is also one of a new breed of supercontractors that are changing the face of electronics manufacturing. Solectron not only pioneered this business segment, but continues to be a global trendsetter. Today it is the world's largest contract electronic manufacturer (CEM) with annual revenues of USD 8.46 billion and more than 37,000 associates worldwide.

Each day it pumps out 12,000 printed circuit boards, in lots of 50 to 2,000. Yet for most people the company is unknown, mostly because it does not have any brand-name products of its own. To get a sense of what makes Solectron tick, Contact interviewed Koichi "Ko" Nishimura, President and CEO of the Silicon Valley-based corporation.

"At Solectron customers come first. If Ericsson succeeds then we succeed too. Ericsson has been in the telecom business for a long time and I believe that your strength lies in your intellectual capital and reliability. As the world becomes more

and more dependent upon data transfer, reliability is paramount," says Nishimura.

Because a lot of technology has become a commodity, Nishimura sees how increasingly difficult it is to be unique and compete on the basis of price.

"As the average sales price for commodity technology is dropping at one percent a week, it's not hard to foresee what this does to inventory profits," Nishimura points out.

"When I joined Solectron in 1988, it was evident that there was a need for some form of vertical integration in supply-chain management for original equipment manufacturers (OEMs) in the IT sector.

Technology off-the-shelf

"Companies like Ericsson were doing everything vertically within their own organizations and selling globally into a time base where product life cycles are shorter than ever. Time-base customers want products when, how, and where they choose – cheaper, better and faster. They want them off the shelf and if they can't find them they'll go elsewhere. Sometimes you wonder who all these crazy people are, only to find that you're one of them!"

"In a time base there's obviously a limit to what any one company can do. Even if you are gifted with intellectual capital and maybe even some cash, no one has more than 24 hours a day.

"That's why it's so important to have a clear idea of your own core competencies. You have to be prepared to build horizontal relationships with your peers. It's like a relay race. Someone else is going to have to run that extra leg for you, and you want to run with the best team," says Nishimura.

Success through flexibility

Solectron's mission is to provide OEMs in the IT sector with the responsiveness, flexibility and quality they need to manufacture at the lowest possible cost and sell profitably into a time base. The company's core competence is in manu-

facturing and an array of related services.

Koichi Nishimura mentions that each day their customers change an average of two out of three orders. "They either want to change the numbers, the manufacturing processes or want something else altogether. That's why it's critical that we can be responsive and flexible."

Less than ten years ago the company had just one location in Silicon Valley. Today it has 27 facilities worldwide.

"We're in a demanding business and our employees are the most important asset we have. Many Solectron employees didn't have the necessary skills in the beginning, but they had the right attitude".

Sue Anne Moody

Global alliance with Ericsson

From the initial acquisition in 1997 of Ericsson's Brazilian PBA and Swedish NPI, the Ericsson-Solectron relationship has evolved from a manufacturing partnership into a robust global supply-chain alliance.

Solectron provides the advanced technology and global materials capability used to build a wide range of Ericsson products – from printed circuit boards for AXE 510, mobile phones and radio base stations to sub-assembly of ANX, Diamux, Access 910, WDM and SDH16.

"The purpose of this key alliance is to help

get products to the marketplace and customers more quickly and at the lowest total cost," says Börje Junestrand, Corporate Program Manager at Ericsson.

CDMA infrastructure products

Ericsson products are built in 12 different Solectron facilities in Europe, North and South America and Asia. The most recent addition to Solectron's Ericsson portfolio is the manufacture of CDMA infrastructure products for Ericsson Wireless Comms Inc. (previously Qualcomm).

Just as Ericsson is classified as a key customer at Solectron, Ericsson regards Solectron to be a

key alliance supplier. "Both companies have allocated a corporate officer to oversee the alliance and high-level strategic meetings are held regularly between the companies," says David Kynaston, Corporate Vice President and President of Solectron Europe.

Cross-functional

Both companies also have fully deployed, cross-functional infrastructures in place. A Customer Focus Team at Solectron and Alliance Steering Team at Ericsson, drive day-to-day business activities and ensure effective communication.

Solectron's worldwide purchasing and logistics power is used to provide the best possible materials prices. Materials have been a key to cost reduction.

"Every quarter we review materials and value-added prices. We also look continually at design processes for ways to improve," says Junestrand. "Solectron's early influence in choice of materials, reduction of inventory and flexible manufacturing capacity have enabled a reduction of approximately 20 percent in the total cost of ownership," Junestrand adds.

Sue Anne Moody

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Frank Meehan, at Ericsson is responsible for fifth-license operators in the U.K., pictured with Andrew Jelley, head of the UMTS unit at Energis. Photo: Gunilla Tamm

Energis wants 3G license

When the five 3G licenses are auctioned in the U.K., one of them will go to a company that is not currently active in mobile telephony. Energis is one such company .

"Greenfield UMTS Operators" is the name given to those companies which do not yet have any experience as mobile telephone operators. "Newcomers" would also be a suitable term. These companies are subject to different driving forces compared with the mobile operators which are already established.

"Challenges and opportunities for a newcomer" was the title of one of the points on the agenda at a UMTS Sales and Marketing Seminar which was held in Stockholm at the end of August and which brought together as many as 500 participants. The British company Energis, which owns a private wireline telephone network for which the customers are companies, appeared as a representative for the "newcomers."

Its customers include the BBC. Energis is also active in the Internet area and was the first in the U.K. to start up a free Internet service, "Freeserve." The company, which was recently listed on the London Stock Exchange, is endeavoring to make inroads into the European market. A short time ago, it acquired the European part of Unisource.

Enter into partnerships

Energis was established in 1983, has 1,130 employees and sales which are expected to increase by 71 percent this year. The strategy is not to have very large numbers of permanent employees, but to enter into partnerships with various companies and to outsource as much as possible.

"We currently work with wireline telephony, but believe that the future is in mobile communications and that is why we are hoping to obtain one of the licenses. As a newcomer to the industry, we need a supplier – a partner – who understands our needs and who can give us total solutions," says Andrew Jelley, head of the UMTS unit at Energis.

"We know what products and services we can offer today, but do not fully understand yet what services could be supported by 3G in the longer term," he continues. "Technology is not such a major issue for us, it is what it can do for us that is of interest. The supplier we select must be sensitive to our wishes and must act as our partner."

Rapid deliveries

Other demands which Energis will make of a future supplier are rapid deliveries, a broad product range and the availability of a key account manager who deals with all of the supplier's products. Andrew Jelley also emphasizes the importance of the account manager having influence within his/her own organization.

Ericsson's Frank Meehan is responsible for the fifth-license operators in the U.K. and has very close contact with Energis from his workplace at Ericsson in Guildford, outside London.

"The demands and requests they make of their supplier are much more comprehensive than those we are used to from the traditional mobile operators," he says. "Energis wants to have a 'prime contractor' which can not only supply products and build a network, but also take care of operation, customer service and managing contacts with subcontractors."

When the 3G licenses are auctioned in the U.K., probably in March next year, Energis is in a very favorable position to obtain the coveted fifth license.

Gunilla Tamm
gunilla.tamm@lme.ericsson.se

Palm in collaboration with Symbian

Handheld computer firm Palm Computing is to collaborate with Symbian in the development a new product series based on Symbian's operating systems.

The collaboration means that the two companies will have access to each other's technology, which will result in new products that combine functions for handheld computers with those for mobile telephones. Future products will be able to use programs developed for both Palm OS and for Epoc,

Symbian's operating system. Palm Computing, owned by 3Com, has been very successful in selling pen-based PDA devices; which use a pen and touch sensitive screen to perform different functions, instead of a keyboard or buttons.

Symbian is owned by Ericsson, Nokia, Motorola, Psion and Matsushita and uses the operating system Epoc, which is specially designed for the future's smart phones and communicators. In addition, Symbian is associated with many software companies, as technical partners.

Personal contact. competent and enthusiastic staff, a fun and broad product portfolio. Judging by the views expressed in the evaluations. Telecom99 was a major success for Ericsson. The Ericsson stand was also among those which received the most visitors – between 5,000 and 7,000 every day.

Telecom99 – a major success for Ericsson
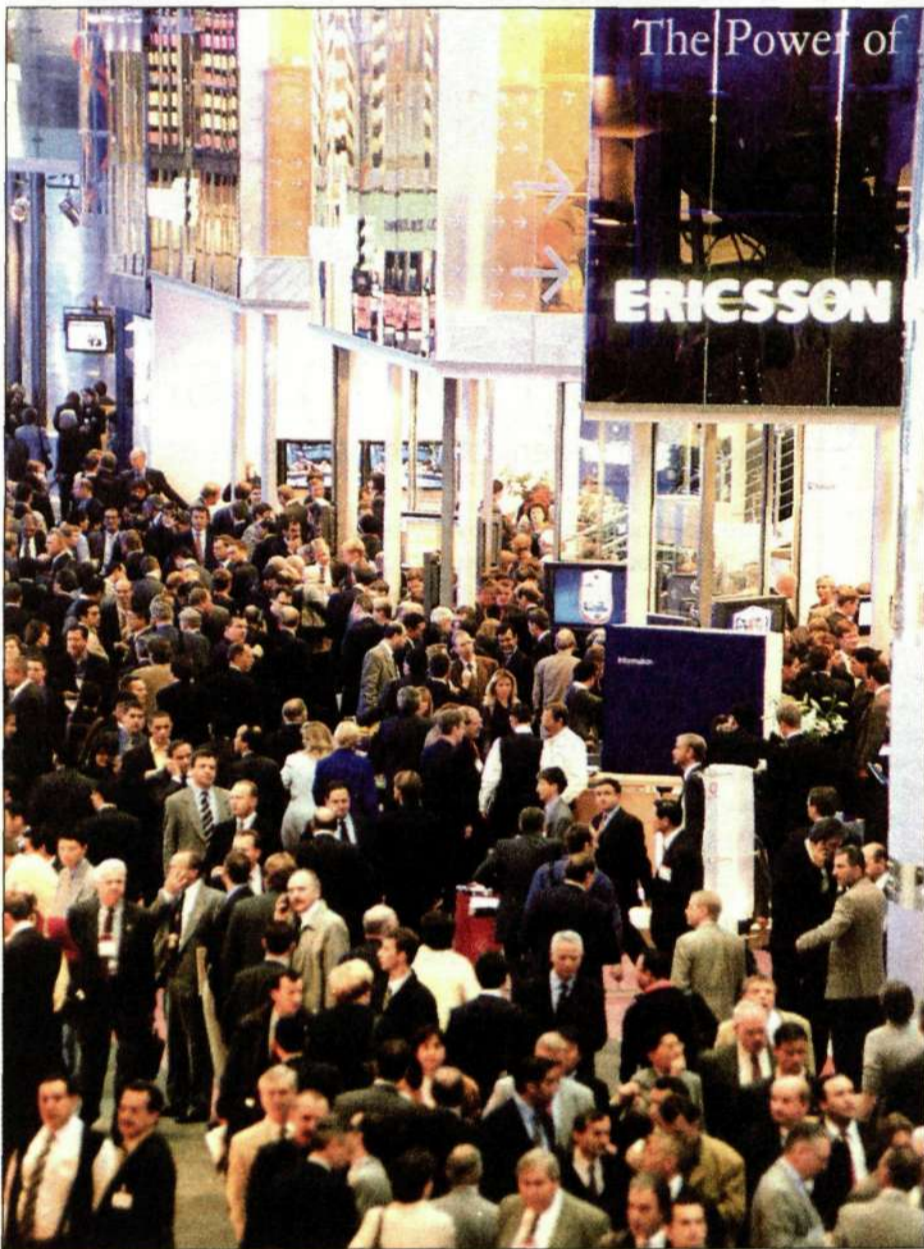
Success for Ericsson during Telecom99. Ericsson's stand was the best-attended of all – packed with people from morning to evening.   Photo: Lars Åström

We can proudly say that the Ericsson stand was the best-attended of all the stands at Telecom99 and it was packed with people from morning till evening on all the days of the exhibition," says Kurt Hellström, Ericsson's President.

"I believe that customers and media representatives can see how Ericsson has changed. We have more distinct joint messages about what we stand for, as well as an attractive selection of phones and accessories," says Sten Yondt, project manager with responsibility for Ericsson's participation at Telecom99.

Ericsson's stand and its staff received top marks *preliminary result of the survey in which* ten expert representatives from major operators visited and evaluated nine suppliers, including Ericsson. The operators' representatives visited the stand in their normal capacity and were unaware that it was Ericsson which had commissioned the survey.

"Regarding the impression given by the stand and the assessment of the staff there, Ericsson came absolute top," says Lars Svanström, who collated the survey results. The results are still provisional.

The staff was competent and enthusiastic, according to the visitors. In their presentations, they gave a good overview and were adept at finding out what the visitor was interested in. There was personal contact, rather than a formal presentation.

"Ericsson's product range was also a surprise. Some people didn't think that we had such a broad range as we do," says Lars Svanström.

On the other hand, the survey showed that Ericsson is not as visible as such companies as Nortel and Motorola. Ericsson's total visibility was mediocre.

"However, it is not certain that sensationalism and grandeur are appreciated by the customer group we were targeting at Telecom99, the very top level of the telecom industry," says Lars Svanström.

"The impression left after a visit to the Ericsson stand was very much that of Ericsson being a 'young' company – and that is how we would like the market to perceive our strategy into the New Telecoms World," says Kurt Hellström.

Mia Widell Örnung
mia.widell@lme.ericsson.se

TELECOM99

- Between 5,000 and 7,000 people visited the Ericsson stand every day
- About 180 people came to the customer café every day
- 530 registered customer visits – 300 more than anticipated – all of whom were to receive VIP tours, meet representatives of the Corporate Executive Team and receive a complete presentation of Ericsson.
- More than 300 people came to Ericsson's press conference – 200 more than expected.
- Around 180 people worked as stand staff
- The entire Ericsson Corporate Executive Team worked at Telecom99 on virtually all of the days
- Major customers who visited the stand included: Vodafone's CEO Brian Clark, and

others, from Australia; Telstra's CEO Ziggy Switkowski, and others; Alvaro Pereira, President of TIM Tele Celular Sol, from Brazil; Dr Michael Binder, Assistant Government Minister from Canada; Bruno Ducharme, TIW's President and CEO, also from Canada; Minister Wu from the Chinese Telecommunications Ministry (MII); E-plus' CEO Thiemann from Germany; Deutsche Telekom's Vice President Klaus Hofmann; Indian DoT Mr P. S. Saran; AT&T's Vice President Mike Verstegen from the U.S.; Bell Atlantic International's President Dan Pietri; MCI Worldcom's CEO Liam Strong; BT Cellnet's technical director Mike Tiplady from England; UN Secretary-General Kofi Annan.

Ericsson speeds up the product development

Ericsson predicts that the number of 3G users will exceed 120 million by 2004, which is 70 million more than shown by previous forecasts. The adjusted forecasts were presented at Ericsson's press conference at Telecom99. The number of mobile phone users is expected to reach one billion as early as the year 2003, a full year earlier than anticipated. Moreover, Ericsson expects the number of mobile data users to be approximately 400 million by the year 2004, an increase of 50 million from earlier forecasts.

"Network traffic is also increasing. In certain markets traffic is increasing by 15 to 20 percent per month, which, naturally, is good for Ericsson," said Kurt Hellström, the Ericsson President, at the press conference.

According to Kurt Hellström, the primary motivator in the future will be mobility. People

will want the ability to communicate anywhere, anytime, regardless of the terminal they currently have access to. Information will also be personalized according to taste.

Ericsson's goal is to defend its leading position within the wireless systems field. Currently, the company is already number one in this field. Ericsson also plans to once again increase its market share in the area of phones. Currently, the company is number three behind Nokia and Motorola, but aims to become one of the two biggest. Moreover, Ericsson will be number one within the field of third-generation mobile systems. Currently, the company holds a very strong position. NTT DoCoMo has chosen Ericsson to be one of its most important partners in the construction of the third-generation.

"We're going to increase the pace regarding

The press conferens during Telecom99 was well-attended. Many of the questions to Kurt Hellström, the Ericsson President, concerned WAP and Ericsson's telephones.

new product development," said Kurt Hellström.

The questions from the press related mainly to WAP and Ericsson's phones. One

journalist wondered if the R380 is delayed.

"At CeBIT, we announced that the first R380 phones would be out on the market in December. We are standing by that date. Large volumes will be arriving during the first quarter of next year," said Johan Siberg, Executive Vice President of the Consumer Products business segment at Ericsson.

The question of the next CEO was also raised.

"I believe that I will be the next CEO, but that is really a matter for the Board of Directors," said Kurt Hellström.

According to the International Telecommunications Union, the Ericsson press conference was one of the best-attended with over 300 journalists, 200 more than expected.

Mia Widell Örnung

Mobility is not restricted to mobile phones: in the mobile world, a user has the same personal profile regardless of which terminal he or she uses. This is why Ericsson's main message at Telecom 99 was "The Power of Mobility."
Photo: Lars Åström

The Power of Mobility is freedom

Simple, easily accessible information, anywhere and anytime, and customized to the individual's preferences and prerequisites. These are the cornerstones of Ericsson's Power of Mobility theme at Telecom99 in Geneva, which emphasizes personal freedom and quality of life.

"Mobility will soon be an essential feature. Thus far, the mobile phone has been the only symbol for mobility, but mobility is much more. The Power of Mobility concept is about being able to access all the services I want, anywhere and anytime, completely according to my wishes," says Torbjörn Nilsson, Ericsson's Executive Vice President for Marketing and Business Development.

Personal communication

Until now, mobility has been an extra service or an add-on, allowing customers to make and receive calls with a mobile phone over a mobile network. As an extra service, it is certainly popular. Some 400 million people today have mobile phones, and for many it is the most personal of all communications media. But in the new telecom world, mobility will be the starting point for everything.

"Convenience is the key word," says Torbjörn Nilsson. "This means that services

The Power of Mobility concept is about being able to access all the services I want," says Torbjörn Nilsson, Ericsson's Executive Vice President for Marketing and Business Development.

should be mobile and personal. Mobility and personalization are the driving forces today."

In the mobile world, personal profiles follow the user, regardless of the terminal being used. It should not matter whether it is a mobile phone, a desktop PC with a fixed connection, a handheld computer, a TV or even the refrigerator door. From every terminal, the users should be able to access their address books, calendars, favorite recipes, news, Internet stores, banking services and Web sites for companies whose stocks they own.

As these developments gain momentum, there will be no limits for what new services can be imagined or developed.

"When we are away from home, we may want to go on-line and check on things at home, for example: Is everything OK or is there a catastrophe? We can check what is in the refrigerator and what we need to buy at the store. The possibilities are really only limited by the imagination," says Torbjörn Nilsson.

The mobile Internet will really start taking off now. Of the expected one billion Internet users by the year 2003 or 2004, at least 350 million will also have a wireless Internet connection. The first WAP products are becoming available on the market later this year and early next year. WAP will achieve a breakthrough next year and pave the way for rapid development of wireless Internet services. Other products, such as Ericsson's newly announced Chatboard, are being introduced in response to the demand for mobile services.

Mobile psychology

Should anyone doubt that the market for mobile Internet and other services is gigantic, it is only necessary to look at Japan. The iMode wireless packet data service launched by Japanese cellular operator NTT DoCoMo is a resounding success. With iMode, NTT DoCoMo has succeeded in creating demand for wireless

Internet access, despite the fact that data speeds are still limited to 9600 bps. Just six months after the commercial launch, there were two million subscribers.

"We definitely can learn something from NTT DoCoMo, which has spent a lot of money to understand the people who will use the services. It's really a matter of psychology," notes Torbjörn Nilsson.

"In order not to risk arriving late to a meeting, people in Japan have to leave home in good time. Often this means arriving a half an hour or more before the meeting starts. That's when people take out their iMode phones and play games, check the location of the nearest restaurant for lunch or check the price of shares they just bought."

Demand for wireless Internet services will naturally become much greater with the arrival of GPRS and eventually third-generation mobile systems, which will offer data speeds hundreds of times faster than today's. Then we will see not only voice and text, but multimedia. Here Ericsson has a very strong position.

"Power of Mobility is about communication on your own terms. It's pretty good that there is an off-button."

Mia Widell Örnung
mia.widell@lme.ericsson.se

Demo bus shows potential of 3G

From a bus and two demo sites, Ericsson showed the possibilities offered by 3G during the telecom exhibition.

"We met enormous interest from all our customers," says Mikael Halen, who is between two meetings with customers.

He is responsible for marketing at the Wideband Radio Networks product unit, at Ericsson Radio Systems in Stockholm.

To bring to life and illustrate the possibilities offered by WCDMA and Ericsson's other 3G technologies, Ericsson made use of a bus and two stationary demo sites. Since the preceding exhibition, CeBit in Hanover, technical development has taken a major leap. At CeBit, data transfer between the container and the bus was

circuited and conveyed at a speed of 64 kilobits per second.

"Today, we are using packet data with a speed of 472 kilobits per second. We are the first in the world to do this," says Mikael Halen, looking proud and happy.

During the exhibition, Ericsson also presented many new applications. One of these was a planned phone application which makes it possible to download a country map from

the nearest operator as soon as the user arrives in a new country. Using the map, it should be possible to click your way to receive information about hotels, sights, good restaurants and entertainment, for example.

"During the bus tour, we explained which services operators can offer their customers using a 3G network – that it will be possible to see and hear videomail, watch news and order flowers via your phone. All of this will be available from a WAP phone. The point of 3G will be the ability to do whatever you want, whenever you want," Mikael Halen continues.

Ulrika Nybäck
ulrika.nyback@lme.ericsson.se

There was enormous interest in taking a trip on the demo bus. Visitors received an insight into the services which will be possible using 3G technology.
Photo: Lars Åström

Fun accessories for mobile phones were the focus of great interest at the Ericsson stand during the Telecom99 exhibition. Many visitors were amazed at the sound quality of the mp3 player, which is a tape-recorder for digital music that can be connected to a mobile phone.

"The customers are extremely curious about the mp3 player," says Patrik Lobergh, who is responsible for business development at GSM Systems.

Mp3 player arouses curiosity

The customers are extremely curious about the mp3 player and they are very impressed by the sound quality. An Alcatel representative was so taken with it that he urged us to launch the product immediately – he wanted me to fetch my boss straight away," says Patrik Lobergh, laughing.

Lobergh was one of the Ericsson employees presenting "fun and games" products at the Ericsson stand during the exhibition in Geneva.

Ericsson is the first company to present a fully-functioning prototype of a combined portable hands-free and mp3 player as an accessory for a GSM phone. Prior to Telecom99, the Chatboard, a small keyboard for SMS messages and e-mail, and a small FM Radio which can be connected to GSM phones, were released.

"A survey which we recently carried out shows that there is a great demand for products like these. With the mp3 player, we are primarily addressing a target group in the 18-25 age range, who currently purchase portable mp3 players," says Åke Rydgren, who is responsible for the future product planning of accessories at Ericsson Mobile Communications in Lund.

The mp3 player resembles the FM Radio in many ways – it is about the same size, has double headphones and a mute function, which means that there is no risk of missing incoming calls. In contrast to the radio, the mp3 player is based on a 3-volt platform and can therefore be used in combination with the T28 phone and future phones in this series.

"We opted for the mp3 format because, to date, there is no established digital format which produces the same high level of sound quality," Åke Rydgren continues.

A concept study group at Ericsson in Lund developed the mp3 player in cooperation with the British company Microna, which produces mp3 components.

Samsung has produced an mp3 player for the CDMA standard. The near future will show which company is first to launch the product in the GSM market.

Ulrika Nybäck
ulrika.nyback@lme.ericsson.se

Ericsson strategy focuses on fun

During Telecom99, Ericsson focused on the users, technical evolution and dialogue with customers. Fun applications and accessories were the common denominators throughout the various sections at the stand – everything from WAP and 3G to fun mobile phone accessories.

"Of course, this is a conscious approach – it is also an industry trend. The fun applications and products encourage sales and stimulate more companies to develop applications. When all is said and done, it is nice to be able to alternate work with listening to music or playing a fun game," says Peter Bodor, press officer at the Consumer Products business segment.

The X and Y generations, two younger groups of users, had much to be happy about at the exhibition.

"The young have purchasing power, they influence the purchasing going on around them and they could be our future consumers if we succeed in positioning ourselves," Peter Bodor explains.

Some of the applications and accessories which have aroused considerable interest at the stand were the mp3 player, the Chatboard and a WAP application which will make it possible to gamble using a WAP phone.

Ulrika Nybäck

Many enterprise solutions at Telecom99

At Telecom99, the key words for the Enterprise Solutions segment were mobility, flexibility and IP.

In the enterprise area this year, the focus was on WebSwitch, the new IP-based business switch, the GSM on the Net solution, wireless LAN and Call Center, with the new Up Front application developed by Ericsson Australia. The solutions are platform-independent. The MD110 PBX will also increasingly become an open platform. With the coming MD@ launch, the transition to an IP world will be complete.

"Everyone is asking about IP and now we are able to provide really credible answers," says Zeljka Svensson.

WebSwitch is a good example. No bigger than a desktop PC, it offers all the basic functionality of a traditional PBX – plus IP telephony. Sales of WebSwitch are already booming in the U.S. and European sales will begin at the end of October.

Up Front new web-based call center

Up Front is an exciting innovation for call center applications, that allows companies and organizations with Web-based call centers to determine the level of service they want to offer their customers. Up Front can also be used as a sales tool for electronic commerce.

"Showing visitors what they can accomplish

Britt Reigo, Senior Vice President Human Resources, was charmed by the new Up Front call center solution, which is being demonstrated here by Anna-Karin Verneholt.
Photo: Thord Andersson

with Ericsson's solutions is most important. We should not focus on products," says Jane Arrowsmith.

Total solutions

An ability to see the complete picture is one of Ericsson's strengths in the enterprise area. The aim is to fulfill the customers' need for total solutions in all conceivable situations, and to have the expertise and resources to implement complex customer projects. In this respect, the Business Consulting unit has an important task to fulfill. Its personnel were available at Telecom99 to provide support in the form of advice and suggestions, as well as proposed technical solutions, for building and operating communications systems for the entire enterprise.

Peter Jonkov from Ericsson Virtual Office impressed visitors with his hand-held MC 218 computer connected to a mobile phone. This solution is one of a flood of innovations which will make it possible to work wherever and whenever it is necessary.

Thord Andersson
thord.andersson@ebc.ericsson.se

A number of mobile data services are already on the market. WAP will make mobile Internet even simpler, enabling your mobile phone to serve as a travel bureau, a map, an advertising agency, a newspaper or a credit card – as well as providing various forms of entertainment services and games.
Photo: Lars Åström

WAP makes phones more fun

When Mobile Internet has been shown before, there has been more talk than substance. But at Telecom99 the visions were turned into reality.

As the initiative-taker behind the WAP standard, Ericsson holds a clear lead in terms of mobile Internet development.

"Ericsson has the most extensive and complete WAP portfolio," says Ericsson President Kurt Hellström. "We have phones, systems, applications and consultants – everything that is needed to make the Internet truly mobile."

To date, Ericsson has shown three WAP phones, one of which – the world's first – is already on the market. The company has delivered about 20 WAP systems to cdmaOne, GSM and TDMA operators and has established a number of contacts with content providers.

WAP expands a mobile telephone into a travel bureau, a map, an advertising agency, a newspaper, a credit card or – on the lighter side – a toy. Ericsson is currently developing services and these include everything from basic information services, such as news and sport, to more specialized services such as e-commerce, positioning services and entertainment.

"Of course it gets really interesting when you combine these areas – mobile positioning, e-commerce and information," observes Jonas Hillman, head of the New Applications and Partnerships unit at Mobile Internet Applications. "For example, users can receive information about the best film at the nearest cinema, receive a map showing the cinema's location, and order and pay for the tickets using their phones."

Upwards in the valuechain

"The main task for the operators at the moment is to move upwards in the value chain and to offer services other than voice. Tasks which they must carry out include building WAP portals, and we can offer help in this area by packaging services and developing new applications," adds Styrbjörn Horn, who is head of business development at Mobile Internet Applications.

Ericsson is cooperating with a number of companies to develop mobile services. Reuters, Interflora and the Swedish business daily Dagens Industri are just a few examples. But it is even more important at present to create total solutions and complete WAP portals in cooperation with the operators.

Agreement with SmarTone

A couple of weeks ago, for example, a cooperative agreement with SmarTone to develop a complete range of WAP services was announced.

"Now it's crucial that we develop services as quickly as possible. Starting early in the new year, Ericsson plans to release a steady stream of applications," says Jonas Hillman. "We have contacts with several major suppliers to create a series of information services, but also with games suppliers, so that we can also appeal to younger customers."

Mia Widell Örnung
mia.widell@lme.ericsson.se

Ericsson stimulates application development

At the exhibition, Ericsson presented a new program which will help to stimulate the application development for wireless Internet.

The program, called Developers' Zone, will include instructions and help tools for third-party developers and is intended to cover as many technologies as possible.

The WAP portion of the program, which was launched at the fall Internet World exhibition in the U.S., is currently the most advanced.

"You could say that we've opened a store with great potential and now need to fill the shelves with lots of fun and exciting products," says Anna Kramers who is working on the development of the program at the Mobile Internet Applications product unit. She is full of ideas and visions.

"Talking to application developers and content providers at exhibitions is a great way to create interest and stimulate development."

Visitors to the Web site can download free-of-charge tools that help developers to test their applications against a WAP product and against the WAP gateway. The site also provides WAP IP addresses and answers to the most frequently asked questions. In addition, the site contains a discussion group, e-mail addresses for contact persons and an interactive Web-based tutorial.

Increasing WAP understanding

An important aspect of the Developers' Zone is that it describes Ericsson's infrastructure, including gateways, as well as WAP phones and other products. This is intended to increase understanding of how WAP technology works. Ericsson recently sold its first WAP solution to Hong Kong, and Anna Kramers believes that the Developers' Zone program will attract many large companies working with application development. As use of WAP technology increases, so will the number of questions from the developer community and elsewhere.

"Many people within Ericsson are already working on developing Internet applications," notes Anders Lundvall, who is responsible for program development. "Now we are creating a global network and local support for the Developers' Zone to help and encourage them."

WAP applications drive sales

As the number of WAP applications increases, this will drive sales of both infrastructure and products.

"That's why it's important that there are as many application areas as possible," concludes Anders Lundvall.

Ulrika Nybäck
ulrika.nyback@lme.ericsson.se

[◎] www.ericsson.com/wap

Impression of Telecom99?

Contact asked visitors to Ericsson's stand what they thought of the stand and the display, and what the phrase "Power of Mobility" means to them.

➤ Eva Garcia, a Nortel engineer working on data via power lines.

Eva Garcia

"I am mainly interested in the WCDMA architecture. I wanted to talk to someone in greater detail about how it works, but it is not easy to get hold of one of the personnel on the stand when there are so many people here.

"WCDMA and 3G lend new meaning to the term mobility. I am looking forward to being able to use the multimedia functions of the new WAP products."

➤ Johan Siberg, head of the Consumer Products business segment.

"I think that the Power of Mobility is a powerful and strong message

Johan Siberg

for Telecom99. But it is not a slogan in the same sense as Make Yourself Heard.

"The stand is fantastic! It is fascinating to see such a well-visited stand, where everyone is bubbling with enthusiasm. The mp3 player and the FM Radio are receiving a huge amount of attention.

➤ Jörg Sarzio, who works with mobile accessories for a telecom company in Munich, Germany.

"I fell in love with the mp3 player and the

Jörg Sarzio

radio – they are neat. It is a pity that it's not yet possible to buy the mp3 player. I like the Chatboard, too – I prefer to send SMS messages rather than e-mails. The T28 is very attractive and Ericsson has made significant progress in its design.

➤ Kristina Wirestrand works with strategic product planning at Ericsson Mobile Communications in Lund.

"The stand is very attractive, spacious and

Kristina Wirestrand

stylish, and has a striking color scheme. An enormous number of visitors are packed in here, which is fun. I am mainly interested in mobile accessories.

"To me, the Power of Mobility means freedom to be reached and to be able to work anywhere. In addition, it is possible to switch off the phone and listen to messages. It is not necessary to work all the time after all."
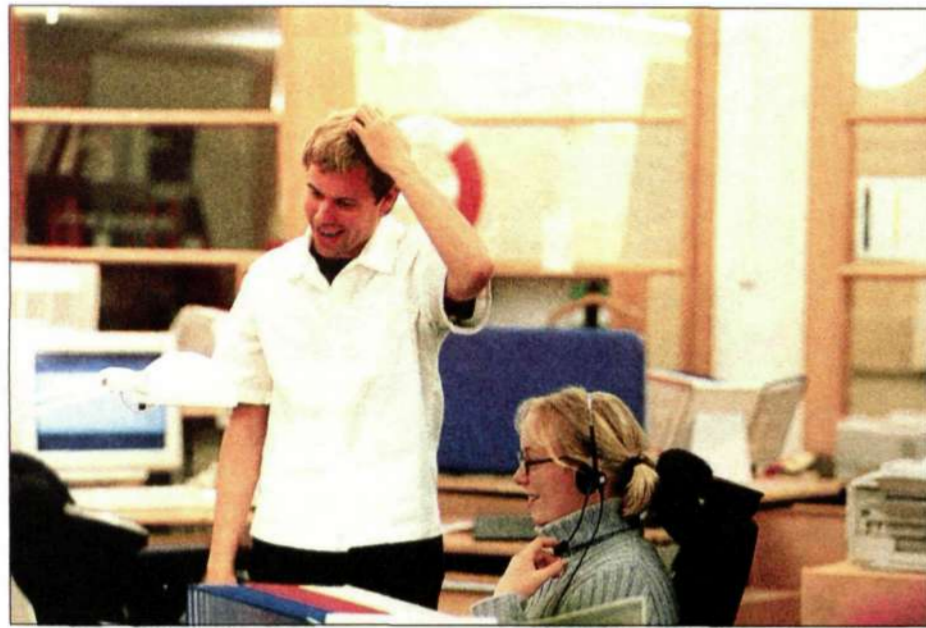
The IT-helpdesk of SEB Bank and Insurance provides telephone IT-support to 13,000 employees of the SEB Group.

SEB employees call the IT-helpdesk when problems arise. Most problems are resolved immediately. The maximum reply time is 30 seconds.

Terje Hatt, manager of the IT-helpdesk, and Kjell Eklund, SEB IT's manager of telephony, are seen outside the office of the SEB Bank and Insurance Group's IT-helpdesk in Stockholm.

Photo: Lars Åström

In addition to SEB's IT-helpdesk, other call centers are operated in areas such as customer service, SESAM telephone banking and SEB Services.

Rapid response from Next call center

The IT-helpdesk of SEB Bank and Insurance is situated in Rissne, a suburb north of Stockholm. The helpdesk provides IT-support over the telephone for all 13,000 employees of the Group. It is also one of the first support centers in the world to invest in Ericsson's Next call center.

IT-systems are the lifeblood of a modern bank and insurance group such as SEB. Very few services could be provided if the systems were to fail. If and when problems arise, affected units call the IT-helpdesk. In most cases, callers receive immediate and personal answers to their questions. The maximum reply time is 30 seconds. Most problems are resolved within four minutes. The IT-helpdesk's call center operates internally. It is open from 7.30 AM to 6.30 PM and until 10.00 PM for IT-support for operations that establish customer contacts during evening hours, such as insurance sales personnel. The helpdesk's staff of 45 agents receives an average of 1,500 calls per day, or 25,000-30,000 calls per month. Monday is the busiest day of the week, with most calls relating to forgotten passwords.

Other call centers in the SEB Group include customer service, SESAM telephone banking and SEB card services. Today's customers often use the Internet and telephone as important tools in their banking transactions, but they also place demands on easily accessible services that offer a broad range of service products. It is important, therefore, for SEB to monitor new trends in call center operations as part of efforts to find the best solutions available.

Kjell Eklund is SEB IT's telephony manager. He was introduced to Next call center in March 1998 at an exhibition in the U.S., where Ericsson displayed the new system. "It looked exciting. When we were offered the opportunity to take part in a Next call center field test, we chose the IT-helpdesk as the most appropriate environment. It was a huge field test – a classic example of cooperation and commitment by the supplier," says Kjell Eklund emphatically.

"The project team from Ericsson worked here for several months to fine-tune the system. A large part of the development work was conducted on-site. We also received several visits from systems development personnel from the U.S. Ericsson was highly receptive to our opinions, and many of our viewpoints led to changes and improvements. The field test really strengthened our confidence in this solution."

Develop new solutions

SEB, as a result, decided to keep the Next call center. Agreements were signed with the distributor and system integrator, TietoEnator Dotcom, in June 1999. Both parties will work together to develop new solutions for the future. Until now, SEB has chosen to use the call center application without too many sophisticated features. Now, however, Next call center will be able to show its true capabilities.

SEB plans to develop keyset functions, for instance, to provide improved service in the event of serious disruptions in all or large parts of the bank. Callers will receive rapid replies to questions about disruptions and information on when they can expect the disruptions to be resolved. If callers also want to discuss other problems, they will be transferred, as usual, to the call center.

"We are trying to establish a favorable balance between the types of solutions we provide and accessibility," says Terje Hatt, manager of the IT-helpdesk.

"The most common problems are resolved with relative ease. Most customers get direct answers to their questions. However, we have a highly mixed IT environment within SEB, with very complex systems. We also plan to introduce a user number identification function, which will enable us to access caller information from a database as soon as calls are received."

SEB also wants to utilize Next call center's capacity for knowledge-based call routing. One plan is to divide call response personnel into different teams and assign special expertise areas to each team. Every branch of bank operations would then be assigned a special number, which would direct calls to the team most familiar with the caller's operations and IT-requirements.

"At the same time, it's important that we do not build walls. Everybody should be able to help everybody else," says Terje Hatt. "Next call center will enable us to exercise strong control over incoming calls. Everybody will be able to monitor the situation via our large screen or their own PCs."

The IT-helpdesk also sees opportunities to link home workstations to the Next call center. The links would enhance the helpdesk's potential to offer service during evening and night-time hours, without additional staffing requirements at the call center in Rissne.

Prior to the merger of S-E-Banken and Trygg-Hansa in the beginning of 1999, each company had its own MD110 platform. After integrating the two systems, SEB has one of the largest networks in Europe – with a joint directory comprising 14,000 extensions and 120 LIM units in 40 nodes.

No problems in coordination

SEB IT's next step is to "productify" its Next call center, a process defined as securing the system's problem-free coordination with all other technologies in SEB's IT-world.

"We will work closely with TietoEnator Dotcom on this project as well," says Kjell Eklund. "Productification is important – it serves as a stamp of approval. By the time we are finished, it will be simple to extend Next call center to several other SEB call center environments."

Kari Malmström

Ericsson and TietoEnator – a strong combination

TietoEnator Dotcom AB is one of Sweden's leading data and telecommunication systems integration companies. It offers consultant services, supplies products, builds solutions and assumes responsibility for contracts and installations, in addition to providing service and support.

The company has 11,000 employees in 12 countries, with special emphasis on the Nordic region and Germany. TietoEnator has a 20-percent share of the Swedish datacom market and about the same share of Sweden's telecom market. It has about 40 offices situated throughout the country.

TietoEnator Dotcom works in cooperation with several selected partners and suppliers. Its strategy is based on choosing a primary partner in each specific application area. In the call center sector, the company has chosen Ericsson and the Next call center platform.

"The call center sector is characterized by extremely dynamic growth," says Milos Herman, marketing director of TietoEnator's Communications business area, which includes TietoEnator Dotcom. "We started supplying customers with call center solutions about two years ago, in what was a relatively immature market. Prices were still high and, for technical purposes, the start-up of call centers was a fairly complicated process that required comprehensive programming work and adaptations.

"Today's solutions can be installed easily and generate profitability immediately. Next call center is the best call center solution we have worked with; it is relatively standardized and easy to configure and adapt to specific customer requirements."

"Solutions for future enterprise communications will be created by integrating building blocks from three areas – datacom, telecom and network services," Milos Herman continues.

"Our strength lies in advanced expertise in both telecom and datacom, a combination that represents our future. We also know that our company has a prominent position in customer awareness. Our cooperation with Ericsson provides additional competitive advantages based on access to expertise and market credibility.

"Sweden has a large customer base with solutions from Ericsson, which provides a springboard to new areas such as Next call center, IP-telephony and Internet-based call centers," explains Milos Herman. "We believe mobility will assume growing importance in business communications, an area in which Ericsson has a strong foothold that will create strong future potential for both companies."

Kari Malmström

Call center for a new era

Traditional call-center systems are based on Automatic Call Routing (ACD), an integrated function of business exchanges that control call-waiting lines, distribution, sorting and prioritization of calls.

Next call center operates almost independently of the exchange that controls telephony. The exchange delivers incoming calls, but is not a part of the call center's intelligence. The call center application, instead, is separated from the exchange, which is situated in an independent Windows NT server.

Next call center provides sophisticated prioritization and careful call screening, or skill-based routing. Skill profiles of call receiving units are entered into the system, and calls are routed to receivers with the best qualifications to handle the calls. A large number of parameters are also addressed to route call flows based on specific customer requirements.

The system can also be integrated with keyset services. Other customer-specific applications can also be easily integrated into the system.

Kari Malmström

enweb.ericsson.se/callcentre/

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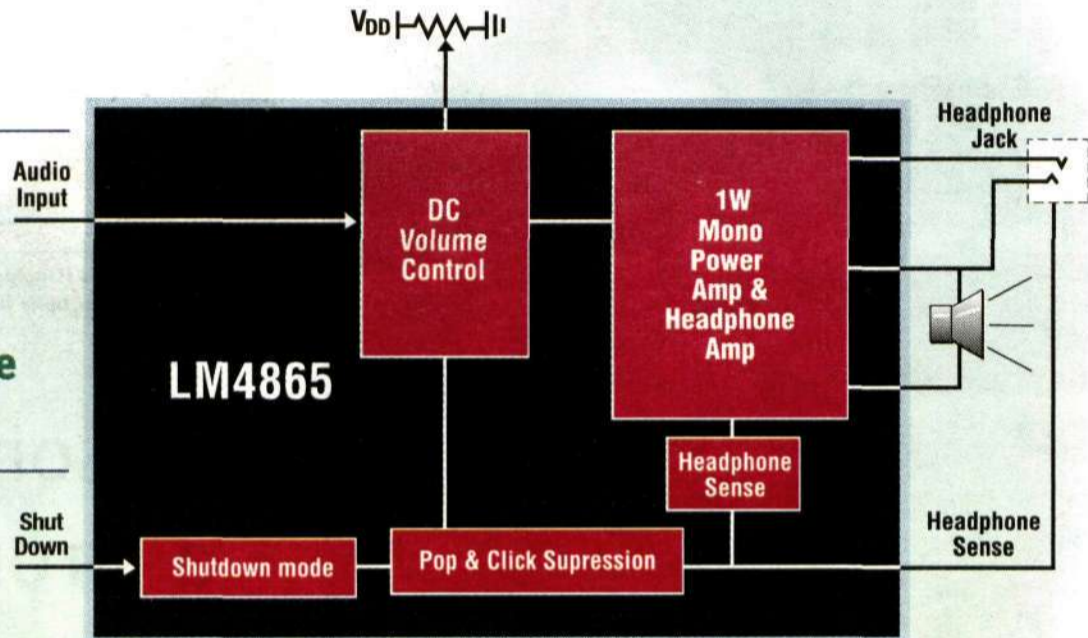
LM4865 block diagram — Audio Input, DC Volume Control, 1W Mono Power Amp & Headphone Amp, Headphone Sense, Headphone Jack, Shut Down, Shutdown mode, Pop & Click Supression, V_{DD}

Output Power (W) vs. Supply Voltage (V); $R_L = 8$Ω Bridged, $1 = 1$ kHz; curves for 10% THD + N and 1% THD + N
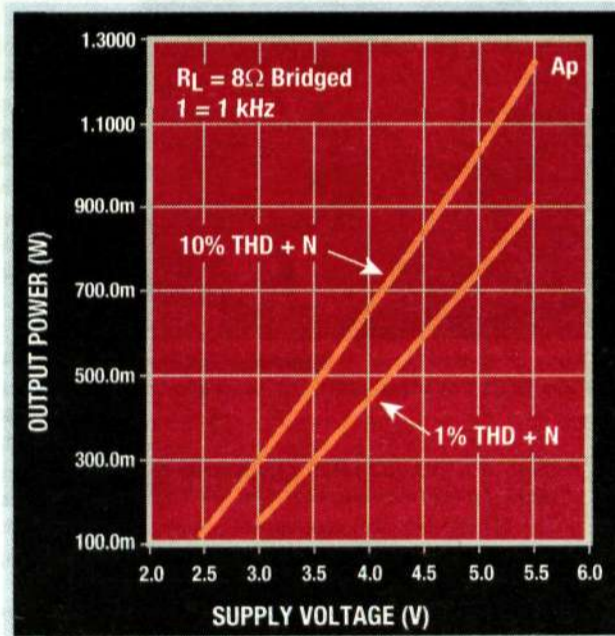
Ericsson is conducting network monitoring training for the Swedish operator Europolitan. Courses, which are conducted on-site using a client's existing network, enable participants to receive expert assistance for their own networks. Jimmy Säll, of Ericsson, is in the middle. Other Europolitan class participants include, from the left, Andreas Bengtsson, Glenn Nileby, Andreas Kjellson and Stina Hillman.
Photo: Lars Åström

Ericsson's GSM Systems business unit has tested out a highly customer-oriented training course on the premises of Swedish mobile phone operator Europolitan. This on-the-job training program allows the entire course to be held on-site at the customer's plant.

On-site network monitoring course

I t was helpful to hold the course in our own office environment," says Christina Brehmer, team leader for Europolitan's network monitoring personnel. "Everyone feels at home when they're able to use networks they are familiar with."

This test course dealt with network monitoring. Europolitan, which in the past has primarily used Nokia equipment in its nationwide Swedish network, recently acquired Ericsson switches and base stations, which brought about a need for training in the new equipment. In the future, network administrators will be dealing with both kinds of equipment. In order to get the most out of the Ericsson equipment, they decided to try out the new training method.

"We need to improve our skills at using all the applications," says Markus Åsenryd, head of network monitoring at Europolitan. "Everything is more complex today than it was just a few years ago. We have several kinds of systems operating within the same network and we need to master them all equally well. Ultimately, it's about providing quality service to our customers."

Intensive course

The concept behind the course is to provide intensive training to at most five people at a time, using the customer's existing network, which provides a "live" environment. Ericsson's expert trainer for GSM network monitoring, Jimmy Säll, spent a week in the middle of September at Europolitan working as a mentor.

Key areas within network monitoring which Jimmy Säll covered included fault management (operation, monitoring and alarms), configuration management (that is, integrating a new site into a network) and performance management (how to read and analyze reports).

A theoretical background for every section of the course was first provided, followed by hands-on lessons including how to handle traffic interruptions or how to define a new site.

Everything in the course is aimed at teaching students the basics and, most of all, how to find their way around the on-line documentation.

"The first thing I did was to confer with class participants on whether the proposed material corresponded to their expectations," says Jimmy Säll. "The course is divided into modules, focusing on those aspects that are most important for the particular customer".

The week concluded with an evaluation and a report summarizing the results of the training course, which were then sent to the customer. Based on the test project, it became clear that there is an even greater need to focus more time initially on deciding course content.

Customized learning

"On-the-job training is mostly about helping customers become more efficient in their operations," emphasizes Thomas Lindfors, the project manager who developed the course.

A highly customer-oriented format tops off the extensive course offerings. The goal is to identify gaps in knowledge all the way down to the individual level and then adapt the courses accordingly.

"Although Ericsson has offered on-site courses for customers in the past, what is new here is that the course is a product for which the customers themselves decide the content," says Thomas Lindfors.
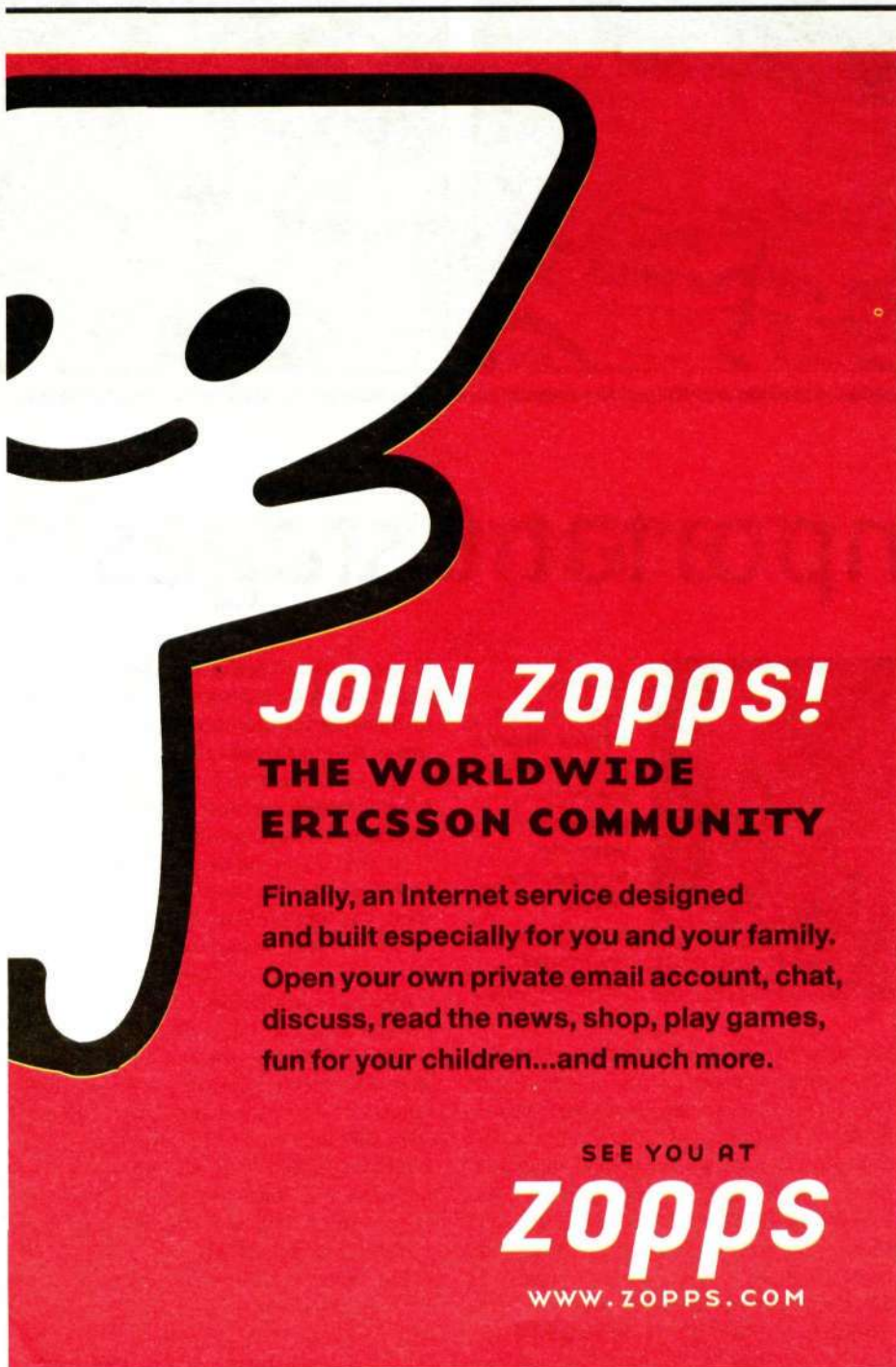
"Another new aspect of this training program is that students are able to learn how to operate various parts of their own mobile systems within the company's network while they're in operation. This method of working is quite demanding for the mentor, in that he has to be very familiar with a customer's routines and systems."

The Swedish test project was the last step in the development of a new product.

Now the product will be launched globally, and China and Taiwan are among those waiting in line. On-the-job training courses are being developed within four different areas – OSS, Radio Network Planning, RBS Site Maintenance and NMC Operation. The latter two will begin in Belgium in October.

Lars Cederquist
lars.cederquist@lme.ericsson.se

www.ericsson.se/Training

Sweden has overtaken Finland to become Europe's most prominent IT country. Sweden is now second in the world after the U.S. But why is it that Sweden is so advanced in the field of IT and has so many computers, mobile phones and wireline phones?

Sweden and Finland topping the telecom world

To be honest, Sweden is not alone at the top – Finland has a record number of mobile phones and Scandinavia as a whole has a very high level of IT maturity.

The survey showing that Sweden has now overtaken Finland as an IT country was recently published by the IDC analysis company. A total of 55 countries were examined based on such aspects as computer density, Internet access and investment in information technology in general.

In March this year, Forbes business magazine presented a survey on Internet development in Europe. It placed Sweden, Finland, Denmark and the Netherlands in joint second place after the U.K.

That survey included not only computers and the number of telephones per head of population, but also such factors as population, business climate and interest rates.

However, "if Sweden's population density were as high as Germany's, it would be the most interesting market in Europe for e-commerce."

The result depends on the criteria applied.

But, regardless of which way you interpret the definitions, it is clear that Sweden and Finland are the world leaders.

"Sometimes Finland is ahead, sometimes Sweden. There is no real yardstick. Really, it's not worth arguing," says Arne Granholm, who is secretary of the Swedish government's IT infrastructure committee.

"Whatever way you do your calculations, Sweden is always somewhere among the leaders," he continues.

But this doesn't make the question less interesting.

There are a hundred explanations for why people in Sweden and Finland hook up and use computers, phones and mobile phones more intensely than anyone else.

Some of them come up regularly, such as the one that Sweden was an early adopter of phones and that competition has driven development forward.

Others are less realistic, such as the one that the Swedish language can be heard unusually well on the phone.

Contact has dug deep into history.

Marika Ehrenkrona

Competition between the Nordic neighbors Sweden and Finland has encouraged development in the telecom industry. Sweden is now Europe's foremost IT country, but in Finland a larger proportion of the population uses mobile phones.

Photo: Pica Pressfoto/ Pressens Bild

The phone quickly became popular in Stockholm. This picture shows the North Telephone Tower. However, the phone also had an impact in the provinces.

Cooperatives extended network

The phone caught on quickly and powerfully in Stockholm. But the provinces were not far behind.

"The phone was not a purely Stockholm phenomenon. On the contrary, a series of telephone cooperatives were established throughout the country and these were of considerable significance for the spread of the phone," says Jan Garnert, who has researched the cultural history of the phone.

Telephone cooperatives were also formed in other Nordic countries. These cooperatives acquired a strong position in Finland and can still be found in some areas today.

"Many telephone cooperatives were visionary and adopted new technology," says Bengt-Arne Vedin.

Problem-solving in cooperatives

An example can be found in Finland in recent years at the time of the introduction of AXE technology:

"The phone cooperative in Turku was one of the first to use AXE."

The telephone cooperative was a natural way for a geographic area to handle a common problem. When telephony arrived, local needs were solved in the same way as people previously had dealt with energy supplies and road maintenance, as well as many other things. The telephone cooperative covered a limited geographic area and often there was only one cooperative within an area. There was no question of having the same type of competition found in Stockholm.

On the other hand, the telephone associations competed with one another within Sweden. The cooperatives looked at one another's' activities and did not want to be worse than the neighboring cooperative. In this way, telephony spread throughout the entire country.

"During the 1890s, there were several hundred local networks in Sweden," says Jan Garnert.

Early on the scene

The telephone cooperatives were thus on the scene early and expanded networks in cities and rural areas where neither Bell nor Stockholms Allmänna had a market. Why this was the case in Sweden (and the rest of the Nordic region) can only be a matter for speculation.

One reason may be found in the growing numbers of small industries, with many craftsmen and merchants. This was a relatively broad middle class, which could afford to buy telephones and was sufficiently large to create demand.

And which needed to make phone calls.

# Competition at important stages of development

A guardian angel has been present throughout Swedish telephone history.

The angel is called competition. It is not always present, sometimes it seems to have disappeared completely, but then suddenly it reappears. Just when it is needed most.

Competition propelled the Swedish capital, Stockholm, into the position as the city with the highest phone density in the world in 1885. Not only in relation to the population, but also in absolute figures. No other city had so many phone subscriptions as Stockholm.

One hundred years later, competition was an important driving force behind the breakthrough of mobile telephony in the mid-1980s. Operators and manufacturers competed for customers and prices came under pressure.

Ericsson benefits greatly from Nokia and Nokia can be glad that Ericsson exists. A serious competitor in the domestic market sharpens a company's own organization. The same is true, for example, of the Swedish engineering companies Scania and Volvo, who together
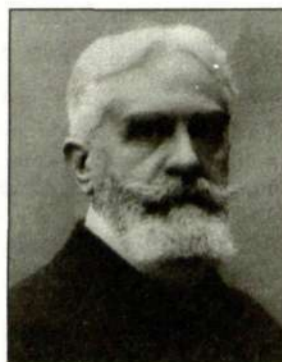
Henrik Tore Cedergren installed Sweden's first telephone line for practical use between his home and his father's goldsmith shop.

Cedergren contacted Lars Magnus Ericsson who owned a precision engineering workshop. Together, they laid the foundations of the Swedish telecom industry.

have succeeded in winning a large portion of the world market for heavy trucks.

As early as 1877 – one year after Alexander Bell submitted his patent in the U.S. – a young man set up a telephone line between his father's goldsmith's shop and the family home in Stockholm. The young man was called Henrik Tore Cedergren and he was the first person in Sweden to have a phone line for practical use. When the phone started to make serious inroads in Sweden, it was on the initiative of the U.S. company Bell, which constructed the first

telephone network in Stockholm in 1880. Exactly as Bell had done in other countries – with high tariffs. Too high, thought Cedergren. As a result, he formed, in 1883, Stockholms Allmänna Telefonaktiebolag and began to compete with Bell on pricing. Of course, Cedergren needed phones for his network, but he was not allowed to buy them from Bell, so he contacted a precision mechanics workshop in Stockholm which repaired telegraphs. This workshop was owned by Lars Magnus Ericsson.

Cedergren and Ericsson could see that they had a good joint business project, but neither of them could guess that they would lay the foundations of the Swedish telecom industry.

The fact that Bell had competition in Stockholm brought pressure on the prices and quickly created a large market.

"It was in the interests of both Bell and Stockholms Allmänna to get as many customers as possible to join their systems. The value increased as more people subscribed," states Arne Kaijser, assistant professor of technology and scientific history at the Royal Institute of Technology in Stockholm.

The phone system became self-generating. The greater the number of people who had a phone, the more people a new subscriber could call. In Stockholm, it was also quite easy to install new telephone lines over roofs – it was not necessary to ask the city or the government for permission. All that was required was an agreement with the property owners.

Arne Kaijser makes a comparison with the Netherlands, where Bell was given a monopoly at the same time:

"It was more advantageous for Bell to establish networks for a few customers who paid a lot. And this was precisely what happened in the Netherlands, where Bell exploited its monopoly to charge a lot of money for an exclusive service."

The result was fewer and more expensive phones, which handicapped telephone development in the Netherlands.

The situation was similar in most other European countries, which either had private or state telephone monopolies.

Phone wars

A new round of phone wars also occurred some years later, around the turn of the century, when Stockholms Allmänna and the Telegraph Service were competing for the market. It can be said that competition was the driving force in Stockholm throughout the entire period between 1883 and 1918. In his book, I fädrens spår ("In the footsteps of the fathers"), Arne Kaijser writes: "The intense competition in the telephone market around the turn of the century led to subscription and call prices being pressed down to a low level.

This led to more people joining, which enabled even lower prices, and so on. The result was that Sweden had Europe's highest phone density."

When mobile telephony arrived at the end of the 1970s in the form of the Nordic NMT standard, competition created a driving force which generated the same kind of expansion as seen during the "telephone war" of the 1880s. Bengt G Mölleryd shows in his thesis (Stockholm School of Economics) how the operators developed and expanded the mobile telephony market.

"The first deregulation occurred in 1971, when the market for mobile phones was opened up. In 1981, the competition was in the network operators' market."

It is also thought to be a major advantage for development if two competitors are located near to each other. It was an advantage for Cedergren to have Bell and it is beneficial for Ericsson to confront a major competitor in its (almost) domestic market.

"It turns out that clustering creates an extremely beneficial environment for growth," says Bengt-Arne Vedin, professor of technological development and author of a series of books on technology research and entrepreneurship.

"Facing competition at close range is a huge advantage. We can see this in a number of different industries, the textile industry in northern Italy being one example."

Competition a boost

The advantage, according to Bengt-Arne Vedin, is that the cluster offers a development environment which includes several different areas in addition to the obvious competition:

"Companies cross-fertilize one another, strong subcontractors emerge, there are more multifaceted career routes and the possibility to 'poach people.'"

Of course, Ericsson and Nokia stimulate one another at all levels.

The competition is given an extra sting because it involves Sweden and Finland. You only have to see this in sporting events between the two countries to see that the competition between them is no party game.

Marika Ehrenkrona

Marika Ehrenkrona

Self-image is self-generating

Sweden became a country of telephones – partly as a result of the competition in Stockholm and the many telephone cooperatives in the provinces. The country's leading position was featured in British and American newspapers of the day. Sweden was presented as a role model and was regarded as the pathfinder in telephony.

Since the infancy of the telephone, Swedes have perceived their country as being good at telephones and this is why they had such a positive attitude to mobile phones and computers right from the start.

This was a new and somewhat unusual situation for the Swedes, who had put the years of famine behind them in the 1880s and were in the midst of a period of emigration. As an industrial nation, Sweden was far behind, for example, the U.K. and the U.S. But in this case the Swedes were able to make their presence felt. It was a source of pride.

The Swedish newspapers wrote a great amount about these international comments and very soon a positive self-image was created: "We in Sweden are best in the world at telephony."

This was a new trend. The phone's predecessor, the telegraph, had not had an especially prominent position in Sweden.

In this case, the U.S., the U.K. and France were far ahead. It would therefore be wrong to say that Sweden became a telephone country because it was previously a strong telegraph country. But the phone gave Sweden a real upward boost in the technical innovation stakes.

Since then, the self-image has been self-generating. Because the Swedes have been aware that they were good at phones somewhere in their cultural heritage, it was not difficult to adopt mobile phones and computers when they arrived: "This is the sort of thing that we in Sweden are good at."

Marika Ehrenkrona

Small is biggest

Sweden is a small country and Finland smaller still. And they have languages which few people outside their borders can understand.

These countries are really no more than the size of a province in France or a state in the U.S. If a country is so small, then the domestic market soon becomes too limited and companies have to start looking further afield. Adaptability, speed and flexibility are the conditions for survival.

Both LM Ericsson and Henrik Tore Cedergren were involved in exports early on. For example, Cedergren won the license for a telephone network in Moscow and for LM Ericsson, exports to the U.K. and Russia developed strongly already before the turn of the century.

"For many of LM Ericsson's competitors, the opposite applied. They had major domestic markets and became 'imprisoned' by their own standards. LM Ericsson was forced early on to be alert and to adapt to various markets, solutions and needs. LM Ericsson's flexibility became one of its special features," says Arne Kaijser, assistant professor in technology and scientific history at the Royal Institute of Technology in Stockholm.

"Sometimes, small is beautiful."

When a company subsequently reaches a global market, its dependence on the small domestic market is not quite so great.

Being small may also have been positive for the development of telecommunications. Everybody knew everybody. At least all the telephone engineers knew one another. The Royal Institute of Technology (KTH) was established in Stockholm in 1869 and as early as 1901 a vocational school of electrotechnology was opened there. Many of the telephone engineers at LM Ericsson, Stockholms Allmänna and the Telegraph Service received their education at the school.

"Eventually there developed a productive network of the Royal Institute, the Telegraph Service and the industry," says Arne Kaijser.

"They were fellow students at the Institute, met at the Technology Society and kept up their contacts in working life."

When telephony then became more and more theoretical from the 1920s onwards, this cooperation played an increasingly important role. At the Telegraph Service, there were technically trained purchasers who knew what they wanted from LM Ericsson. They spoke the same language and had the same frames of reference. This was a common cultural environment in which the telephone could be developed.

From industrial rooths to multinationals

Scandinavia is a hotbead of telecommunication success. This runaway development has a philosophical as well as a practical background.

Contractors have been present throughout IT history in Scandinavia. Though classically regarded as small businessmen, a more complex role exists for them within Swedish Telecom, Ericsson and Nokia.

In his thesis, "The building of a world industry – the importance of entrepreneurship for Swedish mobile telephony," researcher Bengt G Mölleryd describes how individuals in both Swedish Telecom and Ericsson contributed to the growth of mobile telephony.

Bengt-Arne Vedin also emphasizes the contractors' role in innovation.

"In a real industrial society, you work in the established manner. The son inherits the trade from his father. At the innovation stage, however, it is important not to do the same as everyone else, you have to go against the flow and believe in untested solutions."

Crister Skoglund, university lecturer in the history of ideas at the University College of South Stockholm, says:

"There must be a creative environment, but it does not have to be especially large for something innovative to take place. It may be sufficient to have a few individuals who join forces to do something they believe in."

Modern chaos research shows how small changes in initial values under certain conditions can have extremely large effects in dynamic systems. Or, to put it simply, a little effort from a person at a critical point in time can change the path of history.

Industrial base

"You have got to start somewhere," Bengt-Arne Vedin observes.

The customer must know that it works, that there is a background that guarantees quality and long-term sustainability.

Sweden had its iron industry, ironworking operations and precision engineering. Finland had its forestry. Nokia was established in 1865 as a pulp mill outside Tampere.

There was an industrial base to build on. This was not as apparent in Denmark, which was dominated by agriculture and small craftsmen, or in Norway with its fishing industry.

"Telecommunications is now considered a high-tech industry. But the situation was different at the end of the 1800s, when the telephone industry was primarily considered a precision-engineering operation," says Arne Kaijser.

There are roots back to the precision-engineering industry, ironworking and the iron industry. There is also the ability to organize large systems and to develop logistics.

It is often said that Sweden is a small country, but with large companies and large-scale solutions.

Both forest products and iron ore were exported, so the Swedes had been able to acquire a little experience of international trade, as well as the insight into the fact that it is impossible to grow if you do not quickly start selling to markets far outside the country's borders.

Marika Ehrenkrona
Edited by Matthew Tapsell

Marika Ehrenkrona

From the supply unit at Ericsson Radio Systems in Gävle, northern Sweden, basestation deliveries are made directly to the location in Germany, where the customer will use them.

Photo: Leif Jäderberg

Karl Alsmar is president of Ericsson in Germany and is very engaged in the test project.

Heinz-Juergen Kabrede is in charge of logistics at Ericsson in Germany.

Lars-Göran Hansson is head of the TTC Global project.

Björn Eisner is Key Account Manager for Mannesmann Mobilfunk.

Rapid deliveries and lower costs

Improved precision in deliveries, shorter lead times and less restricted capital for Ericsson, along with caps on costs for mobile telephone operator Mannesmann Mobilfunk. Those are some of the important benefits of a test project being conducted at Ericsson in Germany using the TTC Global framework.

TTC Global is a program that can radically improve the entire delivery chain, from initial ordering to final customer delivery. In autumn 1998, a test project at Ericsson in Germany using TTC Global was initiated. Initially, it focused on deliveries of base stations, but the test project has now been expanded to include AXE and products from Ericsson Microwave Systems. Karl Alsmar, president of Ericsson in Germany, has been actively involved in moving the project forward.

"'TTC Leadership' was a project that we had already started, and it became the foundation of the test project," he explains.

Inventory not needed

One concrete result to come out of working on this project has been that Ericsson in Germany no longer needs to maintain an inventory.

"When the test project began, one of our goals was to be able to shut down the warehouse in the middle of 1999, which we in fact did this past summer," explains Heinz-Juergen Kabrede, who oversees logistics at Ericsson in Germany.

"The test project has shown that we're able to operate just fine without a dedicated inventory, and that our remaining inventory functions can be outsourced. Much of this has to do with a change in attitudes and being able to rely on each other more so that we do not need to maintain a dedicated inventory."

Another important improvement to come out of the test project is that deliveries of base stations are now handled through a Supply Unit at Ericsson Radio Systems in Gävle in northern Sweden, which deals directly with customer base station sites. Under TTC Global, the supply unit's task is to assume total responsibility for an order and to manage logistics. Customers or market units place their base station orders with the supply unit, which in turn divides the order up, placing the orders required, and assuming responsibility for ensuring that all equipment is delivered directly to the appropriate site.

Distribution is an important aspect of the delivery chain and Andreas Christophel at Ericsson in Germany has developed a new concept known as "Merge in Transit" for distribution. Essentially, it consists of coordinating all materials from subcontractors prior to delivery. Trials were conducted on deliveries of RBS 2000 base stations, and these went very smoothly.

"The new distribution concept supports the TTC Global goals in avoiding inventories and reducing lead-times. We've reduced delivery times from Gävle out to the site to just 72 hours," says Andreas Christophel. Another system being utilized is Envisor, a system that reports order management and distribution events in real time. All supplychain involved service providers participate in this system, according to Andreas Christophel.

A basic prerequisite for being able to streamline the delivery chain is to have standardized products.

"Of all the products we currently offer, our customers mostly choose only a few of them, and new products entering the market are highly standardized, so we have made some good progress in that regard," says Lars-Göran Hansson, who has overall responsibility for the TTC Global project. In addition to standardized products, it is also important that there is no reconfiguration of the site, according to Hansson.

As for the future, Lars-Göran Hansson has a vision where personnel on site will be able to place orders from their mobile phones, directly to the supply unit.

In addition to this test project in Germany, a similar project using TTC Global has been conducted in Canada, and has also led to very good results. This new, more efficient method of delivery will be introduced first in the U.K. and the Nordic countries and subsequently in the rest of Europe over a period of nine months.

Support from customers

At Mannesmann Mobilfunk, Ericsson's largest customer in Germany, they are very positive about the TTC Global test project.

"We've presented the project to their top twenty managers, and have been conducting the project jointly since this past summer. They are giving us their wholehearted support," says Björn Eisner, Key Account Manager for Mannesmann Mobilfunk.

D2, as Mannesmann Mobilfunk's GSM system is called, is growing at a rate of 400,000 new subscribers each month. Under the frame agreement between Ericsson in Germany and Mannesmann Mobilfunk, a supplementary order was recently placed for 2,000 base stations and 12,000 TRX/TRU (that is, sender/receiver units). Thanks to the new, efficient delivery chain, both Ericsson and Mannesmann Mobilfunk are able to handle this work without requiring additional employees.

Good effort in Gävle

"Cooperation with the supply unit in Gävle has worked well, and they have a strong commitment. The appropriate people were involved right from the start," says Karl Alsmar. "As always, in a test project, there are unexpected difficulties, so it's important not to let them stop you but rather keep on working. Sometimes problems need to be dealt with at a managerial level in order to be resolved, and in such instances it is essential to ensure that happens."

Over one hundred employees, including those in order management and inventory at Ericsson in Germany, have been affected by this new, more efficient flow of deliveries. The personnel unit has developed a new training program for these individuals, to enable them to assume other positions. Large customer orders for mobile phone systems have meant that practically all employees are needed.

"Just like everywhere else within Ericsson, we here in Germany need to be flexible and able to switch job assignments," concludes Karl Alsmar.

Gunilla Tamm
gunilla.tamm@lme.ericsson.se

Senior Software Designers Programme
Conference in Mexico City, December 4 – 8, 1999

Ericsson and the Senior Software Designers Programme are proud to invite you to its sixth conference. This time we will gather in Mexico City to enhance our professional skills, meet colleagues and enjoy life as a Senior Software Designer.

Conference Concepts and Highlights
- Tutorials on new technology merging the datacom and telecom areas. These will also treat IP-telephony and related techniques, such as GPRS, UMTS, VoIP.
- Tutorials on new trends in software engineering within and outside Ericsson. Some of the topics will be component based software architectures, object-orientation, Java and SDL development methodology.
- Paper and poster sessions with participants' contributions. All participants are encouraged to spread their knowledge and experience by contributing to the conference programme.
- The Conference starts with a voluntary Weekend Programme, a two-day, free of charge, assembly with exciting team-building activities and adventures.

Agenda and Registration
http://oncourse.ericsson.se/learning-market
Click on 'Software Engineering, SSDP and ESAP' to check the agenda and to register. Note that you register for the weekend programme separately.

Senior Software Designers Programme Objectives
SSDP is sponsored by Ericsson System Software Initiative (ESSI) and has the overall objective to be a forum where Senior Software Designers can exchange experiences and discuss Software Engineering within Ericsson. Responsible ERA/T/Z Hans Nihlen, Hans.Nihlen@era.ericsson.se

Martin adds speed to environmental efforts

He is known for making a 100-percent effort and for being able to make things happen. He is Martin Davies, who has been appointed to implement the new environmental management system throughout the entire company.

"Huge amounts of extremely positive environmental work are done at Ericsson, but we don't have a clear focus and progress within the organization is patchy," says Martin Davies. "It will now be my task to systematize and organize environmental efforts so that they reach the entire organization – on all levels and through them to the customers."

Martin is especially keen on the global perspective. He is British and, with an international past in the U.S. and China, he will be using London as his base. However, during the preparatory phase, he will continue to spend a lot of time in Stockholm, where he has worked for the past eighteen months as head of operations development at the Business Unit TDMA Systems.

"I consider the key issues to be spreading the message that our systems have enormous environmental potential and that, by having a more clearly defined environmental profile, we can achieve business advantages in our customer relations. That is why it is important that everyone at Ericsson acquires an enhanced environmental awareness of the key environmental impact Ericsson has and that environmental thinking really makes an impact in our day-to-day operations. We must also use the expertise that exists and spread it throughout the entire company."

Systematic

Martin laughs frequently and is very forward in his manner. However, this does not stop him from being goal-oriented and systematic in his work. And this is what his new role is all about.

Martin's new formal title is "Global Project Leader for EMS Implementation." This means that he will implement Ericsson's new environmental management system (EMS) globally throughout the organization. Martin's name first cropped up during Ericsson's major environmental meeting in Madrid at the beginning of June this year, when about 70 key personnel from the Ericsson Environmental Managers' Council gathered for a conference on EMS. In

the next month, he will start as project manager for implementation work.

"We have environmental goals, people should know what they are, and how they can contribute. The project will provide the infrastructure to support us achieving the goals and is currently organized into 'topic areas,' that is, various subject areas with people appointed to positions of responsibility."

The various areas are environmental aspects, production, research, environmentally compatible design, laws and standards, end-of-life treatment (handling of redundant equipment), training, and so forth. One of the main communications forums will be the Internet web site where each area, with the help of a web editor, will inform on and publicize its activities, and connect interested people.

It will matter in a hundred years

"It is common to say 'What will it matter in a hundred years?' when something is not going too well," says Martin Davies. "But the environment is an area to which this does not apply. Because this is about the future – the future of our children and grandchildren."

Accordingly, this is an area in which everyone can feel a sense of satisfaction by contributing in some way to one of the overall objectives for Ericsson's environmental efforts, such as reducing the use of energy in systems and products or phasing out environmentally harmful substances from products.

"It is extremely important that we now have a unifying force at this complex point in our environmental work on standardization and certification, and so on," says Mats-Olov Hedblom, Ericsson's environment manager. "It requires coordination so that it harmonizes with the other work methods applied within Ericsson."

Lars Cederquist
lars.cederquist@lme.ericsson.se

www.lme.ericsson.se/environment

Martin Davies, who has been appointed to implement Ericsson's new environmental management system throughout the entire company.   Photo: Anders Anjou

Environmental info on the Net

In the near future, environmental declarations for Ericsson's various mobile phones will be available on the Internet. It will be possible to access these via a link from Ericsson's external environmental web site and from the new Internet site for Ericsson's consumer products.

On these sites, information will be available about the most important environmental aspects of older phone models, as well as the new T28 and T18 models.

Environmental declarations are an objective way of providing environmental information about the products' material content, energy consumption, batteries and recycling. The production of environmental declarations is one of many ways in which Ericsson is showing its willingness to gradually improve its products from an environmental perspective.

"Our environmental declarations are an attempt to give our customers relevant information, although there is currently no standard for the format of environmental declarations for mobile phones," says Anders Rydberg, environmental coordinator at the Consumer Products business segment.

Efforts to produce environmental declarations for other Ericsson products are also under way.

Lars Cederquist

www.ericsson.com/environment
http://mobile.ericsson.com

Information about the most important environmental aspects of Ericsson's various mobile phones, including the T18, will be available on the Internet.

Lucrative new packaging

The Germans have made huge progress in the environmental area, including their approach to packaging. Ericsson's MD110 PBX was previously packed in solid plywood boxes with metal corners. Several enterprise customers approached Ericsson in Germany and asked if it was possible for this to be changed.
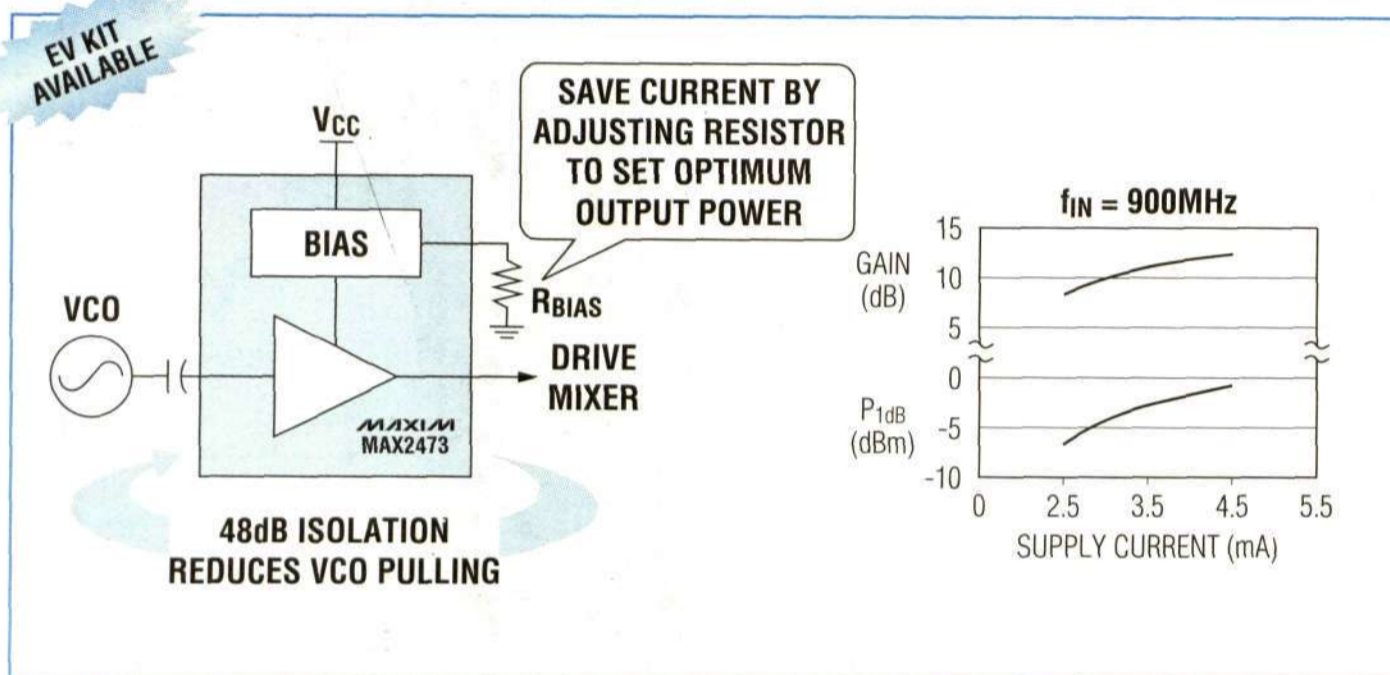
That was at the beginning of 1999. The Solid Design unit at Enterprise Systems tackled the problem. It was quickly found that using waxed corrugated board instead of plywood not only produced environmental benefits, but was also profitable. By changing the type of packaging, it was possible to save as much as SEK 1.2 million annually.

The product managers in charge of the MD110 decided to approve the production of new packaging. Now the corrugated board box, which still satisfies handling, transport and storage requirements, is in full production.

The Enterprise Systems environmental team also carried out a small life-cycle assessment of the new packaging, which showed that the difference between wood and board is not so great in terms of use of raw materials, processing and recycling. The major environmental benefits come from the lower weight, which reduces the environmental impact of transportation. Paying attention to weight – of products and packaging – has once again proved to be a very effective environmental measure.

Kari Malmström

DAG finds all numbers

Ericsson has developed a product for connecting databases without depriving the owners of control over their contents. The functions of the product, called Directory Access Gateway, DAG, include that of a telephone directory.

Today, all telecom operators have their own separate directory services. None of them are prepared to release data about their customers to a competitor. In today's society, it is not uncommon that one person has several subscriptions, such as both a wireline and a mobile connection. To find out information about multiple subscribers, it has been necessary to know the name of their particular operators and then contact each of them. This is no longer the case.

An Ericsson Radio Systems design unit in Stockholm suburb Älvsjö has developed a product for connecting databases without depriving the owners of control over their contents. The product, called Directory Access Gateway, DAG, is part of the Interactive Communication product line within the Wireless Internet Applications product unit.

The solution does not function solely as a service for directory inquiries about telephone numbers. In fact, essentially any database can be linked up, providing the user with a single access point to information from all information providers participating in the system.

Database link-up

Briefly speaking, DAG makes a number of databases searchable via an access point, a gateway or a question switch. The user is then able to search in all databases using one of the standard interfaces (LDAP, WEB and e-mail) supported by DAG. The owners and administrators of each individual database can decide exactly what is to be visible in the hooked-up system. The contents always remain in the separate databases, while the user has the impression of having access to a gigantic database. The operators decide the type of information that is to be searchable.

"Let's take a situation in which a number of mobile phone operators have their own customer databases that include names, mobile phone numbers and other specific customer data. The information is owned and updated by the individual operator, who also controls the actual information that is presented via DAG. The address and other customer data could, for example, be made available only to the owner of the particular database, while the name and telephone number is presented to those using DAG as a search tool," explains Thommy Eklöf, one of the developers of DAG. "Since this does not entail the creation of a new database, but of searching in different data
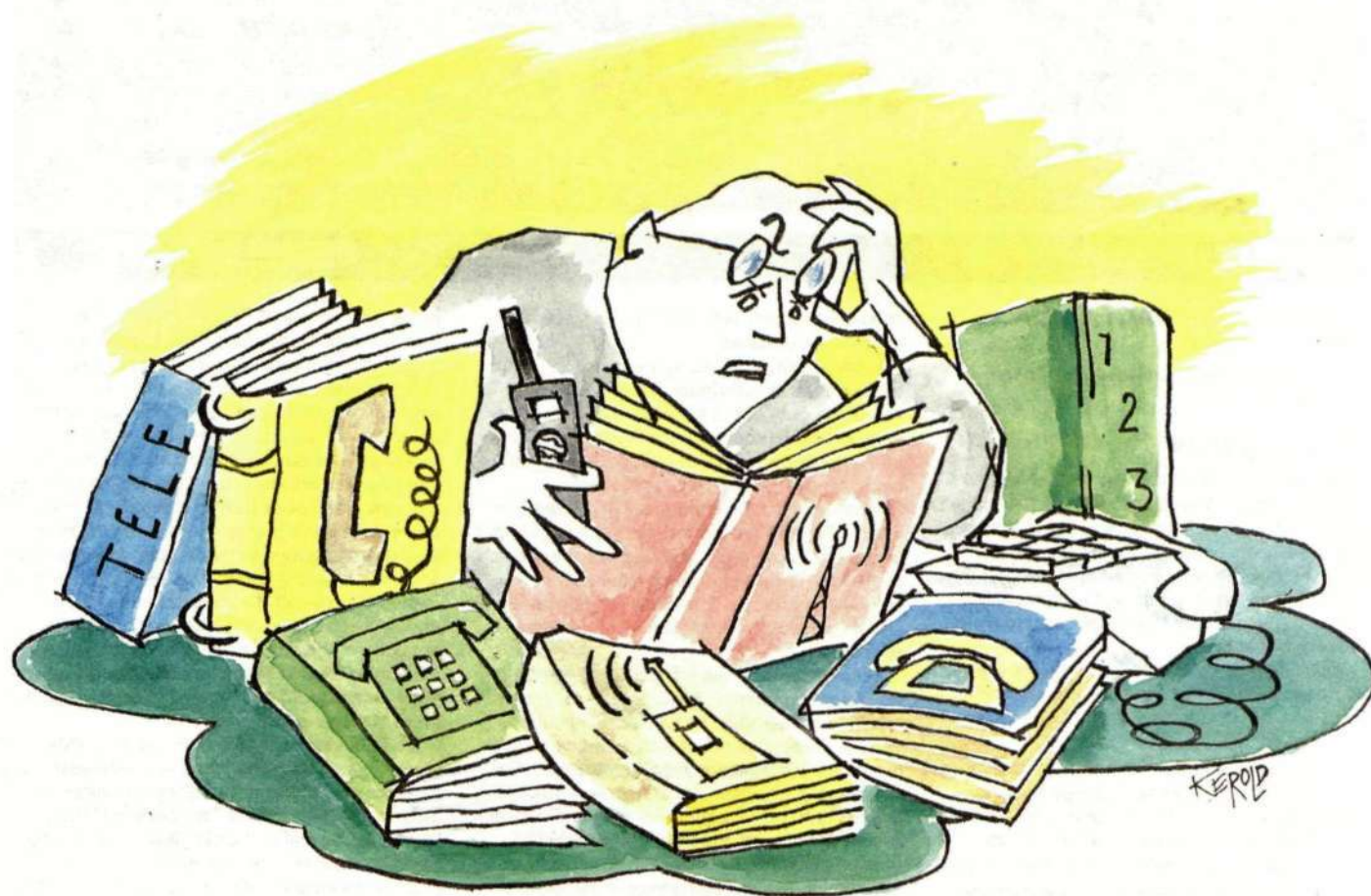
bases connected to each other, all information remains fresh. It is updated at only one location."

The DAG project is an offspring of the TIS-DAG project, Technical Infrastructure for Swedish Directory Access Gateway, in which Ericsson was a participant. The aim of the TIS-DAG project is to provide a solution for a uniform telephone directory containing all numbers, but without centralizing the operators' databases.

DAG already being used

Sunet, the Swedish universities' net, is currently using DAG to link the country's universities and colleges. An EU-funded project, DESIRE, also uses DAG in its tests as a tool to connect various research and education databases. Danderyd Hospital outside Stockholm is another example of an implementation of DAG. This hospital is currently using a DAG prototype to make its patient records more readily available.

"Using DAG for medical records is an excellent example. If anyone falls ill during a journey away from home, the hospital visited by that person can easily access the relevant infor-

mation from the patient's records, despite it actually still being part of the home hospital's database," says Thommy Eklöf.

Hospital and other organizations have a certain amount of sensitive information that must not be made public. With the help of DAG, it is possible to easily block access to such data and make only a certain section of the database available.

Ericsson is currently the only company that provides such a solution. To ensure that DAG works simply and effectively, commercial interfaces and standardized indexing methods and catalog protocols have been chosen in accordance with IETF (Internet Engineering Task Force). Inquiries can be made from a wireline telephone, a PC or a mobile phone. Future releases of the product will contain support for WAP access to DAG.

Why doesn't DAG already have many more users?

"The systems we offer frequently presuppose that operators are willing to cooperate with each other in order to exploit the advantages offered," says Thommy Eklöf.

"This means that the operators will have to

take a much broader view of the concept of business development and cooperate with each other, so that all the parties concerned can reap the benefits. By using DAG, the participating operators will be able to provide better customer service, create new services, generate new revenue flows and satisfy many of the demands and desires that already exist in the deregulated mobile phone market. Such willingness is already noticeable in many markets round the world.

Patrik Lindén and Ulla-Karin Höynä
patrik.linden@lme.ericsson.se

See how the EU uses DAG on the web site: http://www.desire.org

You'll find Sunet's application on http://tis-dag.sunet.se

For additional product information and contacts:
http://www.at.etx.ericsson.se (technology)
http://www.mega.al.etx.ericsson.se/secr/interactive_com/index.html (market)

Ericsson's DAG solution enables you to search for information without having to look through different sources. Instead, several databases are connected, although users get the impression that they are accessing only one. Illustration: Kerold Klang

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ERIC & SON

THE NEW PRESIDENT IS GOING TO WORK IN LONDON AND STOCKHOLM. TALK ABOUT COMMUTING!

HE'LL HAVE TO DEVOTE 50% OF HIS TIME TO LONDON 50% TO WORKING HERE AND 50% TO TRAVEL.

... OR CLONE HIMSELF

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THAT'S NOT THE PRESIDENT. IT'S ONE OF THE PEOPLE...

... WHO REPLIED TO OUR NEW JOB AD!

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REQUIREMENTS:
- NORTH SWEDISH DIALECT
- GLASSES
- GRAYING AT TEMPLES
- ABOUT 55 YEARS OLD
- ABOVE AVERAGE HEIGHT

ERIC&S

KEROLD KLANG / JOURNALISTGRUPPEN

Yet another proud T28 user. King of Sweden, Carl XVI Gustaf, visits Ericsson's Head Office in Stockholm during October 1999.

Photo: Peter Nordahl

vacancies
AT ERICSSON

■ **This is a selection of vacancies within the Ericsson corporation. They are also published on http://www.ericsson.se/jobs/international.shtml, International Openings, updated every second week.**
To advertise: mail your adverts to employment. adverts@lme.ericsson.se.

Contact No. 17 1999   **Updated October 18**

ERICSSON MOBILE COMMUNICATIONS AB, KUMLA

EPC is a new Ericsson joint venture company in Nanjing, China.

Test engineer

● We need a qualified test engineer on short-term contract for 3 months to help us start up production lines for T18sc and A1018sc. We have good engineers but without the special know how of Kumla/Ericsson test equipment.

Your job will be to set up test equipment but also to train and teach test people how to maintenance test at EPC.

You should be good in test application, have some educational skill and of course speak English.

Contact: Jan Szaruk, +86 25 480 1611, Mobile +86 1360 519 7937, jan.szaruk@epc.ericsson.se. **Application:** Ericsson Mobile Communications AB, CP/TH Gwen Anderson, Box 901 692 29 KUMLA, gwen.anderson@ecs.ericsson.se.

ERICSSON RADIO SYSTEMS AB, KISTA

Product Marketing Managers In Malaysia

ERA GSM Systems Product Units BTS, BSS, CSS and PSS will locate part of our Marketing and Sales Support for China and Asia-Pacific in Kuala Lumpur, Malaysia. Our goal is to enhance sales by giving expertise support to the Market Units in the same time zone and region.

● The positions, which are long-term (1year) contracts, are open for individuals fulfilling the following qualifications: Vast experience from products and solutions and extensive contact network within the concerned Product Unit. Vast experience from customer meetings and presentations through Sales and/or Marketing of GSM products University degree or corresponding education/training acquired through job experience. Communication skills and fluency in English Self motivated and driving with good co-operation skills.

The job includes on-site support to our Market Units in China & Asia-Pacific. Thus, extensive travelling within the region is required.

Contact: All positions: Per Arvidsson, +46 70 514 0872 or +46 8 404 8115, per.arvidsson@era.ericsson.se. BTS: Mona Benlaib, +46 070 577 2529 or +46 8 404 7621, mona.benlaib@era.ericsson.se. BSS: Per Arvidsson. CSS: Johan Dahlström, +46 70 340 31 50 or +46 8 757 24 21, johan.dahlstrom@era.ericsson.se. PSS: Kjell Arvidsson, 46 70 561 3346 or +46 8 757 0999, kjell.arvidsson@era.ericsson.se.
Application: Product Marketing Managers In Malaysia, Ericsson Radio Systems AB, LV/MS, Monica Wänseth, 164 80 STOCKHOLM, monica.wänseth@era.ericsson.se.

ERICSSON RADIO SYSTEMS AB, STOCKHOLM

Ericsson Ukraine (UKR) is a young company with business inthe Ukrainian market covering a wide range of Ericssonproducts. The head office is located in Kiev, the capital, whichis a very green city with turn of the century architecture and pleasant atmosphere.

We are now offering the following possibilities in our Field Support Organisation, located in Kiev:

Senior Support Engineer,TDMA to Ukraina

● Objectives: To ensure customer satisfaction by deliver ofquality products & services, and adherence to the Ericssonvalues of perseverance, respect & professionalism.

Main responsibilities: Take care of 1 private TDMA operator (DCC)with 6 MSCs and 30 000

subs. Negotiations with DCCregarding service contract are underway.

Responsibilities: To act as mentor to less experienced staff. To participate in emergency duty. To be able to carry out all activities without supervision. To be fully conversant with the procedures and processes required to carry out the task. To lead investigations of system problems.

To understand the importance of customer relations. To participate in technical meetings and lead them if required. To be able to solve complex faults. To further develop a network of contacts within Ericsson. To actively promote and assist in competence development of less experienced staff.

Requirements for the Job: Technical degree or equivalent experience. Requirements for senior system engineer must be fulfilled. Minimum two years in Ericsson as senior system engineer. Ability to work in a team and lead it if necessary. Level 7 in oral and written English (scale 1-10). Willingness to travel as required by the job. Practical knowledge of tools and instrument currently used as required by job.

Authority: To write emergency corrections. To approve software solutions written by less experienced staff. To reject TR/CSR answers without consultation. To approve the release of documents and upgrade/update packages. To contact external (eg.GRC) help-desks when necessary.

Senior Support Engineer, PSTN to Ukraina

● Objectives: To ensure customer satisfaction by delivery of quality products & services, and adherence to the Ericssonvalues of perseverance, respect & professionalism.

Main responsibilities: Take care of 2 private operators (TIK,Optima), 1 AXE each and Ukrainian Railway (UZ), 2 AXEs. Negotiations with Optima and UZ are underway for additional AXEs.

Responsibilities: To act as mentor for less experienced staff. To participate in emergency duty. To be able to carry out all activities without supervision. To be fully conversant with the procedures and processes required to carry out the task. To lead investigations of system problems. To understand the importance of customer relations. To participate in technical meetings and lead them if required. To be able to solve complex faults. To further develop a network of contacts within Ericsson. To actively promote and assist in competence development of less experienced staff.

Requirements for the Job: Technical degree or equivalent experience. Requirements for senior system engineer must be fulfilled. Minimum two years in Ericsson as senior system engineer. Ability to work in a team and lead it if necessary. Level 7 in oral and written English (scale 1-10). Willingness to travel as required by the job. Practical knowledge of tools and instrument currently used as required by job.

Authorities: To write emergency corrections. To approve software solutions written by less experienced staff. To reject TR/CSR answers without consultation. To approve the release of documents and upgrade/update packages. To contact external (eg.GRC) help-desks when necessary.

FSO Manager to Ukraina

UKR FSO is a multisystem FSO(TDMA, GSM, PSTN) with wide range of customers – from private Joint Venture operators with international ownership to Sovjet style state companies.

● Objectives: To be accountable and responsible for the efficient running of the unit and to ensure customer satisfaction by delivering of quality products & services, and ad adherence to the Ericsson values of perseverance, respect & professionalism.

Responsibilities: To manage the unit on a day to day basis. To report the activities of the unit to the head of the department. To approve agreements with other parties within the own area of responsibility. To ensure that the FSO Office

Binder with technical procedures and guidelines is maintained at the latest level. To participate in staffing the unit with competent personnel through internal and external recruitment, in line with the budget. To participate in setting up the objectives for the unit. To conduct regular unit meetings. To ensure that all activities within the unit meet the Ericsson quality standards. To handle personnel issues such as competence development, resource planning and to run PD talks for unit staff. To motivate staff, build a unit spirit and encourage the Ericsson values to ensure an enthusiastic overall climate within the unit. To ensure that performance criteria as outlined in any Service Agreements are adhered to. To be a role model for unit staff. To maintain good customer relations. To be prepared to act for department manager as required.

Job Requirements: Minimum a technical degree or equivalent experience. At least 6 years experience of working in the Telecommunication Industry of which at least four years in Ericsson. Level 8 in oral and written English (scale 1 - 10) Good knowledge of documentation control. Good knowledge of ISO 9001 standards. Willingness to travel.

Authority: To approve over-time. To sign travel orders within the country. To roll-outs of released packages. To allocate resources. To approve expenses in line with guidelines from Finance department.

Contact: Anders Briandt, +380 67 220 3414, anders.briandt@ukr.ericsson.se.

ERICSSON RADIO SYSTEMS AB, STOCKHOLM

Ericsson Telecommunications Romania SRL was established in 1994 and has today over 200 employees working with all Ericsson products. In 1997 ETR signed a contract with Mobifon, one of the mobile operators.

This year we have signed another contract with Cosmorom. The tempo is very high and our customers are in a tough competitive situation. The tempo is very high and our customers are in a tough competitive situation. We are now looking for proffesionals for the following positions: We are now looking for

APZ/IO Support Engineer within our Support group.

● The objective of the job is to provide technical support in one or more of the system nodes that are operational in the customer network such as HLR, MSC/VLR, AUC/EIR, SMS, MIN and BSC. The current APZ/IO types are APZ 212 11, APZ 212 20, APZ 212 25, IOG 11 and IOG 20. You will also play an active role in providing support and advice to the local engineers and build up the local competence. This requires close relationship and interaction with the customer, strong technical background that enables the APZ/IO engineer to conduct fault analysis, trouble shooting and program correction handling in an efficient manner.

Requirements: You have experience of working within Customer Support, a good knowledge of support activities, providing emergency and day to day support, trouble report handling, troubleshooting on/off sites, system upgrade. You have good command of English.

A new member to our BSS and SS teams

● The objective of the job is to provide technical support in one or more of the system nodes that are operational in the customer network such as HLR, MSC/VLR, AUC/EIR, SMS, MIN, BSC and BTS.

You will also play anactive role in providing support and advice to the local engineers and build up the local competence. This requires close relationship and interaction with the customer, strong technical background that enables

you to conduct fault analysis, trouble shooting and program correction handling in an efficient manner.

Requirements: You have experience of working within Customer Support, a good knowledge of support activities such as; troubleshooting, writing PLEX/ASA, APZ/IO recovery, trouble report handling (MSS and MHS) and system upgrades. You have good command of written and spoken English.

Network Support Group Manager

The Network Support Group is mainly responsible for the 24-hour emergency support, the CSR and TR handling and correction package rollouts. There are 13 support engineers in the group working mainly with GSM, but also with NMT and fixed networks.

● We are now looking for a new member to run the NSG. The person we are looking for is openminded and has the ability to put in the extra effort when it is needed. You will play an active role in providing support and advice to the local engineers and build up the local competence. You will also be involved in tuning our processes to make the NSG more efficient.

This requires close relationship and interaction with the customer, strong technical background that enables you to conduct fault analysis, trouble shooting and program correction handling in an efficient manner.

Requirements: You have experience of working within Customer Support, a good knowledge of support activities such as troubleshooting, PLEX/ASA, APZ/IOG recovery, trouble report handling (MSS and MHS) and system updates/upgrades. You have good command of written and spoken English.

Contact: Joakim Karlsson, NSG Manager, Joakim.Karlsson@etr.ericsson.se or Simona Serban, Human Resource Manager, Simona.Serban@etr.ericsson.se.

ERICSSON RADIO SYSTEMS AB, SUNDBYBERG

Project Controller

● We now have interesting challenges for you within our new GSM-contracts in Africa. You will participate in the projects having the controlling responsibility during the implementation. This means implementing correct invoicing procedures, budgets and cost follow-ups, internal administrative routines and tools and in general represent the financial competence needed within the project management team.

As this is a demanding position you must be flexible and sensitive in your relation towards the customer and the project team. You should also be familiar with the ERICSSON way of working and have a strong personal drive and be creative in finding solutions. You are a CAN DO person. The formal background is B.Sc.in Business Administration and some years of experience from ERICSSON. The language is French and English. If you send your application by E-mail, please send a copy to Bengt Franzén and Fredrik Westman.

Contact: Bengt Franzén, +46 8 404 7943, bengt.franzén@era.ericsson.se, Fredrik Westman, +46 8 585 34623, fredrik.westman@era.ericsson.se, Anita Malmström Wallner, HR +46 8 404 2429.
Application: PROJECTCONTROLLER, Ericsson Radio Systems AB, SG/ERA/LP/H Anita Malmström Wallner, 164 80 STOCKHOLM, anita.malmstrom-wallner@era.ericsson.se.

ERICSSON BUSINESS NETWORKS AB, SUNDBYBERG

DESIGN ENGINEER SAUDI ARABIA

● For a Dedicated Networks Project in Saudi Arabia we are seeking a Design Engineer on a long-term basis to be responsible for performance of general design activities. The project involves the construction of integrated oil and petrochemical facilities at multiple sites in the Kingdom of Saudi Arabia. This means installation of base product services for oil and refined products, including storage plants, refineries, pipelines, distribution terminals, bulk plants and receiving stations. Ericsson's involvement is to provide an integrated telecom solution including voice, data and video technologies.

For this position you should have a solid experience from design and implementation of one or more of the following: PABX. Power Systems. Cable Systems (including Fibre Optics). You should also possess good communication skills in both written and verbal English and have the flexibility

to work both independently and as a team member in a multi task environment.

Contact: Eva Kling Eldselius, +46 8 764 0774, eva.kling-eldselius@ebc.ericsson.se, Per Svahn, +46 8 764 0420, per.svahn@ebc.ericsson.se.
Application: DESIGN ENGINEER SAUDI ARABIA, Ericsson Business Networks AB, SL/EBC/PEBD/H Eva Kling Eldselius, S-172 87 SUNDBYBERG Sweden, eva.kling-eldselius@ebc.ericsson.se.

ERICSSON RADIO SYSTEMS AB, KISTA

ESA is currently staffing the organization to handle the 3:rd mobile license business opportunity. We are now offering major opportunities for qualified candidates: Customer Project manager, Mobile Network Design Engineer and Radio Network Designer.

Customer Project Manager

● As a Project manager you will plan and run implementation projects. You will be responsible for planning, follow up and finishing all activities to fulfill the contracted budget in accordance with the customer and our own expectations. The project management will include relations with many internal and external subcontractors.

You should posse qualifications that make it easy for you to motivate, inspire and guide the project team members. You are an experienced and recognized leader as well as an active member of the project team and a 5-year experience in managing mobile system projects.

Radio Network Designer

● As an RND Engineer at ESA you will be working with nominal cell plans, radio coverage predictions, frequency planning, site surveys, site nominations, RF measurements, BSS parameter settings and initial tuning.

We want you to have minimum 3 years of relevant experience.

Mobile Network Design Engineer

● You have the knowledge of input and output data for a mobile network design department, features in different releases and their connection and impact on HW in different nodes, how to interpreted RFQ's. You also have experience from computer based tool and measurement instruments in this area and a good sense of customer orientation.

Relevant to all positions: You will be based in Johannesburg, South Africa, and the assignment is for 6 months to start with. After a successful full time period the assignment could be extended. We are looking for persons that are independent, self-motivated with strong communication skills. You should have a university degree, preferably a MSc, fluency in written and spoken English and extensive experience from international assignments of this type. We would like to receive your application not later than last of October 1999.

Contact: Jaan Warnhoff, +27 83 212 3007, mobile: +27 83 212 4552, jaan.warnhoff@etx.ericsson.se, Mats Storsten, +46 8 757 39 05, mats.storsten@era.ericsson.se.
Application: Ericsson South Africa (Pty) Ltd (ESA), Ericsson Radio Systems AB, KI/ERA/LI/HA Lise-Lotte Ramneby, 164 80 Stockholm, lise-lotte.ramneby@era.ericsson.se.

UMTS/IMT-2000 OPPORTUNITIES IN JAPAN

In order to meet the challenges presented by the future deployment of a 3rd Generation UMTS/IMT-2000 Network in Japan the Customer Support Division within Nippon Ericsson is looking for a number of highly motivated and talented managers. These key personnel will participate in the implementation of the UMTS network and also be responsible for the build up the support organization that will be needed to provide the highest possible level of support towards a very demanding market.

All positions require a strong customer focus and the successful candidate should be able to work well within a team environment and be able to work with people from a large range of cultural backgrounds. English fluency is essential with proficiency in the Japanese language being highly desirable.

Implementation Manager

The successful candidate will be responsible for planning and managing the rollout of the complete UMTS Core and Radio Networks. He/she will lead a team of Ericsson installation personnel and planning staff as well as be responsible for the co-ordination of the various sub-contracting teams involved with the site preparation and hardware installation. The applicant should have been previously involved in working on similar projects in a customer focused environment and have a proven track record in this field. A degree or diploma in the technical/engineering or equivalent is also required.

Technical Managers

Several positions are available within the support organization in this area. The technical managers should have sound experience in the system support of CMS30 or GSM networks and be able to lead a team of system engineers both during the installation testing/integration phases of the UMTS Deployment. They will also be responsible for providing a high level of technical support towards the customer to ensure the high availability of the network to achieve high customer satisfaction. These managers will also be involved in some aspects of the deployment planning and the competence planning for the support organization. A degree or diploma in the technical/engineering or equivalent is also required.

Supply Manager

In order to secure success in the deployment project a sound supply process will be needed to guarantee the timely delivery of hardware and the co-ordination of supply between Nippon Ericsson, other Ericsson companies and the external contractors. The successful candidate will be responsible for establishing this process an3d working closely with the project team to ensure a total supply methodology is established including contingency planning. Previous experience in a similar position is essential and formal qualifications are also required.

Contact:

Greg Atkinson, IMT-2000 Support Manager,
E-Mail: greg.atkinson@nrj.ericsson.se,
Phone: + 81 45 477 5712,
Fax: + 81 45 477 5730

BRAND NEW CMS30 SYSTEM VERIFICATION IN JAPAN

CMS30 System verification is currently being moved from Sweden to Japan and we are now building up a new department in Yokohama to take care of this task. The unit will become a combined UNIX, circuit and packet switched competence center – an unique opportunity for you that wants to develop further within Ericsson telecom product line.
In Japan, CMS30 circuit-Switched network capacity will grow 50 % within the next year to around 80 nodes (HLR + MSC). Add-on to this success, demands for wireless internet applications and TCP/IP based Technology are moving equally with tremendous pace. During 2000 Q3 – 2001 Q1, we are going to system verify and deliver the first CMS30 Packet-Switched Product to our main Japanese customer (first step a 12 node packet data network).

To meet the above challenges we are looking for people. There are open positions for Managers, Trouble Shooters and System Verification Engineers with Circuit Switched, Packet Switched or UNIX competence, see below:

2 Resource Managers, AXE and UNIX

Managing section including around 20 people. Manage, plan and follow up of the work/tasks assigned to the section and to provide estimates of the effort and duration required. Co-ordinate the work with co-operating units. Define and follow up on section goals. Responsible to ensure quality of the deliverables (products, processes and services) with focus on system robustness and satisfying customers needs.

1 Technical Manager, System Verification

Will be the head of a group of 3-5 senior system engineers. The group will be the back-bone competence for the system verification unit. The group will be involved in technical investigations, set the standards and define strategies for verification of the CMS30 products and in this way secure the system verification quality short term as well as long term.

1 Project Manager, Competence & Process

To support line unit with competence planning, process development and maintenance. Other line issue where project is required will be driven by this position.

1 Test Coordinator, Phase 10, Packetdata

Will be responsible for the AD planning and co-ordination of FT, Verification and Implementation test execution

You have 3-7 years experience (depending on position) from 2 of the areas: Technical customer support, System Verification or Design. You can motivate, support and lead people in difficult situations, you are quality minded and are ready to support and show responsibility when needed. You have a profound interest in making people successful.

Master Verification Engineers (AXE and PacketData)

Solves complex faults of a critical nature. Analyses the impact of new application systems to be introduced into the customer's network. Participates as technical expert in standardization forums as well as customer and design discussions and investigations. Recommends system verification standards and strategies. Give support to verification testers and transfer competence to local engineers.

(Senior) Verification Engineers (AXE, PacketData, OSS, SMAS, MXE)

Prepare and execute system verification tests. Give support to verification testers, transfer competence to local engineers, technical investigations and trouble shooting. Participates as a technical support in customer and design discussions and investigations. Involved in definition of system verification standards and strategies.

You have 3-7 years experience (depending on position) within AXE, PacketData, OSS, SMAS, MXE or other UNIX systems from 2 of the following 3 areas: Technical customer support, System Verification or Design. The ability to work within and for a team is essential for being successful. You are driven by technology, you are self-motivated, and you can comprehend problems of complex nature.

Contact:

Lars Hansen, Manger of CMS30 System Verification:
Tel: +81 45 477-5531, Email: lars.hansen@nrj.ericsson.se

ERICSSON RADIO SYSTEMS AB, KISTA

OPERATION & MAINTANANCE SPECIALISTS IN FIXED NET - TO WORK IN AUSTRIA

Take the opportunity to get experience from working as a contractor on one year-assignment for Ericsson cutomer in Austria! Established in June 1999, Ericsson Services is the new name for service excellence within Ericsson, a Business Unit in the Network Operators & Service Providers (SO) segment. Ericsson Services combines the best elements of SO's service unit network to create a single focused organization.

The result - a dynamic resource which aims to build on our impressive sales growth and maximize business opportunities well into the new millennium. Product unit Managed Services at Ericsson Services provide "Advice, Solutions and Services" to network operators around the world. We provide expertise in both the commercial and technical aspects of network operations and work in partnership with Market Units, Regional Offices and Local Companies.

Managed Services 'Resource Office' is now looking for Ericsson employees who are interested to join our project organisation on one-year contract job, starting on November, 1st. We are looking for several categories:

Network Surveillance Technician

● The candidate should have a long experience working with AXE Ericsson fixed network, implementing, commissioning and maintaining switches. He/she will work in a Network Operation Center and handle: all types of alarms coming from the AXE&SCP switches, SDH and MINILINK transmission equipment. handle these alarms through the X-MATE and ETNA unix operative systems.

System Engineer Switching

● In addition to the above, this position needs a previous experience as a troubleshooter on the network level. Familiar with implementing CNA's and doing Application system changes. Being able to perform Data Transcripts for changes to the network. He/she should also be familiar with Ericsson IN-solutions, being able to locate faults

in this functionality as well. The position includes local travelling and on-call duty.

System Engineer Transmission

● The candidate should have very good experience in the SDH, MINILINK transmission equipment. He/she should have been working with ETNA. The position includes local travelling and on-call duty.

System Administrator

● As a system administrator, you will be responsible to operate and maintain the management system which are: X-Mate, ETNA-NEM and SMAS, you should be capable of manipulating data and adapt form and printing reports, you should be capable of answering questions related with the IT.

Field Maintenance Technician

● The candidate should have very good experience in network maintenance and AXE at functional level. Good experience in the SDH, MINILINK transmission equipment.

As a field maintenance technician, you will receive and analyse trouble ticket information, corrective action to the network. Make routine maintenance in the network, spare part handling and inventories, site security. The position includes local travelling and on-call duty.

Please, apply in writing with full Curriculum Vitae, containing details of your education, experience and two references including name of your current manager.

Contact: Rolf Jangenby, +46 8 4042605, Jangenby@era.ericsson.se.
Application: O&M Specialists in Fixed Net, Ericsson Radio Systems AB, Resource Office, ERA/GP/OZO, 164 80 STOCKHOLM, Jangenby@era.ericsson.se

ERICSSON RADIO SYSTEMS AB, SUNDBYBERG

Join the Italian Astrolink Team. Satellite Systems - a new and challenging business for Ericsson. Satellite systems will play an important role in providing communication services to subscribers in remote areas within the next coming years. Satellite operators will offer the market competitive dual-mode phones, roaming possibilities

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ERICSSON SVERIGE AB

Ericsson Sverige AB is Ericsson's new company for marketing in Sweden. We operate on one of the world's most exciting and most de-regulated markets, with an infrastructure for tele- and data communication that is under continual expansion. Ericsson Sverige AB's customers are on the leading edge in tele- and communication and IP. They demand rapid delivery of services, products and solutions within these areas. Our customers are operators as well as private and public organizations in Sweden. Approximately 600 people with strong customer focus work in the company. We have offices in towns including Malmö, Kumla, Göteborg and Nynäshamn. Our head office is in Kungsholmen in Stockholm.

Nordic Shared Service Unit (SSU)

A powerful Nordic Shared Service Unit (SSU) for Services will be organized and Established on January 1 – 2000, this will combine the existing service organizations in Denmark, Sweden, Finland and Norway. The scope for the SSU is: Customer Services/Professional Services for the Operator Customers. Customer Services for Enterprise Customers. The measurements for the SSU are: Customer Satisfaction. Net Sales. Net Sales Growth. Product Contribution. The vision with the new SSU's organization is to bring together expertise currently scattered throughout various organizational units in the Nordic countries. As a result of this we will create a strong service organization, with operations characterized by efficiency – an organization that also provides tremendous opportunities for powerful and innovative sales. A Nordic Shared Service Unit will enable us to benefit from each other's expertise and it will also increase our customer base.

To create this powerful Nordic Shared Service Unit (SSU) and to meet an exciting future we are looking for the following senior managers:

TECHNICAL HELP DESK

The Help Desk (HD) is the technical interface to our customers. The HD language will be local. The purpose of the Help Desk is to improve customer satisfaction and Ericsson's image as one of the world's best service support resources and to lead to profitable Customer Service business.

The help desk is responsible for:
● Customer Satisfaction.
● Resources/Competence. In Service Performance management (ISP).
● Delivery Precision.

COMPETENCE UNIT

To achieve cost efficiency, the SSU will be organized in Competence Units for AXE-fixed/mobile, Datacom/IP and Access/Transmission/Unix. All product related services, as support, implementation and training will be delivered from the competence units. AXE implementation will be sourced from external suppliers. Training will mainly be sourced from training centers. The competence unit is responsible for all competence within the Units and for delivering Services in an efficient way.

The competence units are furthermore responsible for:
● Customer Satisfaction.
● Resources/Competence.
● Margin in delivered services.
● In Service Performance (ISP).
● Delivery Precision.

MARKETING and SALES

Focus on Sales and Growth, the goals are a big challenge for Marketing and Sales. M&S will manage the service product portfolio and define strategies and work inclose co-operation with the KAM's (Key Account Management) who owns the commercial contracts and the customers.

M&S constantly develop new business within areas such as system integration and network management. Furthermore M&S have to focus on analyzing the existing support contracts and renegotiate the contracts that do not contribute to the financial target.

Marketing and Sales is responsible for:
● Product contribution for the total Service Product portfolio.
● Net Sales.
● Net Sales Growth.

PROJECT MANAGEMENT

Project Management works with Customer projects such as implementation, support and integration and is responsible for Sourcing and Procurement, Service Provisioning and the TTC process.

Project Management is responsible for:
● Customer Satisfaction.
● Delivery Precision.
● Project according to budget

Steering: The managers report to the head of the Nordic Shared Service Unit.

Requirements for all positions:
We believe that your formal education and experience consist of Academic degree and at least 10

years of working experience, with 5 years in the Telecom or IT industry. You have a wide contact network within Ericsson and have ambition and drive to succeed. Team player with good communication skills. You like to work in multicultural environment. You are able and like to travel. You are able and like to work in cross-functional teams. Can create strong relationships. Able to drive and create new innovative ways of working cross-functional. Your have high level of business competence.

Other keywords to you are:
● Initiative.
● Ambition.
● Fun.

For Sales and Marketing:
● Experience of Sales and Marketing within the service area.
● Good market communications knowledge and able to communicate the marketing targets & messages

For further information please contact
Ewa Lundberg + 46 8 579 180 53
Ewa.Lundberg@ese.ericsson.se
or
Gordana Landén , Human Resources
+ 46 8 579 181 22
Gordana.landen@ese.ericsson.se

Send your application and CV no later than 99-10-31 to:

Ericsson Sverige AB
Human Resources
Gordana Landén
SE-126 25 Stockholm
Sweden

and now also broadband multi media services for voice, data and video.

In April 1999 we signed our first broadband satellite system contract with the Italian Ground Segment integrator, Telespazio. The system will offer multimedia services for voice, data and video to the global enterprise market.

The project is at the moment in the pre-study phase looking into the challenge to finalise the system architecture. Ericsson develops the satellite functionality based on our experience in GSM/GPRS/UMTS/ATM/IN and Billing. Close interaction with a number of external companies is needed.

Program Director

● As the Program Director you will be responsible for planning, follow-up and finishing all activities to fulfil the contract and budget in accordance with the customers and our own expectations. It is a complex multi-project environment with several internal and external subcontractors.

You should possess qualifications that make it easy for you to motivate, inspire and guide the project and to create synergism in the team. You have a broad international Ericsson network and have managed complex TTM and TTC projects. You are recognised as leader but would not hesitate to take active part wherever needed. It's a plus to have worked with design and system testing.

We need a person who is; outgoing, independent, self-motivated and has strong interpersonal and communication skills.

You should have a university degree, preferably M.Sc. (or similar) and good English written and oral skills.

Contact: Lars Bergström, +46 8 404 6705, lars.bergstrom@era.ericsson.se.
Application: Program Director, Ericsson Radio Systems AB, SG/ERA/KD/HS Mari Skoglöf, 164 80 STOCKHOLM, mari.skoglof@era.ericsson.se.

ERICSSON LTD, UK

PRODUCT MANAGER

● The Product Manager is responsible for developing product plans (medium term) and product programmes (current development activities) for the applicable SDH product areas, in order to maintain Ericsson's competitiveness in the market place. He or she provides the business sector with technical support for tenders and other marketing activities and interfaces with development groups throughout Ericsson. The product manager furthermore monitors the profitability of the

product, as well as handle the product life cycle.
The Product Manager is responsible and accountable for decisions regarding the technical direction of the products and for agreeing the technical and commercial elements of business development opportunities together with other organisations within Ericsson.

The product manager in particular has the following responsibilities: Develop product strategies and plans for specific product lines based on market requirements and trends. Maintain knowledge of developments in Transmission Systems and the market place including competitor information. Identify technical business opportunities and investigate required product evolution. Together with market and solutions organisations assess business opportunities, market values, and create business cases where appropriate.

Actively support marketing of the product with general product features, unique selling points and business cases. Document product requirements in accordance with customer requirements and Ericsson's product evolution strategies. Provide support to the market and operations organisations in their business activities. Take part in regular technical review meetings with customers. Present technical information to the customer as appropriate. Act as prime technical interface towards supplier for product development, product characteristics and product financial issues

Qualifications: Minimum Electronic Engineering Degree OR Combined Engineering/Business Administration Degree. At least 3 years in Product Management/related function

Skills / Competencies: In depth knowledge of SDH and/or associated products or technologies. Experience of marketing activities and customer relations. Understand specific products in the context of their market and competitors. Ability to focus on both internal and external customers and develop understanding of the issues they face in order to identify and meet their needs. Demonstrate confidence in persuading others to see the benefits of and agree to proposed ideas. Successful networker by proactively co operating with colleagues across the organisation and in the industry.

SENIOR SOLUTIONS ENGINEER

● Working within a team of engineers specialising in Solutions for Transport Network Systems, the Senior Solutions Engineer provides technical and engineering support within his/her specific technical areas of Transport Network Systems and provides a technical interface to projects and the customer.

The Senior Solutions Engineer possesses specific expertise in one transmission area. S/he has a customer focused approach to the development of total solutions for telecommunications operators globally.

S/he is closely involved with a variety of people from marketing, projects and product management as well as third party suppliers. Responsibility is taken for activities within the tender process requiring technical skills.

Customer contact is found at a number of points prior to the tender stage, where technical solutions are being discussed with customers, including making presentations and involvement in the project itself. The Senior Solutions Engineer takes a technical lead in customer meetings.

Key Responsibilities: Take responsibility for parts of a technical tender or bid. Take responsibility for providing the highest level of technical expertise on Network Issues. Actively contribute to business development by providing leading edge technical solutions. Provide expert support to contract management. Technically assess potential products and make appropriate recommendations. Participate in pre studies and feasibility, when required. Monitor and capture market requirements keep an updated picture of market commitments. Monitor future development and trends of transport systems. Keep the Manager informed of potential future projects and help to plan and manage resource requirements in terms of skills, tools and equipment.

Actively contribute to the development of technical competence within the Transport Network System in line with the changing needs of the business: eg through the transfer/secondment of personnel, use of expertise to provide on the job training.

Actively contribute to the continuous improvement process and the ongoing development of a quality culture by, for example, changing behaviour and identifying and implementing improvements to processes and activities and encourage others to do the same.

Qualifications, Essential: Degree or equivalent in engineering related discipline. Minimum 2 years experience in telecommunications environment. Experience of implementing software and/or hardware systems.

Experience in one or more of the following areas: Transmission Networks. Data Communication and Computer Networks. Telecommunication Management. Synchronisation. System evaluation and inter working tests. Emerging technologies eg ATM/IP

Desirable: Degree in Telecommunications or Computer Science. Experience from specifying and/or designing optical networks

NMS Solutions Engineers

Product Unit Transport and Transport Access (PT-TA/TPS/M)

● Reports to: NMS Solutions Manager (PTTA/TPS/M)The NMS Solutions Engineer has expertise in particular product areas. He/she is responsible for providing technical expertise to Marketing, Product Management and customer solutions on management solutions, management systems and associated data communication networks. The engineer has responsibility for ensuring that the customers' needs are met by providing profitable, high quality solutions to meet time and cost objectives. The job also carries responsibility for keeping him/herself and colleagues within the Solutions and Marketing teams up to date on the relevant Ericsson portfolio of products.

Key responsibilities: Understand fully the customers' business requirements in order to provide cost effective, high quality management solutions.Explain to the customer Ericsson's portfolio of products/systems, e.g. ETNA NEM and ETNA IMA.

Provide technical input to current and future bids and tender preparation, with the aim of securing future business and meet customer requirements. Give demonstrations and presentations to customers on management solutions and answer any technical queries arising out of these meetings.

Explain to the customer how different products interact with each other and recommend the best solution that meets their needs. Help identify improved working practices in terms of competence and expedient delivery of solutions in response to tenders; e.g.development of templates.

Maintain awareness of industry standards and regulatory issues. Understand the contractual implications of interactions with the customer. Help drive business development by providing strategic technical input at solutions level. Work with marketing, product management and the customer to evaluate and plan for prospective projects. Keep people informed at all levels

Qualifications: Essential: Educated to degree level in computer studies/electronics or other relevant subject. At least 1 years' experience within the telecoms industry. Able to perform, support and review system investigations. Knowledge of Transmission systems (SDH/PDH/DWDM), associated management systems and datacommunications networks.

Desirable: Basic knowledge of other telecommunications systems. (IP, ATM, PSTN, Data).Able to travel both within the UK and Overseas.

Skills and Competencies: Adapts to meet new challenges to meet present and future customer

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Product Handling – PRIM and PCAT

requirements. Ability to analyse complex issues and identify the most appropriate solutions. Generates and develops innovative ideas or improvements to achieve objectives. Communicates in a clear, concise and open manner. Ability to listens to others and adapt in a team environment

Contact: Chris Vaughan, chris.vaughan@etl.ericsson.se.

ERICSSON LTD, UK

Commercial Analyst

● Key responsibilities: The Commercial Analyst will be involved in the following areas of work: pricing, business cases, market analysis, channel performance, marketing strategy initiatives.

The main responsibilities will be: Development of and ownership of comprehensive pricing schedules. Development of pricing tools. Production of and maintenance of business case models. Recording of actual results and analysis against business cases. Development and maintenance of process to define project commercial viability.

Ownership of key commercial performance data which forms the base case for building the ESP, and work closely with ESP Champions to develop strategic scenarios around this base case which reflect realistic, yet challenging goals. Respond to requests for information from external market and industry analysts. Preparation and presentation of report as required.

Qualifications / Experience: A degree or equivalent qualification in a business related subject. A background in business or financial planning. Experience in a large matrix multi-national company. Telecomms experience desirable.

Skills / Competencies: First rate analytical skills. Ability to work under pressure and to demanding timescales. Ability to communicate effectively at all levels of the business, including presentations to senior management. Flexible approach and teamworker.

Contact: Recruting Manager, Geoff Payne, +44 1403 277 205, geoff.payne@etl.ericsson.se or HR Llynor Rathbone, +44 1403 277 557, llynor.rathbone@etl.ericsson.se

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ERICSSON CANADA

Technical Assistance Specialist

● Job requirements:Degree in engineering, engineering technology or science or equivalent work experience. Several years related experience in telecommunications. Working knowledge and understanding of cellular systems. ? Five years experience with Ericsson or equivalent cellular experience. Trained in CMS-8800 switching and cell site operations and maintenance (experience an asset). Trained in AXE Software (i.e. PLEX) with ability to troubleshoot on software level. Excellent oral and written communication skills.

Job Description: 24 hour "First Line" technical/emergency support for CMS88 networks. Preparations of procedure and verification of functionality of functions/corrections regardless of complexityResponsibility to define/verify a new AS. Communicate and assist customer/field personnel in technical and operational questions. Assist in emergency situations to resolve equipment and/or procedure errors. Planning, control and direction of a CNA implementation. Reporting and follow through of customer problems via various software tools.

Customer Interface Manager, Telesystems

● Job Requirements: Degree in engineering, engineering technology or science or equivalent work exp. Several years related experience in telecommunications. Working knowledge and understanding of relevant product lines. Three years experience within Ericsson or equivalent experience. Excellent oral and written communication skills. Demonstrated leadership/supervisory abilities. Basic ISO training on 9002 standard.

Job Description: Primary customer interface for all technical support issues for respective customer. Accountable for ISP, and Customer Service Requests (CSR) turnaround time for respective customer as per contract. First line technical support coordination towards the customer. Utilize assigned staff to analyze and resolve major problems in their respective areas.

Generate work processes for interface with customers and with second line support. Assist the customer in problem analysis and resolution either independently or utilizing assigned Ericsson resources. Monitor the flow of Customer Service Requests (CSR). Top ten issues coordination. 24 hour responsibility for crisis management. As-

semble/maintain customer performance statistics and disturbance reporting. Primary involvement with First Market Introduction of software, features, etc. Develop technical presentations. Help contract managers negotiate Service and Working level agreements. Develop and maintain a positive customer relationship.

Contact: Tim Danks, Manager, Customer Support, tim.danks@emc.ericsson.se

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ERICSSON UKRAINE

Senior Support Engineer, GSM

● Objectives: TRo ensure customer satisfaction by delivery ofquality products and services, and adherence to the Ericssonvalues of perseverance, respect and professionalism.

Main responsibilities: Take care of 1 private operator(Kyiv Star)with 2MSCs, 3BSCs according to existing service agreement.

Responsibilities: To act as a mentor for less experienced staff.To participate in emergency duty. To be able to carry out allactivities without supervision. To be fully conversant with theprocedures and processes required to carry out the task. To leadinvestigations of system problems. To understant the importance ofcustomer relations. To participate in technical meetings and leadthem if required. To be able to solve complex faults. To furtherdevelop a network of contacts within Ericsson. To actively promote and assist in competence development of less experienced staff.

Requirements for the Job: Technical degree or equivqlentexperience. Requirements for seniour system engineer must befulfilled. Minimum two years in Ericsson as senior systemengineer. Ability to work in a team and lead it if necessary.Level 7 in oral and written English (scale 1-10). Willingness totravel as required by the job. Practical knowledge of tools andinstrument currently used as required by job.

Authority: To write emergency corrections. To approve softwaresolutions written by less experienced staff. To reject TR/CSRanswers without consultation. To approve the release of documentsand upgrade/update packages. To contact external (eg. GRC)help-desks when necessary.

Contact: Inna Krivosheya, HR Specialist, Ericsson Ukraine, +380 44 4625 220.

ERICSSON CANADA, TECHNOLOGY AND SOLUTIONS, MISSISSAUGA, ONTARIO, CANADA

Product Manager, Switching Network Products

● Job Requirements: Degree in engineering or related discipline, or equivalent work experience. Five years in telecommunications environment, ideally in Product Management role. Analytical ability. Excellent communication skills. Ericsson knowledge.

Job Description: Translates customer needs and wants into technical specifications. Interfaces with customer on all technical issues related to new switching products and switching features introductions. Makes customer presentations on technical aspects and features of products. Follows and understands Canadian market trends, opportunities, market developments, regulatory and standardization activities. Provides technical expertise on products from global Ericsson portfolio; assists the business manager to assess market fit of new products coming from product units and provides technical feedback to product units. Sources products from Ericsson product units or third party supplier. Assists Business Manager to determine products to discontinue. Manages the product lifecycle through the evolution of technology. Manages the technical aspects of new product launches or additions of features to ensure their effectiveness. Gathers information and/or conducts technical studies in order to facilitate the introduction of new products with minimal impacts to existing systems. Keeps contact with the market by participating or attending technical presentations, discussions, tradeshows, seminars etc. Participates in RFI/RFP work. Manages technical solutions with Core 3.

Contact: Jasbinder Dhindsa, Manager, Cellular Network Solutions, Jasbinder Dhindsa@emc.ericsson.se,

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COMPAÑIA ANONIMA ERICSSON, VENEZUELA

NEW ACCOUNT MANAGER, VENEZUELA

● We are looking for a New Account Manager for our Wireless (PCS) Custumers.The New Account Manager is primarily responsible for winning new

accounts.This new accounts are related to PCS licenses that CONATEL, the Venezuelan Telecom Administrator, will issued during 1Q00.

You will be Ericsson's focal point towards our customers and bellow some key areas of responsibility: Identification and development of new customers and new markets. Business and commercial relation with new accounts. Marketing, sales and implementation of initial contracts. "One customer interface" and "uniform Ericsson message" Facilitation of direct connetion between potential customer and Ericsson expertise.Identification of new customers. Marketing and Value based selling. Tender and negotiation. Pro-active involvement of key persons in a potential KAM organisation.

You need to have a degree in Engineering / Marketing / Business Administration would be an advantage. Experience in the field of Telecommunications 5 – 8 / Information Technology for a minimum period of 5 years. Excellent spoken and written skills both English and Spanish.

You will build and develop an organization, which is highly responsive and flexible, is highly responsive and flexible, has an absolute understanding of the customer/partners, business, market environment, key success factors, financial drivers. Has resources and competencies to meet current and future needs, with special focus on data and IP based business, ensures full control of own results and performance, and has a high awareness of financial matters, takes advantage of synergy whenever possible, in shared and networked structures, has full understanding of, and are committed to, the objectives, goals, plans for the account.

The New Account Manager is the overall responsible for new business al the MU. The NAM is responsible for the whole Marketing and Sales process. Defining of separate organisations for account handling.You will report to our CEV President.

VICEPRESIDENT OF OPERATIONS

● The Vice President of Operations reports directly to the CEV President and is a member of the company's management team.

The organization principally serves the Cellular Systems, Wireline and Enterprise segments. The Venezuelan market is dynamic and the customers are highly demanding. The function works closely with the respective customer organizations in the public and private sectors and will concentrate on their needs.

The objective will be at all times to reach complete customer satisfaction, in making the technical planning and the implementation of the projects according to the agreed delivery dates and with the required quality – within the establish cost limits.

RESPONSABILITIES: Undertake the execution of the Customer/KAM Projects in a timely and professional manner with appropieate project, logistics, engineering and installation management. Give the necessary technical support during the implementation and for the after sales period. Optimize the use of human, economic and financial resources. Establish the area goals and objectives (KPI) for the Managers, Executives and their teams.

Develop necessary competence in the assigned areas: cellular and fixed telephony, corporate voice and data nets. Define the role and responsibilities of his own organization in relation to the regional and global organization and ensure that the interface descriptions, routines and promotion procedures exist. Negotiate and establish contacts with suppliers (outsourcing). Support the Regional Implementation Center (RIC) operations, which is directed from the Ericsson Regional Services Office in Boca Raton (ESRO-Americas).

Comunication: To know the business and the customer/KAM expectations and develop plans and actions to satisfy them, and therefore increase the local added value. Guarantee that the customers obtain the agreed service level (SLA). Establish measures, to gange assess customer's satisfaction. Recruit, develop and retain the necessary personnel to achieve the organization's objectives. Establish alliances and profitable relationships with suppliers and contractors in order to obtain the planned objectives.

AUTHORITY: The right and obligation to exercise the necessary authority to develop the functions. The authority to comply with the described responsibilities and functions of all of his executives. Have the necessary authority to organize the human and material resources in the different units.

Contact: María Isabel Meneses, +58 2 273 0181, maria.meneses@cev.ericsson.se, fax +58 2 273 0103 **Application:** Compania Anonima Ericsson, Centro Empresarial Parque del Este, Av. Francisco de Miranda, La Carlota, Apartado 70516, Caracas 1071, VENEZUELA.

ERICSSON COMMUNICATIONS LTD., INDIA

Ericsson's involvement with India and Indian telecommunications goes way back to 1902; working closely with local companies, installing and implementing new telecommunications technologies. 1995 witnessed Ericsson once again playing a lead role in launching India's cellular revolution.

India has leap-frogged directly into digital cellular services and the AXE-the most widely used digital switching system on earth (it is used in 117 countries), handling over 50% of all the world's international calls (and 99% of all India's) –switching system forms the basis for mobile switching centres now in use here. We are looking for professionals for the following positions:

SOLUTIONS EXPERT

● The Indian telecom market is entering a phase of high growth with GSM rollouts around the country gathering speed, with new players starting mobile services, with PTT accelerating the deployment of basic telephony services, with competition being introduced in basic services, with the long distance telephony market being opened for competition and with numerous ISPs starting services.

In the next phase of growth, it is anticipated that there will be a lot of interest in converged solutions (fixed mobile), next generation networks (IP/ATM in backbone) and introduction of 3G services.

Ericsson India invites applications for the position of 'Solutions Expert' to handle the challenge of Ericsson taking and sustaining a leadership position in this market.

The candidate shall work closely with the Product Management and Network Solutions team in India, as well as Marketing, and bring solutions to the market that are targeted and tailored for the needs of the market. The candidate shall also maintain good networking with several Product Units belonging to various Business Units.

The responsibilities for this position will be Working with various bid teams to facilitate the creation of the most effective solutions for different tenders and major proposals. Working with the different Customers that Ericsson works with in the market to identify revenue generating business opportunities. Guiding the customer in leveraging the deployed network to maximise the utilisation of the same. Supporting the local management team in setting the strategic direction of the local Ericsson company. Participating in lobbying activities at various forums to ensure that Ericsson's business interests are well protected. Facilitate the build up of competence in the local staff, in various area of expertise.

Competence in GSM Systems is required and competence in one or more of the following areas is desirable: Datacom (IP/ATM). Wireline and Access Systems. Value Added Services – especially IN/Prepaid, Wireless Data. 3G/UMTS. Transmission Products (SDH, WDM). Possess excellent leadership qualities, communication and interpersonal skills.

Should be degree/diploma holder with minimum ten years of experience, out of which at least 5 years should be in Product Management or Solutions management.

The initial contract will be for one year.

SS CME 20 SYSTEM SUPPORT EXPERT

● The main responsibilities for this position will be to manage, co-ordinate and participate in network investigations and problems at highest technical level and to address customers expectations/ needs. Provide technical competence for resolving complex problems in the networks. Provide technical advice and assistance to support engineers and Managers. Transfer trouble shooting skills and competence to system support staff. Also participate in emergency services.

The competence requirement are: Minimum of 5-8 years working experience on AXE 10 Digital Switching application Systems, of which at least 3-4 years experience should be on CME20/CMS40 SS Systems in Verification and/or Support environment. Experience on IN is desirable.

Candidates with excellent trouble shooting skills and experience on other application systems/product line can be considered for this position. Candidates should also have good English Communication skills.

Qualification: Degree in Computer Science or Electronics or Telecom Engg.

The initial contract will be for 1 year.

Contact ASAP: ECI/HRM Samir Prakash, +91 11 6180 808, hrc.eci@eci.ericsson.se. **Application:** Ericsson Communications Ltd. The Great Eastern Plaza, 2-A, Bhikaji Cama Place, New Delhi – 110 066, India

ERICSSON EUROLAB (EED) AACHEN, GERMANY

Senior STE Methods and Tools Engineer

Project-No.04/339

The STE Methods & Tools group is responsible for all STE activities within CSS in the area of Function Test, Design Maintenance, PLM, System Test, support organizations (ASO/SAFSC) and longer term Methods & Tools issues affecting testing.

This central group will not only cover EED needs, but also all the other LDC's that belong to CSS. The focus is on STE (Simulated Test Environment) tools and protocol and traffic simulated tools that can be used in both STE and target environment (ex. MGTS, TSS 2000, TTCN, etc.).

● As a suitable candidate, you are an Ericsson employee and should have experience in AXE 10 testing. You should be able to work well on a highly motivated team and under strict time pressure. You also have to be service minded, be willing to travel and be prepared to quickly take new assignments. You have to be critical and always want to have the urge to improve the simulated testing environment.

You have to be open minded and willing to change in order to drive the simulated environment into the third generation mobile application systems.

Your responsibilities will include coordinating STE testing activities, gathering requirements from the customer, beeing involved in writing and coordinating new requirements, investigating impacts from new functionality in GSM/UMTS applications, defining methods for how to test new features, acceptance testing of new tools and trouble shooting in the simulated environment.

More info: http://www.eed.ericsson.se/services/eed-x-s/o/soz/Welcome.html.

Contact: EED/H/R, Simon Seebass, +49 2407 575 163, eedsims@eed.ericsson.se or EED/X/SOZC, Raymond Meertens, +49 2407 575 470, eedramo@eed.ericsson.se.

ERICSSON EUROLAB, AACHEN, GERMANY, CORE PRODUCT UNIT APPLICATION CORE (CAPC)

System Designer, APG40 Characteristics

Proj.No. 63/399

Do You want to be a part of UMTS (Universal Mobile Telecommunication System), NGS (Next Generation Switch) and System 108 while you are working in a motivated area with a high level of productivity, as well as great personal gratification?

● We are looking for a person who can initiate and run capacity/characteristic issues within the APG40 area. This includes both investigations and discussions around the characteristics of the APG40 and it's applications. It entails modeling and dimensioning of integrated applications and their environment. You will be required to define mechanisms for making fast and accurate estimations of characteristic behavior on the APG40.

The CAPC systems management is responsible for the system development of the Transit and Network Access products that are common for many of Ericsson's AXE based systems, both for wireline and wireless systems. This responsibility includes activities such as running product committees, handling overall technical coordination in the CAPC projects, perform system studies and source system design. Present challenges are system work for ATM backbone solutions for the UMTS and the NGS.

A successful candidate should have at least 2-4 years experience from software design or system design within an AM system. You will need good general technical and communication skills. Knowledge of the NT operating system, the APG40 and previous experience or knowledge of traffic models is a distinct advantage. Since the work requires co-ordinations within the project, travel can sometimes be necessary.

System Designer, APG40

Proj.No. 62/399

● The APG40 is a windows NT based high availability platform targeted for IO and element management applications.

We are looking for a person who can take an active part in developing and introducing APG40 platform into the next generation of open telecommunication systems. This includes both investigations and discussions around the software architecture, applications and interfaces of the APG40 in all parts of the development life cycle.

The CAPC systems management is responsible for the system development of the Transit and Network Access products that are common for many of Ericsson's AXE based systems, both for wireline and wireless systems. This responsibility includes activities such as running product committees, handling overall technical coordination in the CAPC projects, perform system studies and source system design. Present challenges are system work for ATM backbone solutions for the UMTS and the NGS.

A successful candidate should have at least 2-4 years experience of software or system design using software methodologies and technologies such as OO or CORBA. Experience with modern software languages such as C++ is essential. A good knowledge of NT is a strong advantage. Since the work requires co-ordination within projects, travel can sometimes be necessary.

Source System Designer

Proj.No. 41/399

● We are looking for a person who can take an active part in developing the next generation open telecommunication systems. This includes both investigations and discussions around the system architecture early on in our projects and product structure development together with co-ordination towards ongoing projects within CAPC. You will also be involved in investigations and development of new tools and methods that could be used in the Source System Handling area.

Since it is essential to discuss and investigate the system architecture in the early phases of a project, one Source System Designer is always appointed as team leader for one of our ongoing projects. You would have to take the responsibility for all tasks related to the Source System Handling and co-ordinate those tasks towards the project.

The CAPC systems management is responsible for the system development of the Transit and Network Access products that are common for many of Ericsson's AXE based systems, both for wireline and wireless systems. This responsibility includes activities such as running product committees, handling overall technical coordination in the CAPC projects, perform system studies and source system design. Present challenges are system work for ATM backbone solutions for the UMTS and the NGS.

A successful candidate should have 1-2 years experience from software design or system design in an AM based system. Since the work requires co-ordinations within the projects, travel can sometimes be necessary.

Contact: HR Simon Seebass, +49 2407 575 163, Simon.Seebass@eed.ericsson.se or CAPC Systems Management, Robert Ivarsson, +49 2407 575 704, Robert.Ivarsson@eed.ericsson.se or CAPC Systems Management, Gert Wallin, +49 2407 575 8058, Gert.Wallin@eed.ericsson.se

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ERICSSON EUROLAB, AACHEN, GERMANY, CORE PRODUCT UNIT APPLICATION CORE (CAPC)

The CAPC system groups are responsible for the system development of the Transit and Network Access products that are common for many of Ericsson's AXE based systems, both for wireline and wireless systems.

This responsibility includes activities such as running product committees, handling overall technical coordination in the CAPC projects, perform system studies and source system design. Present challenges are system work for ATM and IP core network solutions for the Universal Mobile Telecommunication System (UMTS) and the Next Generation Switch (NGS).

System Designer, Datacom & IP

Proj.No. 64/399

● As a CAPC System Designer you will perform system studies or design before or in early phases of our CAPC main projects. An important aspect is to find synergies and identify core application solutions between wireline and wireless systems. The type of tasks requires that you can work independently or in teams, take initiative and drive for progress.

To strengthen our capabilities for this type of system work, we are looking for an experienced System Designer focusing on Datacom and IP. You should have more than 3 years of Ericsson experience in AXE10 design and experience of packet switched techniques or platforms is required. Due to the type of work performed, some travelling may be necessary.

System Designer, Intelligent Networks

● As a CAPC System Designer you will perform system studies or design before or in early phases of our CAPC main projects.

An important aspect is to find synergies and identify core application solutions between wireline and wireless systems.

The type of tasks requires that you can work independently or in teams, take initiative and drive for progress.To strengthen our capabilities for this type of system work, we are looking for an experienced System Designer focusing on IN development.

You should have more than 3 years of Ericsson experience in AXE10 design and previous experience within Service Control and/or Service Switching Functions are regarded as an advantage. Due to the kind of work performed, some travelling may be necessary.

Contact: HR Simon Seebass, Simon.Seebass@eed.ericsson.se or Robert Ivarsson, +49 2407 575 704, Robert.Ivarsson@eed.ericsson.se, +49 2407 575 163 or CAPC System Management, Gert Wallin, Gert.Wallin@eed.ericsson.se, +49 2407 575 8058.

ERICSSON EUROLAB (EED) AACHEN, GERMANY

The Test and Support Department (EED/X/S) within our CSS system house is responsible for system test, industrialization and support of the CME20 SS Product Line at EED. It includes CME20 SS product line configuration management, system test and industrialization of the CME20 SS Switching System releases, as well as product line maintenance and customer support for the CME20 SS product line.

We have also the responsibility to verify the UMTS Network solutions and the GPRS product line, which currently is in a very exiting stage of development. We can therefor offer positions at the very edge of technology in all current movements in the Tele Communications field. EED/X/ST is looking for two candidates to fill the positions of:

GSM SS/UMTS System and Network Testers

Proj.No. 55/399

● The GSM Tester is mainly responsible for Test Design and Test execution needed to industrialize new functionality in the SS node. The UMTS Network Tester is mainly responsible for verification activities in a UMTS network which involves node testing on the AXE10, ATM, IP and UNIX platforms, as well as trouble shoot, configure and tune a whole UMTS network.

Main activities are the definition of the prerequisites to perform the system verification,the performance of the Test Execution mainly in target environment, issue and follow up requirements for test configuration and simulation tools and to build up core competence for GSM and UMTS Industrialization.

A suitable GSM candidate should have experience in CME20 design or testing. Knowledge of either of Intelligent Network Services, the Charging and the Signalling sub-system is a significant plus.

A suiteable UMTS Network tester will need a solid background in datacom with more than a basic understanding of telecommunication. A person with knowledge in ATM and IP networking along with knowledge of AXE software will be favoured. You will also need good interpersonal and organizational skills to work as an effective member of a project team.

Contact: HR Simon Seebass, +49 2407 575 163, Simon.Seebass@eed.ericsson.se or EED/X/STEC, Jan Klinte, +49 2407 575 7852, Jan.Klinte@eed.ericsson.se.

ERICSSON EUROLAB (EED) AACHEN, GERMANY

SENIOR PRODUCT LINE MAINTENANCE TESTER

Proj.No 25/399

● Your contribution to the packaging team is key position with minimum 3 years testing experience in a AXE mobile switching systems in a maintenance or support organisation.

You need a sound background in AXE test environment handling and IOG/APZ operation and maintenance, ASR competence, ability to drive improvement and change, effective teamwork and coaching of less experienced colleagues and an interest to participate in studies for new releases. Opportunities for travel, networking, personal and technical development are outstanding. Watch yourself make a global impact with your efforts.

Contact: PLM Section, Elke Busch, +49 2407 575 357, elke.busch@eed.ericsson.se or HR Simon Seebass, +49 2407 575 163, simon.seebass@eed.ericsson.se

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ERICSSON EUROLAB (EED) AACHEN, GERMANY

Experienced Firefighters, Troubleshooters, Support Engineers and Testers needed for GSM SS node HelpDesk

Proj.No 46/399

● We are key players in the GSM support structure. Join our international team, come and work in a demanding environment with the latest functions on the fastest growing AXE application. We are looking for experienced personnel (4+ years) who can participate in:

Technical support for FSC/ ASO/PLM/TCM/INDUS/DESIGN. FOA Support, Hot TR Troubleshooting. Emergency correction production. Correction testing. Technical consultancy. Global support coordination. Negative testing, Function testing. Taskgroup activities, Root Cause Analysis, Technical prestudies. Feedback into UMTS development.

Develop your skills and network here with us. We are regarded as the primary competence centre for GSM Switching System support. We work closely with all worldwide GSM support organizations, with the most demanding operators at network/system/function level. We tackle the high impact problems that affect the worldwide GSM Switching System. We work closely with Design and development organizations to verify and implement new functions.

Opportunities for personal and technical development are outstanding, also are the opportunities for worldwide contact networking. Watch yourself make a global impact with your efforts. Get more info on us from our homepage: http://www.eed.ericsson.se/services/eed-x-sl/

You should should demonstrate a solid AXE background and a determination to tackle problems and meet new challenges. An open minded and flexible attitude and the ability to work well in a team environment are important personal qualities. You should also show good written and verbal communications skills. Some experience in the IN area could also give you the edge.

Contact: EED/X/SLHC, Russell Hegg, eedruh@eed.ericsson.se, +49 2407 575 668 or HR Simon Seebass, simon.seebass@eed.ericsson.se, +49 2407 575 163.

ERICSSON EUROLAB (EED) AACHEN, GERMANY

Experienced AC-tester for global support of the NO.1 AXE Application

Proj.No 47/399

The product line maintenance section at EED, Herzogenrath, Germany takes central responsibility for the world wide CME20 switching system. It is considered as the primary competence centre for CME20 SS.

● REQUIREMENTS: testing/verification, PLEX and ASA experience, test system knowledge, IN and tool experience is an advantage, to be flexible and able to work under pressure, to be self-motivated, to work easily on your own and within a team and to achieve goals and customer requirements.

You have at least 3 years of testing experience in AXE mobile switching. Your main tack is to test the correction in all the releases R7,R8,R8s,PRA,HWM, use test system to trace the problem in test channel and transfer your knowledge to less experience people in the group. Travelling at short notice as an integral part of the job,

Contact: EED/X/SLAC, Nasser Farhadi, +49 2407 575 409, 49 2407 575 163, eednaf@eed.ericsson.se or HR Simon Seebass, 49 2407 575 163, simon.seebass@eed.ericsson.se

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Be Smart!

Write shorter – for improved readability of your ads!

Telecom99 was like a ten day Woodstock festival with all the rock bands playing simultaneously, trying to overpower each other, accompanied by the public's high pitched chatter in the background, and the constant ringing of a few thousand cell phones...

Lost amidst the slogans

The huge trade show in Geneva is a gigantic event that is probably not loved by anyone, is despised by many and suffered by most. Working on an exhibition stand at Telecom for ten days, a position of honor, could just as easily be considered a form of punishment.

I, myself, refrained from this form of self-punishment and settled for a quick visit to this trade show that, apparently, no major company in the industry dares to miss. That is, with the exception of IBM who this year, to the surprise of many, withdrew and decided to spend its marketing budget in a wiser manner.

"Make Yourself Heard" seemed to be the common theme for exhibitors, as previously mentioned. That was difficult to do with all the crowds and hubbub at Telecom, so exhibitors took to using loudspeakers instead.

The decibel police

The most popular person at the trade show was no doubt the safety engineer that Contact ran into in one of the exhibit halls. Equipped with an acoustic pressure-measuring device, he roamed around, checking to make sure that no exhibitor exceeded the maximum allowable 72 decibels. Many exhibitors breathed a sigh of relief when their neighbor was forced to lower the volume!

The battle for exhibition space at Telecom is serious business. If you aren't the best, then you have to at least be the biggest or the most beautiful. As a result, the visual effects are also overwhelming. Many exhibitors build fanciful architectural creations, several stories high. One can become quite dizzy absorbing all these visual and auditory impressions.

Competing slogans

Not only is the sound and architecture overwhelming for Telecom visitors. Everywhere a person goes, they are exposed to a chorus of slogans – those flowery words meant to convince the visitor that a particular company is the best equipped to ensure a customer's future success. Almost all of those messages revolve around the same theme: "Global power, mobile future."

Veteran exhibitor Arne Johnsson, who documented more than 200 different messages, quickly concluded that those were the four most common words. It is, consequently, not surprising to hear that Ericsson's core message is now the "Power of Mobility."

Diagonally across the isle, Motorola counters with the slogan, "Power to the Person." Alcatel proclaims, "Instant Internet", while Siemens puzzled most onlookers with their slogan, "Convergence – Creating a Universe of One."
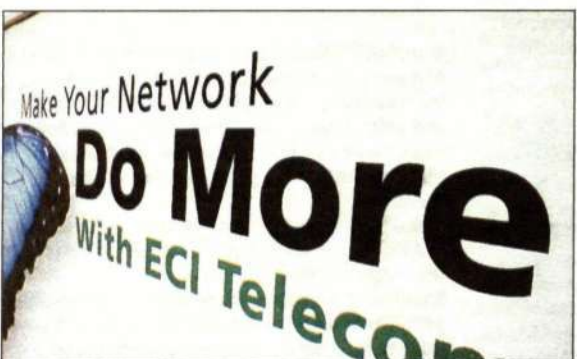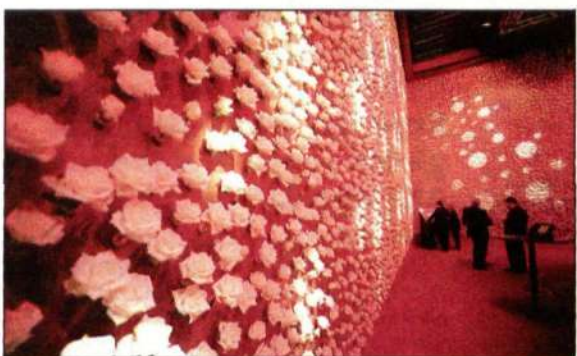
Nortel, meanwhile, focused on teaching the world, "How the world shares ideas," while Qualcomm proclaimed, "This way to the wireless future." No doubt, "Everyone's Invited," just as people were to Samsung's display.

Challenging message

It is difficult to create a message, especially one that will stand the test of time. One prerequisite for success is to stay faithful to one's message and not simply unveil a new message every time another Telecom is held. Perhaps the "Power of Mobility" slogan will be for Ericsson what "Connecting People" is for Nokia, but a certain degree of stamina, or "sisu" as the Finns would call it, will be required.

Standing firm by their message and conducting a very logical and well-conceived campaign, our colleagues in Finland have succeeded in making a very reliable slogan their own.

Ericsson's marketing people have an important challenge ahead of them. They now have to make themselves heard with the "Power of Mobility" slogan so that it will have the same impact as Nokia's message. For that to happen, those words need to be seen and heard everywhere, particularly on the Internet. Anywhere.

Lars-Göran Hedin
lars-goran.hedin@lme.ericsson.se

THE ERICSSON B SHARE

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