

# CONTACT

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## Sharp rise in profit

For the tenth quarter in a row Ericsson recorded sharply higher order bookings. Profitability also increased, in line with management's forecasts. Earnings in the first quarter of 1994 amounted to SEK 813 m.

**5**

## Production in FOCUS

Ericsson Telecom is now implementing major changes in its production organization. The instrument of change is FOCUS, a project that involves nearly all employees in the Swedish plants.

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## Technologies for cordless

Lars Cederqvist, "Contact's" technical reporter, has looked at DECT and GSM, the two technologies most widely discussed these days in connection with cordless personal telephony.

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## U.S. winner in Saudi

There was great consternation in many parts of the Company when it became known that AT&T had won the big Saudi Arabian order. Political considerations are believed to have played a major role in the final procurement decision. But although the order lost was large, it amounted to only two percent of Ericsson's AXE deliveries.

**5**

This year, Ericsson's Annual General Meeting attracted 850 visitors.

Photo: Peter Nordahl

# Strong position

A strong international presence, technically outstanding products and a leading position in the mobile market, the most expansive one right now. Briefly stated, that was the favorable picture CEO Lars Ramqvist drew for shareholders at the May 10 Annual General Meeting.

**3**

# RIGHT ON TARGET

## Johan Siberg aims for big score for Ericsson's mobile phones

Mobile telephones have become big business for Ericsson, which last year became the market leader in digital pocket instruments. Johan Siberg has now been responsible for mobile telephone operations for several months. He has the challenging task of consolidating and strengthening Ericsson's position in this highly competitive field.

"Our prospects are good," Johan says. "We have a good product program and skilled workers. But it will take hard work."

As president of Ericsson Mobile Communications, Johan Siberg has ultimate responsibility for Ericsson's mobile telephone operations. Johan was most recently Ericsson's production manager. Before that, he was in the Public Telecommunications business area and also worked in the U.S. He entered a new world in February.

"It's unbelievably exciting to tackle this branch of the industry," he says.

"Nowhere in the telecommunications world is the market war as open and intensive as it is in mobile telephones. And no other Ericsson product has as many customers, now that the company has stopped producing conventional home instruments."

### Strong competitors

Johan doesn't hide the fact that Ericsson's success with digital pocket telephones in 1993 can be attributed largely to a fast start in the market. Now that competitors are picking up steam, it will be much tougher for the Company to maintain its positions.

"Nokia is very aggressive in its marketing and has been successful recently," he notes. "The company has world coverage that Ericsson lacks in this segment, and it is also established in Japan. Motorola is also continuing its strong growth in the mobile telephone sector. These companies, together with Ericsson, lead the field. And our prospects in the battle are quite good."

### New product program

"Our new product program is being received with great respect by competitors, resellers and consumers. If anything, we are more advanced where performance and technology are concerned, but these are factors that seem to be diminishing somewhat in importance."

"Ericsson has traditionally focused on high-performance phones, intended for professional users. But the mobile telephone is now becoming a household item.

"With the market expanding to include 'ordinary' consumers – housewives, retired persons, young people and the like – the need for simpler models is also growing.

"User friendliness will become increasingly important – and price, too, of course."

Johan Siberg thinks that Ericsson is well equipped to compete in the expanded market.

"Basically, what is required is a cost-effective solution, and that we have," he points out. "The models in our new product family – known as 'Jane' internally – are not only small and technically advanced, they are also very modern in terms of production technology. They require much less time for assembly than earlier generations, for example."

### Served its purpose

"Our 'Olivia' model – the GH297 – was our first digital pocket telephone. It was an exceptionally fine product, and there is still a market for it today, but we have now exhausted the possibilities for further rationalization of production. As a result, we have discontinued production of this model."

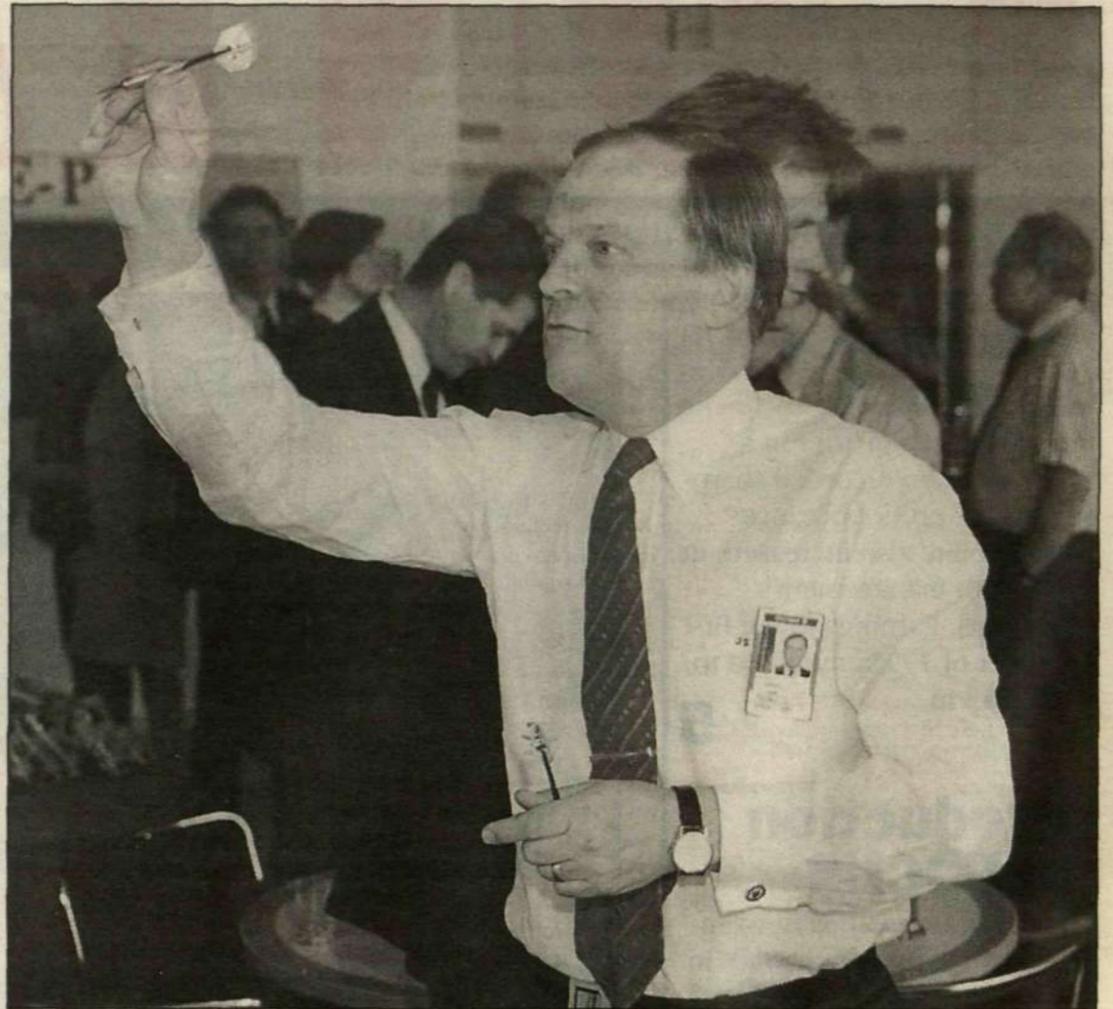
"This move should be viewed against the background of annual reductions in prices of between 25 and 30 percent in the mobile telephone market in recent years. These are reductions that we have to be able to match with comparable reductions in production costs."

"However, 'Sandra,' our smallest model to date, survives along with the smallest units in the Jane family. These two product families give Ericsson a very fine offering with which to attract the market."

Compared with Nokia's aggressive marketing, Ericsson has been relatively "quiet" during the spring. There is a reason.

### Increased capacity

"Our situation today is that we are unable to produce much more than we already have orders for, or have scheduled in our current



AIMING HIGH. Johan Siberg's target is to consolidate and enhance Ericsson's positions as a leader in the market for digital telephones. "A tough job," he says. Photo: P A Björklund

delivery program," Johan says. "So we are taking steps to expand our two plants – in Kumla and in Lynchburg, Virginia. The objective is to expand capacity so that last year's sales of 810,000 telephones can increase to at least two million in 1994."

"We have reorganized the entire plant in Lynchburg. Three separate units have been formed to produce radio base stations, mobile telephones and land mobile radio equipment. I am hopeful that this will increase our efficiency and capacity there."

### Evolution

What does Ericsson have in store for the next generation of pocket telephones? That's a question no one is willing to answer these days, but Johan says that the industry will continue to see new products being introduced several times a year.

"I think, however, that we are entering a phase where we will move a little more slowly, at least when it comes to making the telephones smaller and smaller," Johan predicts. "In addition to the simpler and cheaper telephones that I mentioned earlier, we will also certainly soon see in

Europe telephones that can be connected with data communications systems and function as more than standard dual-mode instruments."

Johan notes, as an example, that many companies want to have a telephone that can handle both GSM and DECT communications. It would be possible to use such an instrument on the job and externally.

It is also important to increase talk time and standby time per battery charge. The objective is that batteries should hold their charge for a week with "normal" use.

### Clearer responsibility

Johan Siberg has begun an overhaul of the organization responsible for mobile telephone operations. He wants to achieve better coordination between operations in the U.S. and Sweden by creating a common organization with clearly defined functions. The four main processes to be joined by transatlantic links are Marketing/Sales, Product Management, Product Development and Production. A manager has been appointed to oversee each main process.

"If we are to succeed, we need clearly defined responsibility and firm control."

His own experience and background will come in handy. His period as production manager, in particular, provided substantial experience in coordinating and organizing production throughout the world.

"I consider my experience as an organizer and coordinator as the most important contribution I can make to this operation," he says. "But, even though I have a great deal of international experience, I am still only one person among many 'Ericssonites.'"

"Ericsson's great strength in mobile telephones consists of more than its know-how in radio systems and components. It is greater than the fine reputation the 'Ericsson' brand name now represents, or the company's strong network of international contacts."

"No," Johan Siberg maintains, "our greatest strength lies in all our hardworking and expert employees."

"We will make the most of this strength, and continue to develop it!"

Lars-Göran Hedin

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# Ramqvist sketched a bright view of future

**The telecommunications market will become even tougher. Nevertheless, Ericsson is increasingly better equipped in the struggle against the other suppliers. Ericsson has a strong range of products and services and a strong international presence where no single market is predominant in its business. The strategy for the remainder of the century is set: Continued heavy investment in technical development and an aggressive marketing!**

**These were the main themes in Lars Ramqvist's address at the Ericsson Annual General Meeting on May 10.**

Lars Ramqvist began his address by stating that he is very satisfied with being able to announce an increase in order bookings for the tenth consecutive quarter, and that this has been accomplished in a prolonged period of recession. However, he expressed a warning that Ericsson must also be on the alert when the winds of success are blowing.

"I can assure you that we will not be resting on our laurels. Successes are no guarantee for the future. Success must be reasserted every day! Accordingly, we are focusing our efforts at full speed ahead!," says the Chief Executive.

## Not so vulnerable

In a comparison with Ericsson's most significant competitors, Lars Ramqvist stated that although they are among the world's largest companies, they are also dependent upon a very large domestic market - which, additionally, have been until recently relatively protected. In contrast, Ericsson has no such dominant domestic market.

"There is no country in which any product or systems area accounts for more than a few percent of total consolidated sales. Consequently, we are not as sensitive as some of our competitors to a decline in any market, or if a protected domestic market is opened for competition. And that is what is occurring just now.

"Therefore, our competitors are searching for new markets, and competition is increasing. At the same time, politicizing of major business transactions is also increasing, since the competitors have strong governments that often back them up.

## Distinct strategy

"In this situation, with depressed prices, lower investments, politicizing as well as financing problems for many of our customers, it is important to have a distinct strategy. Based on rising order bookings and sales and on improved earnings, our strategy remains valid. We are continuing

with our long-term, vigorous investment in technology, paired with aggressive marketing in more than 100 countries. And we are continuing our quality efforts within the TQM program. The TRIM program for cost savings is now an element of the corporate TQM effort."

## Increased investment

To date, this strategy has been successful for Ericsson. Market shares increased during 1993 in most areas. This is occurring in markets that are growing sharply, such as, mobile telephony, where between 90 to 100 million new subscribers a year are projected through the end of the century.

In addition to the sharp growth in wired and mobile telephony in the normal sense, Lars Ramqvist also pointed to the interesting trend in new technologies that we can anticipate in the future."

Ramqvist contended that the expected development in the broadband segment will require heavy investment in two key areas:

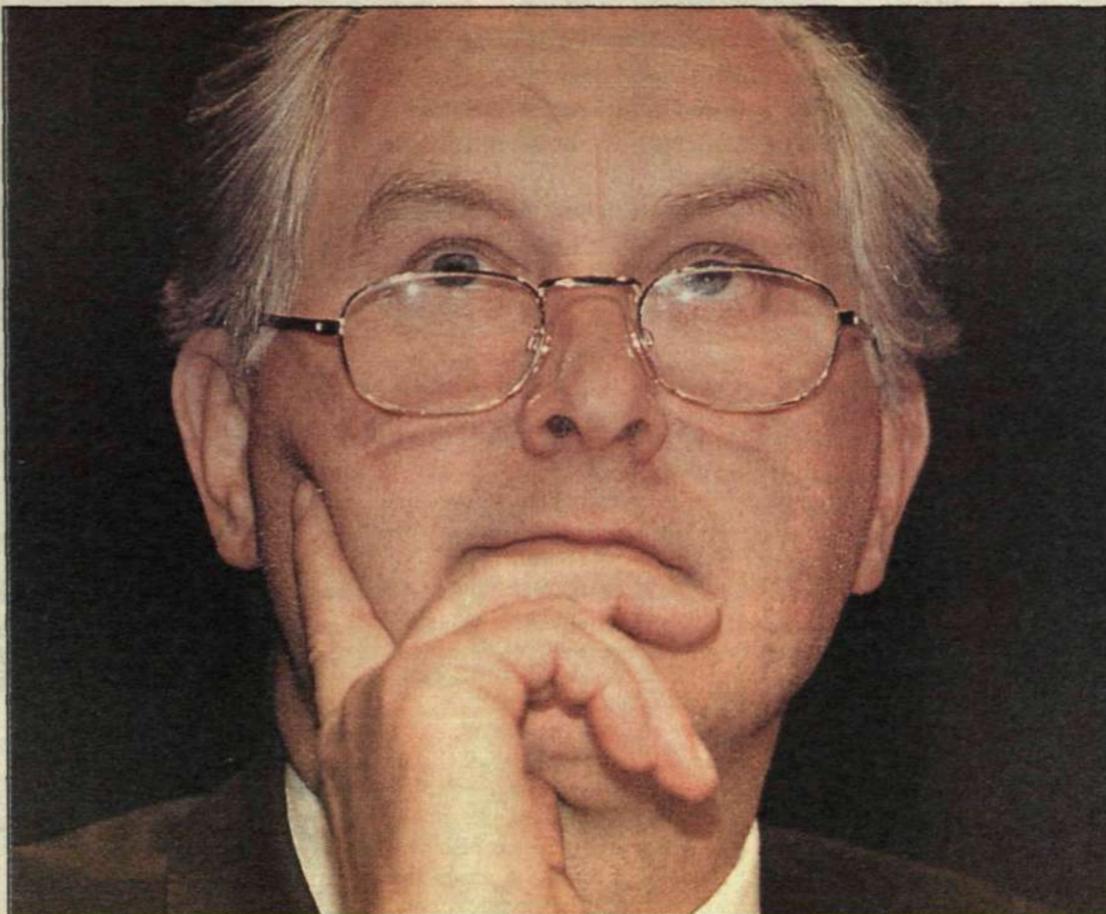
"The first area is the infrastructure, the telenet. New broadband switches and new transport and access network products are required, as well as new, sophisticated operation support systems. This is where Ericsson's main interest lies as a system supplier.

"But new infrastructure will not be sufficient. An even greater level of investment is needed in the range of applications and services. There will be thousands of companies supplying different products and services that can be transmitted via the new broadband network."

"At Ericsson, it is sufficient to currently note that the demand for our broadband AXE switches, transport and operation support systems will increase, regardless of which new service that become predominant."

## AXE is main product

Lars Ramqvist then reviewed Ericsson's most important system and product areas.



**YES TO EU.** "We would benefit from Sweden becoming a member of the EU, not solely for the sake of employment, but also for the benefit of cooperation and peace." The importance of the EU for peace and stability in Europe is an issue which Lars Ramqvist personally considers to be highly important.

"The AXE system is our principal product. It is one of Sweden's largest export goods in history and through 1993 has been installed in 105 countries. More than every tenth telephone subscriber in the world is connected to our AXE system, and our world market share is increasing year after year. In 1993, our market share was 15 percent. Continued success is also being noted for TMOS and strategic orders were won last year for broadband switches and the new transport network systems."

## Mobile expansion

Parallel with the major successes for Public Telecommunications, the Radio Communications Business Area developed at a more rapid pace.

"Mobile telephony continues to be a real success operation for Ericsson. We foresee continued favorable market growth during the remainder of the 1990s," says Lars Ramqvist, citing Japan as an example, where a half million subscribers are expected to be calling in the newly inaugurated systems by year-end next year.

In Japan, plans are under way for an expansion to provide service to 3.5 million subscribers in these networks in the years ahead.

In addition to the successes in mobile telephone systems in

1993, Ericsson is also market leader for the new, smaller digital mobile telephones.

"We intend to hold this position," Lars Ramqvist says. "Currently, the world's smallest and most powerful and fully type-approved GSM telephone comes from Ericsson, naturally!"

## Market review

After discussing other product areas, such as other radio communications products, the MD110, defense systems and components, Lars Ramqvist turned to a review of Ericsson's largest markets. He spoke about China at length, which is the market with the largest growth potential.

It is Ericsson's most rapidly growing market - from SEK 300 million in sales in 1990 to SEK 3,500 million in 1993.

Ericsson has had major successes in China in all product areas: AXE, mobile telephone systems and business exchanges, and the potentials in this market are enormous.

However, the Chief Executive warned about the uncertainty factors in trade with this largest eastern country.

## Not to heaven

"We should keep in mind the old Chinese proverb: 'No tree grows to the heavens'. We know that

doing business with China, as with many other countries, will have its ups and downs - and this is for both political and financial reasons."

## Consistent rules

In closing his long address, Lars Ramqvist extended greetings to two groups which are important for Ericsson - Swedish politicians and the company's employees.

"We expect consistent playing rules from our politicians so that we can sustain and strengthen our international competitiveness.

Swedish commerce can no longer accept political dribbling. We need a joint effort to establish a competitive industry.

"We would benefit from Sweden becoming a member of the EU, not solely for the sake of employment, but also for the benefit of cooperation and peace."

## Fantastic employees

Lars Ramqvist also delivered a message to Ericsson employees.

"In the presence of all of you shareholders, I would like to extend my thanks to all of 70,000 Ericsson employees for their performance. Ericsson has fantastic employees!"

**Reporter: Lars-Göran Hedin  
Photo: Peter Nordahl**

**A.G.M. REPORT AND FIRST QUARTER RESULTS - OVER**



Nearly 900 shareholders attended the Meeting. Many were employees who last year converted their convertible debentures to shares.



The average age of Meeting attendees is usually high. The average age this year was 65, but many who participated were in their 80s. Many are faithful shareholders who return year after year. The fact that Ericsson has not served refreshments at Meetings for several years – for reasons of economy – does not appear to be overly important.

# It was, as usual, a relaxed Annual General Meeting

*Ericsson's Annual General Meetings in early May are usually calm and relaxed affairs. It is almost as if the atmosphere of the Meeting was affected by the exterior environment: the spring warmth and greenery that have characterized Meeting days in recent years.*

*This year's Meeting was no exception. The atmosphere was pleasant and there were no surprises.*

Ericsson's Annual General Meeting has been held in the Victora Hall at the Älvsjö Fair, on the outskirts of Stockholm, in recent years. Although the auditorium was only half full, nearly 900 shareholders were present. As usual, the average age of the attendees was high: probably 65 this time.

And also as usual, the Meeting brought together many small shareholders and the few who control Ericsson in terms of ownership.

All the shareholders, large and small, were entertained by the Ericsson Chorus during the three quarters of an hour before the Meeting was called to order. After the introductory formalities, it was time for Chief Executive Office Lars Ramqvist to

provide the entertainment, assisted by Executive Vice President CW Ros. Their reports described the Group's situation and how Ericsson's management views the future. (See page 3.) The professional manner in which Meeting Chairman Björn Svedberg swung his gavel was also entertaining.

## Few questions

As usual, before the Board of Directors was officially discharged from liability for its administration in 1993, an opportunity was provided for questions.

Claes Uggla wondered how Ericsson was doing in the matter of patents. Lars Ramqvist replied that Ericsson was the leader in Sweden in applying for patents but that our competitors are even more active. Public disclosure of the patent portfolio, which Uggla requested, was not possible for competitive reasons, the CEO declared.

Torsten Skytt, from the Swedish Shareholders' Association, offered congratulations on the improvement in earnings but criticized the choice of pictures in the Company's annual report. He also wanted more detailed reports of the results of the individual business areas. Lars Ramqvist noted that information of that type would benefit Ericsson's competitors, who themselves do not provide any more detailed reports.

Sven Gavlevik asked what Ericsson was doing to develop its most important resource: its employees. Lars Ramqvist then described the various training programs – mainly the executive development programs but also those at lower levels – that are being conducted throughout Ericsson.

## New names

The "turnover" of Board members was larger than usual at this year's Meeting. Three members, Carl-Erik Feinsilber, Georg Karnsund and Jacob Wallenberg, had declined reelection. They are being replaced by Bo Berggren, Claes Dahlbäck and Clas Reuterskiöld.

Ericsson's Parent Company will also acquire a somewhat new name, in accordance with a proposal by the Swedish Government to adapt Swedish corporate legislation to conform with European Union regulations.

The Meeting voted that Ericsson should be a "public" company, not a "private" one, in accordance with the EU's classification of limited liability companies. It also voted to change the Articles of Association so that "(pub)" – or an alternative designation that the Swedish Parliament may adopt in a forthcoming vote – can be added to the official Company name.

**Report: Lars-Göran Hedin  
Photos: Peter Nordahl**



CEO Lars Ramqvist in conversation with Peter Wallenberg, one of the Board's true "heavyweights."



Newly elected Board members: Clas Reuterskiöld and Claes Dahlbäck.



After 27 years as an Ericsson auditor, Nils-Axel Frisk declined reelection this year. Lars Ramqvist and others paid warm tributes to him for his contributions.

# AT&T took prize in Saudi contest

The mammoth project in Saudi Arabia was the focus of the largest bidding competition in the telecommunications industry in recent years. For a long time it looked as though Ericsson would win the contract for the 500,000 subscriber lines involved. Then came the announcement early in May that AT&T, the American company, had ultimately been designated the supplier - and that the order had been increased to comprise 1.5 million telephone lines.

The news that Saudi Arabian authorities had signed a letter of intent with AT&T covering the large telecommunications expansion project, and that the order will amount to four million dollars, had the impact of an icy shower on many within Ericsson who had worked hard to obtain the important contract. It had been known for some time that Ericsson's bid was the most competitive of those submitted by the large international players in the market. But despite the fact that Ericsson lost out, Chief Executive Officer Lars Ramqvist is not overly downcast.

"The equipment is to be delivered over a seven-year period, so the order involves 200,000 telephone lines per year," he noted. "This can be compared with Ericsson's deliveries of around 10 million lines of AXE equipment annually. The large Saudi order thus does not represent more than two percent of our yearly sales. We can make up for this lost business in some other of the 100 countries in which we are active."

Ericsson's bid was submitted jointly with NEC of Japan. If the

two companies had won the contract, it would have been worth SEK 13 billion to the Company.

"While the outcome is only of marginal importance in terms of Ericsson's sales, the contract we lost is nevertheless a large one," said Bo Landin, senior vice president, corporate markets. Bo does not exclude the possibility that political backing from the Clinton administration was of decisive importance in determining the award of the order. Sweden's prime minister, Carl Bildt, together with Minister of Communications Mats Odell, also became involved in backing "their" supplier. The two political leaders recently made a quick trip to Riyadh, where the telecommunications project was one of the subjects discussed.

#### Sweden is small

"We consider that the Swedish Government gave us appropriate support in connection with this transaction but we naturally have to realize that Sweden is a small country compared with the United States," said Nils-Ingvar Lundin, senior vice president, corporate relations, in a com-



As a result of the support from American forces during the Gulf War, many large orders from Saudi Arabia have gone to U.S. companies.

ment to the media after the Saudis' decision became known.

"Saudi Arabia's dependence on the United States is substantial and has probably been strengthened by the trend of events in

Yemen right now," Bo Landin points out. Generally speaking, there is an increasing tendency for large international transactions to be influenced by political considerations."

## Celnet expands with Ericsson technology

Ericsson has received an order, valued at SEK 110 m., covering the delivery of GSM equipment to Cellnet in Great Britain. The order comprises AXE10 exchanges for Cellnet's digital mobile telephone system.

Cellnet opened its digital mobile telephone system at year-end 1993. The network already covers 40 percent of the British population. The Ericsson equipment will enable the company to offer a complete range of both analog (TACS) and digital (GSM) mobile services. The AXE10 exchanges will act as bridges between the systems.

## Hedfors to head U.S. operations

Bo Hedfors, currently President of Ericsson Network Systems, Inc. has taken on the additional role of President of Ericsson GE Mobile Communications Inc., succeeding Ronny Lejdemalm.

In a related move, Ericsson North America Inc. will be reorganized by merging Ericsson Network Systems and the subsidiary units into one organization led by Bo Hedfors.

Ronny Lejdemalm, currently President of Ericsson GE will support and assist Bo Hedfors in building the organization in the U.S. until October 1, when Ronny will leave Ericsson.

Leif Källén, currently President of Ericsson North America Inc. will join the Ericsson Corporate Market organization in Washington D.C., as Chairman of the Ericsson Corporation, handling matters pertaining to the North and Latin American economic integration (NAFTA and Mercosur).

# Ericsson reports sharp rise in profit during first quarter

The interim report for the first quarter of 1994 shows a rise in profit from SEK 428 to 813 m.

Ericsson's order bookings for the first three months of 1994 increased 23 percent to SEK 21,499 m. (SEK 17,469 m. in the corresponding period in 1993). Consolidated net sales rose 24 percent to SEK 15,983 m. (12,867). Pre-tax income nearly doubled as a result of successes in the Radio Communications Business Area and amounted to SEK 813 m. (428), including SEK 9 m. (loss: 1) in net capital gains.

Ericsson's order bookings have now increased for ten consecutive quarters. Net sales have also shown a steady rate of incre-

ase. This is mainly attributable to the very strong expansion in the Radio Communications Business Area in a large number of countries worldwide.

Europe accounts for half of Ericsson's net sales. The largest single market is the U.S., with 12 percent of net sales, followed by Sweden and Italy. China now ranks fourth, with 8 percent of net sales.

Ericsson had 72,143 employees on March 31. This represents an increase since year-end of 2,546 persons, of whom 1,300 were added in conjunction with the acquisition of the Teli companies.

#### Business Areas

Public Telecommunications reports higher net sales, partly as a result of the acquisition of Teli

and partly due to increased volume in Mexico and a certain recovery in Spain. Compared with a year earlier, order bookings declined, primarily as a result of reporting very large orders in Thailand and Great Britain in the first quarter of 1993.

Radio Communications accounted for nearly half of consolidated net sales, after an increase of slightly more than 50 percent. The increase is attributable to sales of systems and terminals for mobile telephony in a large number of countries. Order bookings rose even more strongly after receipt of major orders, primarily in China, Germany, the U.S. and Australia.

Business Networks reports an increase in net sales, due mainly to a favorable trend in network operations. Order bookings con-

tinued to increase strongly in the entire business area.

Components reports higher net sales and order bookings for all business units. Net sales increased for cable in Sweden, power equipment in the Far East, microcircuits in the U.S. and Sweden, and components distribution in the Nordic region.

The volume of sales in Defense Systems was unchanged. Net sales were affected somewhat due to delays in the JAS project, while sales of MiniLink products were very favorable. In comparison, order bookings are lower, due to the major order for airborne radar systems signed at the beginning of 1993.

#### Financing

Cash flow was negative, due primarily to a certain inventory

build-up and the Teli acquisition. Due to an increase in liquid funds and a build-up of inventories for future deliveries, the equity ratio declined during the first quarter from 34.5 percent to 32.8 percent. An improvement is expected for the full year.

Capital turnover improved somewhat.

#### Capital expenditures

Ericsson's investments in property, plant and equipment amounted to SEK 1,025 m. (708), of which expenditures in Sweden totaled SEK 704 m. (357).

#### Outlook

Positive development is foreseen also for the remainder of 1994. Earnings are expected to be higher than the previous year."

# Ericsson secures its position in the Netherlands

**Ericsson Telecommunicatie B.V. has received a contract valued at SEK 800 m. from PTT Telecom Nederlands covering delivery of AXE equipment and services.**

The contract secures Ericsson's role as one of the major suppliers of public telephone exchanges in Holland.

"The contract establishes a partnership with the operator," says Ron Dikhoff, marketing manager of the public telecommunications unit at Ericsson

Telecommunicatie (ETM). "In making its system choices PTT has increasingly begun to concentrate its efforts on its core activities - serving as an operator and providing telecommunications services.

"That is why it has chosen to contract out such functions as testing, installation and design, as well as network planning and system integration."

#### Confidence in Ericsson

"We are delighted to have signed this contract with Ericsson today," Paul Smits, executive vice president of the Dutch operating

company, declared. "It confirms our confidence in both the Ericsson organization and the AXE system, which we regard as a system that can meet the needs of a modern operator."

Ragnar Bäck, the new head of the Business Networks Business Area, is pleased with the contract, which marked the successful conclusion of his period as president of ETM.

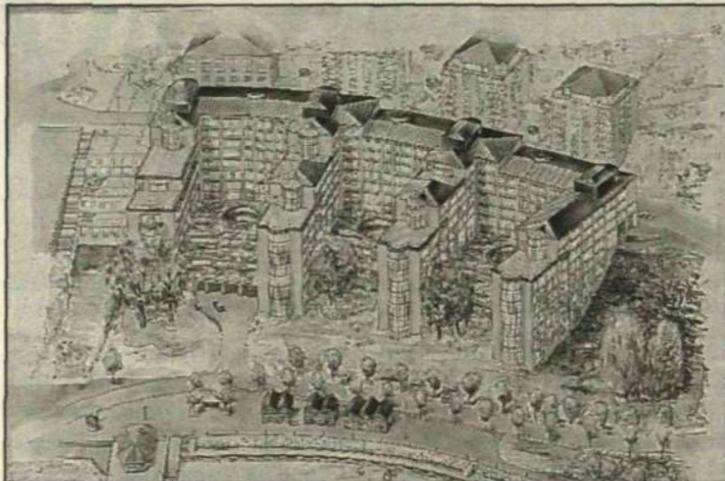
"This contract is very valuable for Ericsson in the Netherlands," he says. "It strengthens our position in the Dutch market and establishes a stable base for future operations."

## New home for Ericsson Business Networks

**The greater part of Ericsson Business Networks AB is moving at year-end to a new red office building in Nacka Strand on the outskirts of Stockholm.**

Approximately 1,000 employees will be affected when the newly formed "F" Division (Business Communications), together with the Business Support Division and company and business area managements, are brought together under one roof.

The 36,000 square meters of office space will be equipped with the most modern technologies and services.



This is what the new office building in Nacka Strand will look like.



Ericsson has delivered radio technology to Malaysia for many years. Remote telephone "kiosks" that are connected to the fixed network with radio links are an unusual feature of the Malaysian system.

## Mobile orders from Malaysia

Mobile telephony is expanding rapidly in Malaysia. So far this year Ericsson's office in that country has received orders worth SEK 600 m. from CELCOM, the mobile telephone operator, for expansion of its ART 900 (Automatic Radio Telephone 900) network.

The orders represent a continuation of the heavy investments

made earlier in this analog mobile telephone network. Since 1989, when construction of the network began, SEK 1.5 billion has been invested.

With this year's orders for radio base stations and switching equipment, CELCOM is aiming to rapidly increase the network's capacity in order to meet the growing demand for service.

## Breakthrough for TMOS technology

**Ericsson Hewlett-Packard Telecommunications (EHPT) has received a strategically very important order from Telecom Australia.**

The Australian authority has decided to base its next generation of operating and monitoring systems on TMOS technology and products in the TMOS family. TMOS, an operation support system originally developed by Ericsson is now being refined and administered by EHPT.

The order from Telecom Australia is valued at SEK 200 m. and extends over a three-year period. Ericsson's subsidiary, Ericsson Australia Pty Ltd obtained the contract.

"We are very happy that Telecom Australia decided to base its next-generation operation and monitoring system on EHPT

technology," says Kjell Sorme, president of Ericsson Australia. "The contract opens new areas for cooperation between Ericsson and Telecom Australia, which last year designated Ericsson as a strategic supplier of exchange equipment for its public telecommunications network."

Installation of the new TMOS-based systems will begin this year. The systems will be used to control and monitor Telecom Australia's telecommunications networks. Eight million digital subscriber lines will eventually be handled.

"We have chosen TMOS as the platform for the Operation and Support system as part of Telecom Australia's 'Future Mode of Operations' program," Gerry Moriarty, manager of network products at Telecom Australia, says.

## EU approves smallest 'mobile' unit

Ericsson's new small GH337 pocket telephone for use in GSM systems now meets all the strict requirements imposed by the European Union (EU) on mobile telephones for the European market.

All new telephones developed for this market in 1994 must be approved by the EU.

The approval is in the form of a quality rating certifying that a telephone meets the EU's requirements for safe and reliable mobile telephone operations.

All EU-approved telephones receive a "CE" marking showing that they meet EU requirements. Telephones lacking this marking may not be sold within the EU after January 1, 1995.

## EDACS security for the Kremlin

**The security department of the Russian federation has signed a contract with Ericsson covering delivery of a digital EDACS land mobile radio system to provide radio communications in the Moscow region. The system will be installed during this year.**

EDACS has scored major successes in many countries. Ericsson GE in Lynchburg, Virginia in the U.S. has delivered systems to customers in many states in its home market. Law enforcement agents in a number of countries in Western Europe have invested in EDACS. The system was used by the Norwegian police to monitor operations during the Winter Olympic Games in Lillehammer.

More than 200 systems are currently in operation through-

out the world. In addition to police departments and rescue services, airport operators and large industrial companies have also chosen the Ericsson system.

Now Russia has become a new market for EDACS. A spokesman for the Kremlin had this comment:

"We demanded a fully digital land mobile radio system with the highest levels of security, capacity and reliability. Ericsson's EDACS system was the one that was able to meet our requirements."

Staffan Svensson is executive vice president of Ericsson Mobile Communications and responsible for Land Mobile Radio operations. He points out that the order from the Kremlin confirms the high degree of security and reliability of the EDACS system.

# GSM 'demo' big success at Africa Telecom '94

**"Smash hit" is the term that best describes Ericsson's participation in Africa Telecom '94 in Cairo between April 25 and 29. It was even said that ITU, (International Telecommunications Union), which sponsored the trade show, could not have handled organizational details without the GSM demonstration system that Ericsson installed for the show.**

When Ericsson participated in Africa Telecom in Harare, Zimbabwe, four years ago the show was a small one and the Company's participation was modest.

Since then, a great deal – both positive and negative – has happened on the African continent.

South Africa is now an open country, with a very substantial need for telecommunications. The potential there is enormous, assuming political stability can be achieved.

The possibilities for obtaining financing for projects in African countries have also improved, while Ericsson has become more skilled at finding sources of financing via its subsidiaries throughout the world.

## Not just Africa

But Africa Telecom '94 was not just about telecommunications in Africa. Egypt, despite its geographical location, is also in a way a part of the Middle East. As a result, countries from that region were also represented. Because Egypt and Cairo constitute something of a cultural Mecca, the numbers of exhibitors, visitors and journalists were, as expected, much larger than in Harare in 1990.

Approximately 2,500 exhibitors from 285 companies in 45 countries shared the 13,000 square meters of exhibit space.

The show was visited by 12,000 persons from 75 countries. In addition, 692 VIPs, including 64 government ministers and 72 general directors of telecom administrations, were on hand.

## Complete networks

Between 45 and 50 persons were on duty at Ericsson's 200-square-meter stand, representing the Public Telecommunications, Radio Communications, Business Networks and Components business areas. Ericsson Telecomunicazioni (Italy), which has a number of projects in Africa, was also represented, as were MET (France) and Ericsson's Norwegian and Irish companies.

The persons manning the Ericsson stand represented many



Egypt and Cairo constitute something of a cultural center in North Africa. This helped to guarantee large numbers of exhibitors, visitors and journalists at Africa Telecom '94 in Cairo. Photo: Anna Gerdén



Egypt's president, Hosni Mubarak received Ericsson's newest GSM phone, the GH 337, also known as "Jane."

nationalities. This made it much easier to communicate with visitors.

Ericsson's message was that the Company can deliver everything from simple products to complete networks, fully custom-tailored to customers' specifications, and that it can provide the services and training customers want.

## Seminar

In Africa, in particular, the provision of telecommunications services in rural areas in an economically viable manner constitutes a major problem.

Ericsson has accumulated substantial experience in rural projects and displayed a number of alternative solutions in its exhibit.

In addition, Gunnar Liljegren presented a paper dealing with



Between 45 and 50 persons were on duty at Ericsson's 200-square-meter exhibit at Africa Telecom '94. Photo: Bengt Fourong

this subject during the Forum, a wide-ranging seminar arranged in connection with the display of exhibits at Africa Telecom '94. The theme this year was the regional and global integration of Africa through improved telecommunications.

## Success

There was a great deal of interest in Ericsson's products and systems during the entire show. The Company's GSM demonstration system and its new GSM GH 337 telephone attracted by far the greatest attention.

Prior to the trade show a number of suppliers had applied for radio frequencies in Cairo in order to be able to demonstrate GSM during Africa Telecom '94. Ericsson's system covered the exhibit area, the highway to the airport and the airport area,

and parts of Heliopolis, one of Cairo's finer districts. Although set up primarily for demonstration purposes, the system was a "real" one that could be used permanently. It was set up in record time, only two weeks.

The system turned out to have much better coverage than originally planned. The GSM telephones functioned even in the center of Cairo if the user was only a few stories above ground.

## Great interest in GSM

Ericsson distributed approximately 65 telephones to VIPs during the show: 60 "Sandra" type, and five of the new GH 337 "Jane" instruments that had been introduced at CeBit a month earlier. Wherever one went in the exhibit area one saw VIP guests or ITU personnel using the "Jane" or "Sandra" mobile telephones.

Interest in GSM in Egypt, as in the rest of Africa, is great.

In recent months discussions pertaining to the award of GSM operators' licenses in Egypt have heated up. There is no doubt that there is substantial pent-up demand for mobile telephone service in the country.

## "Jane" for Mubarak

President Hosni Mubarak of Egypt now has a GSM telephone made by Ericsson – the smallest version, of course. He received it during his tour of the exhibit area on the opening day of the show, April 25.

When the president stopped at the Ericsson stand during his "walk through," Company representatives took advantage of the opportunity to present one of the new telephones.

Following the close of Africa Telecom '94, Ericsson's managers in Africa and the Middle East said that the trade show had been very rewarding, perhaps even more than many had dared hope.

In contrast to such larger affairs as CeBit in Hannover and Telecom in Geneva, Africa Telecom '94 offered greater opportunities to sit down with customers and prospects and discuss problems, ask questions and make suggestions. Thus the contacts made in Cairo may have been more valuable than the normally brief meetings at other fairs.

Helena Lidén

# The project that is giving AXE a new face

Approximately 1,000 persons in more than 15 countries are working diligently on the new AXE Local 12.3 product release. It is scheduled to be installed for acceptance tests by the first customers, the Dutch and Swiss telecommunications administrations, in October. Shortly thereafter there will be deliveries to telecom operators in Norway and Finland. The project within which the new release is being developed is designated "FMp3."

The project represents a significant advance in the use of AXE for local applications. So-called POTS (Plain Old Telephone Service) functions and intelligent networks are being integrated in one and the same local station.

A substantial lot of work is involved.

"We are making changes in some 300 of the approximately 700 software blocks that will be included in the AXE Local 12.3 product line," says Anders Karlsson, the senior product manager.

Project managers, designers, testers and all the others involved in the project are fighting a continuous battle against time. They know that the system has to be ready for installation at the customers' locations in October. So far, they have won the battle. Generally speaking, everything is proceeding on schedule.

"The reason for this, apart from the fine work being performed, is that we have been able to benefit from experience gained in earlier projects," Anders says. "We have further improved our planning, processes, tools and tool maintenance."

This is being facilitated by the presence of many persons who worked on the two preceding FM projects.

"We are working pro-actively in our project planning," Anders points out. "We identify risks and prepare corrective measures well in advance of problems that could arise."

## New test methods

Many of the improvements are in the test phase of the present project, which was begun recently.

"We have strengthened the technical coordination in the test phase and have developed a new test strategy," Anders reports. "We are using a number of new methods that save time and resources - in control-point and level testing, as well as in simulated-function tests - for example."

In simulated-function tests, software blocks are tested in workstations rather than in AXE test exchanges. This offers a number of advantages. Among other benefits, the number of AXE exchanges that are used within Ericsson can be reduced.

## Intelligent networks and POTS handled in the same exchange

**The most important innovation in the new release of AXE for local exchanges, the AXE Local 12.3 product line, is that functions for POTS (Plain Old Telephone Service), ISDN (Integrated Services Digital Networks) and intelligent networks are integrated in one and the same exchange.**

AXE Local 12.3 is now being introduced in the local companies. The system will be sold in all markets except North America.

"We are attempting to introduce the system quickly in as many countries as possible," says Björn Karbeus, who handles marketing programs in Ericsson Telecom's business unit for local telephone exchange systems, and who is responsible for the launch.

A number of contracts for the new system have already been received in such countries as Holland, Norway, Switzerland and Australia.

Upgradings of existing AXE local exchanges also offer highly attractive commercial possibilities. There are more than 4,000 local AXE exchanges in service in more than 90 countries. All these exchanges can be upgraded to handle the new system.

Because all functions for conventional telephone service, ISDN and intelligent networks are integrated in a single exchange, a telecom operator can connect both private and corporate customers to the exchange and satisfy their different needs. Business communications is also enhanced with the new system, which is supported by a new family of terminals.

## Different connections

With AXE Local 12.3, various systems and methods of access to



The FMp3 project is on schedule. The first call was placed via the new system early in March. Above, from right: Anders Karlsson, senior project manager; Rene Pedersen, project test manager; Sören Elsberg, project design manager; and Bengt Eriksson, test coordinator. Photo: Jannis Politidis

So far the tests have shown that the designers have done a good job and that the improvements made have been effective. Fault frequency is much lower than in earlier projects.

"After only a couple of days of fault detection we were able to connect the first call via the new system," Anders says.

At the same time that the tests

are proceeding at a rapid pace, the industrialization section of the project is developing routines for rational handling of the finished system. The scope of the FMp3 project is thus broader than usual for this type of project.

"There are demands on us to improve the efficiency of the order process for AXE," Anders declares. The project will be

completed in June 1995 but the first AXE Local 12.3 exchanges are to be delivered to customers for acceptance tests in October this year. Commercial start-ups are planned for the middle of February 1995. Anders and his 1,000 colleagues in the FMp3 project are looking forward confidently to that date.

Maria Rudell

an exchange have for the first time been built into the exchange from the start. As a result, an operator can connect subscribers to the exchange directly or indirectly, using a number of different technologies, for example, various forms of fiber optical links, cordless business telephones or other Ericsson technologies for radio connections.

## Lower power

The new ACA3 line card is included in the new release. Thanks to this card, it has been possible to reduce the size of the casing by half, compared with the preceding release. In addition, power consumption is reduced, on average, by 30 percent.

The functions for controlling traffic in the network with the aid of Network Traffic Management (NTM) have been substantially improved in AXE Local 12.3. With NTM, an operator can boost accessibility and protect the network in the event of tem-



The new AXE Local 12.3 product release is scheduled to be ready for delivery in October. The FMp3 project problem solvers are confident they can meet this deadline. Fault frequency in the new system has to date been lower than in earlier projects.

porary overloading.

The new system contains many new statistical functions. An operator can obtain information on traffic flows and how services are being used by various categories of subscribers. Such information is especially valuable to operators in deregulated markets.

## Easy to handle

The operating and maintenance functions that are largely integra-

ted in the AXE Local 12.3 system make the system easy to handle. The system includes, among other features, AXEUSE, a new PC-based graphic display that is employed locally, connected directly to an individual exchange. Operating personal can issue instructions via dialog boxes at the same time that they have access to documentation for the AXE system via another dialog box.

MR

# Admission ticket

**"When we handed over our digital mobile telephone system to Tokyo Digital Phone on April 1, we obtained a 'ticket of admission' to Japan," says Gunnar M Eriksson, manager of the Mobile Telephone Systems Japanese Standard business unit at Ericsson Radio Systems. And he compares the Japanese mobile telephone market with the market in North America ten years ago.**

When Ericsson in 1983 and 1984 received its very first orders for mobile telephone systems in Buffalo and Chicago, it was a "small" unknown foreign company competing with giant American telephone companies.

Today, 4,350,000 subscribers in North America place and receive calls in Ericsson systems.

The potential for growth in Japan is almost as great as in North America.

The base in Japan is a very good one, and the three systems that Ericsson is delivering there cover 70 percent of the population of 130 million people.

In addition to the system that was handed over in April, systems in Osaka and the Nagoya area were scheduled to be turned over to customers in May and July, respectively. The approximately 800 employees involved in the Japan project are not likely to be unemployed.

"Now the difficult part begins," Gunnar says. "To work as hard as you can, as smartly as possible and improving all the time - in other words Total Quality Management with continuous improvements.

"The system that we have delivered is good - very good - but we can and we will increase the quality of our systems even more," he emphasizes.

## New way of working

In May 1992 when Ericsson received the contract to develop, manufacture and start up a mobi-

## Inauguration of Tokyo's mobile network opens up Japan for Ericsson

le telephone system in Japan in less than 20 months, there were many who shook their heads. In particular, there was doubt about the Gävle plant's ability to handle the big increase in volume.

"It has been a tough job," Gunnar says. "I never doubted that we could handle it, but it was just as difficult as we thought it would be."

Experience gained from two earlier technology-intensive projects - GSM equipment for Mannesmann in Germany and D-AMPS (digital American standard) equipment delivered to customers in the U.S. - proved valuable. Even more important, perhaps, was a new way of working, so-called concurrent engineering. In this method, work is performed "in parallel," with one department not having to wait until part of a job is "handed over" to it from another department. There were only two hand-



**We have laid a good foundation, Gunnar M. Eriksson says.**



**The ceremonial inauguration of Tokyo Digital Phones (TDP) mobile system took place on April 13. TDP's president, Susumu Ochiai, is shown with Ericsson's president, Lars Ramqvist.**

overs in the Japan project: from the marketing department to the project office and from there to the customer.

The development project includes a number of "cross-functional" groups. Some of

the tasks performed within these groups cut across the entire project. This is a new way of working that is designed to save time and improve quality.

## Six "expertise centers"

The short time available for the project made it necessary to "do things right the first time." Six "expertise centers" were created to achieve this objective. By not dispersing the company's resources, it proved easier to control the project. Many of the employees involved also had experience from the GSM and D-AMPS

projects. The six centers are located in Kista, Mölndal and Linköping, at Ericsson Toshiba (ERJ) in Japan, Jorvas in Finland and in Gävle, where plant personnel participated right from the start. The large increase in volume in the plant was also handled very well.

## A very good base

"We have learned to work efficiently," Gunnar says. "There were certainly long working days for many employees, but in the future the working time should be more normal."

"We have laid a very good foundation for continuing success in Japan," Gunnar adds. "We are now providing coverage out-of-doors. The next stage is to obtain coverage indoors, underground and in tunnels. This will require the development of more compact models of base stations,

as well as pico and micro base stations."

## Have some fun

Just as TQM (Total Quality Management) and continuous improvement were important in the Japan project, the Ericsson values of Professionalism, Human Relations and Perseverance were important guiding principles.

"But," says Gunnar, "we have an additional principle - and that is to have some fun." Employees involved in the Japan project were able to relax at a kickoff party, seminars and get-togethers in connection with important events related to the project. More recently, a "soft drink pub" has been organized once a month. In order to handle coming orders in Japan it will be important to be able to gather now and then.

**Gunilla Tamm**

# The nervous wait for the first call

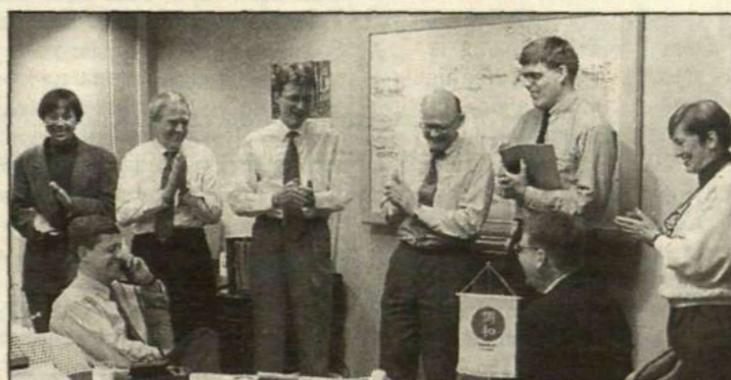
**The nervous tension was rising in the "Japan tower" in Kista as the hour of 5:00 p.m. approached on Holy Thursday afternoon, March 31. With flushed cheeks, people hastened to make final preparations for the customer's first call from the digital mobile telephone network.**

A great many connections had to work well when the technical director of Tokyo Digital Phones, Mr. Short, at midnight, Tokyo time, was scheduled to place the first call from his network that had just opened for commercial service. In Kista, the call would be received by Mats Köhlmark, manager of the project office.

Meanwhile, Gunnar M Eriksson, Manager of the Mobile Telephone System/Japanese Standard unit, was in an airplane in the vicinity of Russia's Ural Mountains. And Örjan Sahlin, the "general problem solver" of the unit, had decided a few days earlier to do something about the fact that Gunnar could not be present at the ceremony.

## Flight SK 985

Shortly after five o'clock the joy in Kista was great as Mr. Short's first call came through. But there was still work to be done. While Mats wished Tokyo Digital Phones continuing good luck with its system, and Mr. Short in turn thanked Ericsson for its fine cooperation, Örjan picked up another phone. He called Stockholm Radio and asked to be connected to "flight SK 985."



**Employees involved in the Japan project in Kista applaud the first real call from Tokyo. Above, from left: Björn Erixon, Christer Elmquist, Gunnar Thyrsing, Trokel Dreyfort, Erik Ehrenfors, Ros-Marie Jansson. Sitting: Mats Köhlmark and Örjan Sahlin.**

After several very long minutes, Stockholm Radio announced that it was in contact with the SAS aircraft. Mats alerted Mr. Short that an attempt would now be made to include Gunnar, who was standing by in the cockpit of the plane, in their conversation.

The connection was made and the tension in the Kista group rose a few degrees.

At first there was only the sound of crackling static. Then:

"Hello! This is Gunnar Eriksson speaking. Can you hear me, Mr. Short?"

This was the moment of truth. Would it be possible for Mr. Short's call to be linked to an aircraft over Russia? After what seemed like an eternity, the tense gathering in Kista heard the words:

"Hello, Gunnar, This is Mr. Short. Yes I can hear you very well."

When the call ended, applause broke out and the sudden easing of tension at that moment must have spread like a pressure wave through Kista. Örjan Sahlin received many hearty slaps on the back and became Kista's hero of the day.

He was, of course, one of many heroes who participated in some way in the project that, under severe time pressure, gave the customer in Tokyo a smooth-functioning digital network.

**Helena Andersson**



*"It's about communication between people.  
The rest is technology."*

LARS RAMQVIST, President and Chief Executive Officer, Ericsson.

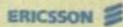


We expect to be able to communicate with anyone, at any time, anywhere. To be liberated from the constraints of time and distance. We expect technology to meet our sophisticated communications needs, but still be easy to use. And we want technology to provide us with global freedom, but in the same time to have respect for us as individuals. Allowing us to reach others - but also to make ourselves available on our own terms.

Ericsson provides innovative, flexible solutions and services for all types of telecommunication networks that are helping our customers open up new business opportunities and supply services to end-users. Services that respect the individual's needs today, tomorrow and well into the future.

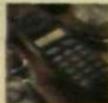
70,000 Ericsson employees are active in more than 100 countries. Their combined expertise in switching, radio and networking makes Ericsson a world leader in telecommunication.

Telefonaktiebolaget LM Ericsson, S-126 25 Stockholm, SWEDEN.



*"We have one golden rule for all meetings.  
Mobile phones must be switched off."*

TRICVY URZAHF, Senior Executive, Business Development, Ericsson Communications Ltd., New Zealand.  
ALFRED LIM, Marketing Manager, Ericsson Telecommunications Pte. Ltd., Singapore.



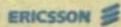
The single most powerful constraint from a company's bottom line over the world for its mobile phones and systems. But for us, it's a matter of respect. It's our way of adapting to the new world of telecommunication.

Technology allows us to communicate with anyone, anywhere, anytime. But "anytime" doesn't have to mean that we can't keep in touch while still respecting each other as individuals. Because technology also gives us the freedom to turn calls, or to use an answering service and call back in our own convenience.

Ericsson is a world leader in the development and implementation of cellular systems for mobile phones, serving more than 60% of the world's cellular subscribers. Ericsson's systems have been the foundation of an advanced digital mobile phone and services for GSM, D-AMPS, PCS and GPRS.

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*"These days, I've got more choice about when  
I work and when I play."*

WILLIAM A. FREZZA, Director of Marketing & Business Development, Ericsson GI Mobile Communication Inc., USA.

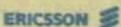


With wireless technology, data is now as mobile as we are. We can exchange information with any PC, network or database. Wherever and whenever we choose. With time and leisure time are no longer so separate. At last, they don't have to be. When we can work regularly and communicate whenever we are, we have a whole new dimension where the border between our private and working lives are no more by ourselves than others. A dimension in which we can maintain business relationships and still have time for family and friends. Wireless mobile data is making choice applying possible. It is you and I who set the limits.

Ericsson develops and implements wireless systems for mobile data based on Mobile technology. These systems provide two-way communication for laptops, notebook and palm-top computers and PDA, providing remote access to company networks and databases, information management systems and E-Mail services.

70,000 Ericsson employees are active in more than 100 countries. Their combined expertise in switching, radio and networking makes Ericsson a world leader in telecommunication.

Telefonaktiebolaget LM Ericsson, S-126 25 Stockholm, SWEDEN.



*"Broadband technology makes it even more  
important to be focused."*

CECILIA UERRE, BLOMGRÉN, Manager, Business Development ATM Broadband, Ericsson Telecom, Sweden.



The new broadband technology is changing the shape of communication between people. Soon we will all have free access to voice, data, text, image and video via public networks, 24 hours a day. As home and at work - anywhere in the world. How we use this is limited only by our imagination.

Ericsson recognized the need to harness this vast potential early on. We invested heavily in research. And one of our vision of a global information society has come technology that serves the individual's needs, while helping our customers open up new business opportunities.

Ericsson's approach to broadband communication is comprehensive. In its core is an ATM broadband system for all uses of switching, transport and access nodes. This system permits the rapid, economic development and introduction of new variable bandwidth, multimedia, interactive broadband services for business and residential users.

70,000 Ericsson employees are active in more than 100 countries. Their combined expertise in switching, radio and networking makes Ericsson a world leader in telecommunication.

Telefonaktiebolaget LM Ericsson, S-126 25 Stockholm, SWEDEN.



*"Being able to answer all my business calls right  
away gives me more spare time."*

KENEE 'T HART, Secretary to Directorates and Sales, Ericsson Business Mobile Networks BV, The Netherlands.



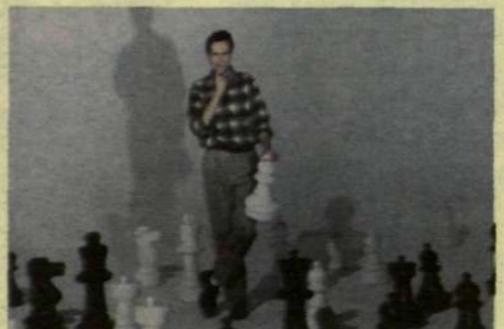
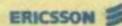
Think about how much time you waste on the telephone on an average working day. You call people. They wait in their desks, so you have a message. When they call back, you're away from your desk. And so on. At the end of the day, you find yourself working late just to catch up.

We need to support each other's time spent. To make everyone more available during the working day. Ericsson researches, develops and markets digital cordless applications for public and private networks that are making communication between people more efficient.

Ericsson pioneered the world's first DECT-based, multi-cell, multi-user Business Cordless Telephone System. T-series.

70,000 Ericsson employees are active in more than 100 countries. Their combined expertise in switching, radio and networking makes Ericsson a world leader in telecommunication.

Telefonaktiebolaget LM Ericsson, S-126 25 Stockholm, SWEDEN.



*"Adding intelligence to networks could positively change  
our lives. Makes you think, doesn't it?"*

DR. PAUL VAN HUL, Manager Technical Product Management, Ericsson Telecommunicatie B.V., The Netherlands.



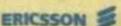
When you last called your local cinema booking agency, did you find the agent particularly pleasant and helpful? Did you know that your call might actually have been routed to someone sitting in a house on a hillside a hundred miles away? Someone who is not wanted about getting home to see the kids before bedtime.

A new era is dawning. There are literally thousands of jobs that people can do from anywhere - via an intelligent network system. If they would rather spend the rush hour at home than with strangers on a bus, they will probably be able to do so.

Ericsson has already supplied a number of intelligent network systems worldwide - and it's only the beginning. With our state-of-the-art computer and telecommunication technology, we can provide solutions tailored to specific, individual needs.

70,000 Ericsson employees are active in more than 100 countries. Their combined expertise in switching, radio and networking makes Ericsson a world leader in telecommunication.

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*"It's about communication between people.  
The rest is technology."*

LARS RAMQVIST, President and Chief Executive Officer, Ericsson.

The first in a series of advertisements promoting Ericsson's corporate image are currently being run in international telecom and business magazines, including the airlines' in-flight magazines. Often coordinated with major regional exhibitions and other similar events.

The ads - which focus on Ericsson's mission, its corporate culture and its people - feature employees from various organizational levels as they engage in private, non-occupational activities. Each of the ads in the series is linked to a particular area of competence, and highlights Ericsson's understanding and respect for the needs of its customers.

Units and companies in all markets are encouraged to use these ads locally to support major product launches, or to promote Ericsson's image in other contexts. Send a fax to Birgitta Engardt, Corporate Relations, fax +46 8 719 1070, and a set of prints of the ads will be forwarded to you.

Ted Bates

Telefonaktiebolaget LM Ericsson, S-126 25 Stockholm, SWEDEN



# The right message to the right customer

**How do you make sure that the right information reaches the right person at the right time? Stan Victor and Guy M. Wolff of Texas Instruments, the men behind TI's global, computer-based information network, have the answer.**

**At a "communicators' seminar" at Electrum in Kista recently, they described Texas Instrument's 10-year project to develop a global marketing program.**

Every company dreams of being able to quickly reach customers and other target groups throughout the world with the right information at the right time. So there was a great deal of curiosity when TI's representatives, at a communicators' seminar in Kista, described how they market the microelectronics in their products. They have unquestionably made great strides toward a totally integrated global network.

"Our vision is based on the ability to be the best communications partner in the semiconductor sector of the entire electronics industry," said Stan Victor, head of global marketing at Texas Instruments. "Our objective is to establish contacts with circuit designers as soon as they begin to develop a product, and to be regarded as their partner for target-oriented products all the way from design to finished product."

"It is a matter of building complete confidence, from beginning to end. Because of the complexities of systems on chips, nearly every design has to be custom-tailored. So it is important for us to be able to select our customers and develop a report with them."

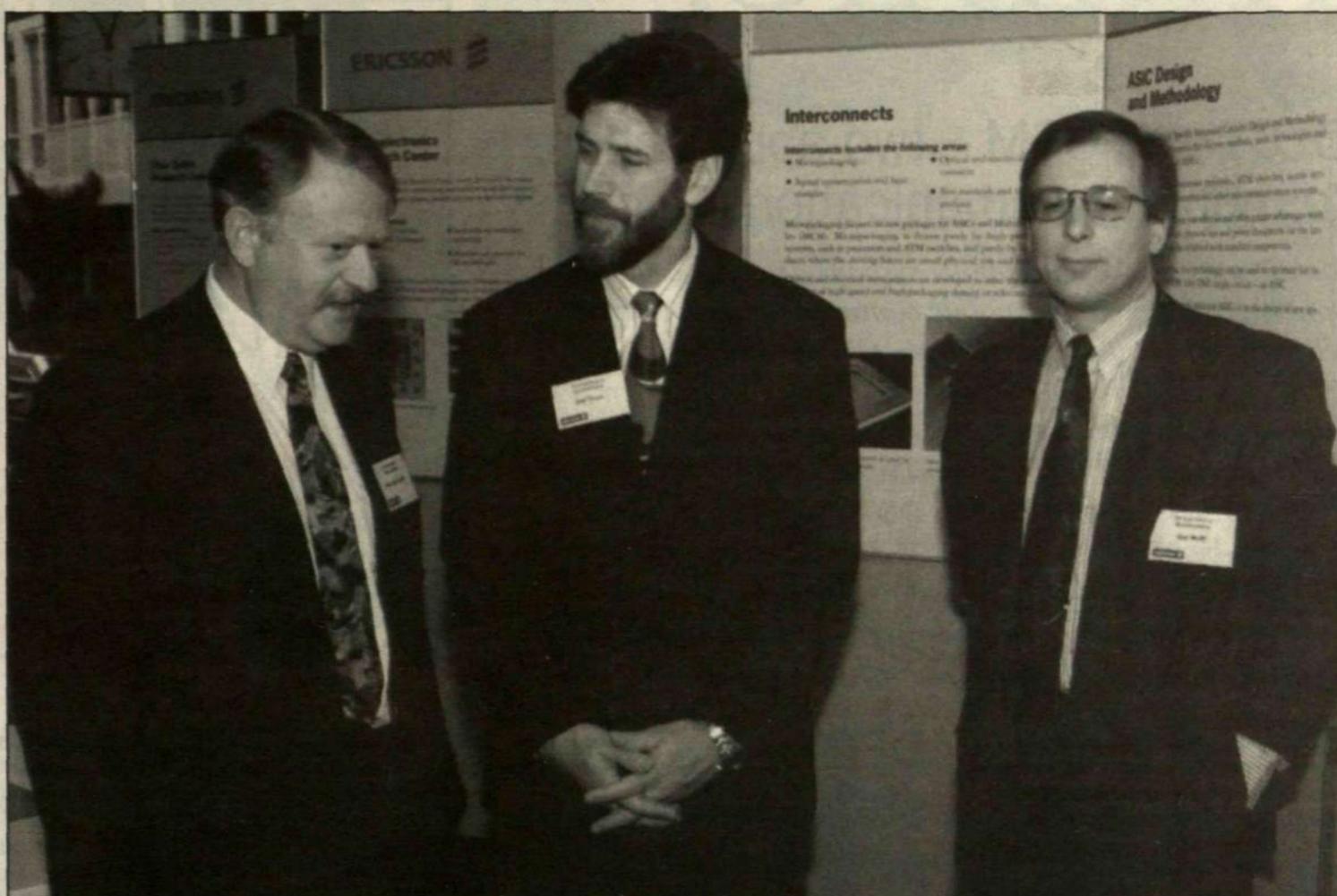
## Choosing customers

In the best American tradition, there is also a motto for the work: "We like what we do, we do it creatively, and we have fun doing it."

But how does the company select its customers?

"Finding the customer is a team job because, in truth, the customer is not just the designer," Stan emphasized. "There are at least five or six people who affect the decision in connection with the ultimate choice of the concept that will become a TI product."

"We also want to be sure that we are in the right markets, and in the markets that are growing most rapidly. We have established all these prerequisites, as well as the need for technical in-



Nils-Ingvar Lundin, Ericsson's Senior Vice President-Corporate Relations, chats with Stan Victor and Guy M. Wolff of Texas Instruments during the marketing communicators' seminar in Kista. The seminar was arranged by Ericsson's core unit, Microelectronic Systems Technology.

formation, in a marketing communications plan."

## Getting information fast

We are all bombarded with information these days: advertising in publications, in radio and television commercials, via direct mail, electronic mail and fax. Much of it ends up in the waste basket. But a prospective buyer wants to have access to information – and there are many channels for obtaining it. These include seminars, trade shows, trade publications, telephone calls, E-mail and data bases.

"A buyer who wants information often wants it fast. The channel he chooses depends on how much of a hurry he is in. Our job is to get the right message out to the right buyer at the right time in order to be able to influence his decision."

"The process begins when we listen to the customer's needs. In 1993 we conducted our most recent market studies and reviewed customer-satisfaction reports. We evaluated joint-venture projects, media relations, trade shows, how effective our publications were, and how well we are serving our internal clients."

## Giant step

The investment in a computer based system that provided global coverage was a major step in development of the marketing

communications program. Technical documentation was assigned special weight. Texas Instruments established a software standard that enabled technical writers to become more productive. The time required to produce a data sheet was reduced from four hours to two, for example. The objective is to do a job fast and do it well.

"The real challenge is to get our latest data out to our customers so that we can conduct a dialog with them," Stan Victor noted. "Fax back is an important tool."

"Via telephone or through access to TI's data base, you can now order up-to-date technical information and have it printed out directly on your fax. This represented a giant increase in flexibility, compared with the earlier alternative of printing perhaps 40,000 data sheets that might already be out of date when they came off the press. The database system has been built up and made available to technical engineers wherever they may need information. The customer or other interested party pays a fee to gain access to TI's data base."

## Global advertising

Texas Instrument's advertising is organized in a completely integrated global system. A common advertising format is stored in the

data base, along with text that is translated into the language used in each market. The same artist is used as a distinctive element of the global communications.

The list of customers and others who are reached directly by TI's information program contains no fewer than 400,000 names in the U.S. and 70,000 in Europe. In addition, the company is involved in seminars, trade shows and design competitions in cooperation with universities, always featuring spe-

cial arrangements that attract maximum attention. An hour-long video sales conference involving all salesmen throughout the world is held via satellite every Friday as a means of evaluating market conditions.

The objective is to achieve a totally integrated global marketing program. The technical possibilities already exist.

Inger Björklind Bengtsson  
Photo: Anders Anjou

**37** Days left

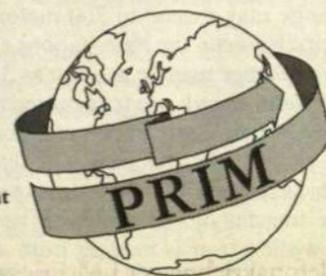


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# Cordless or mobile?

## DECT and GSM – two approaches to mobile communications

*Mobile and cordless telephone systems are both cellular in concept and both offer mobile communications via pocket telephones. But if a typical GSM cell has a radius of one kilometer, that of a DECT cell is no greater than 25 or 30 meters. GSM systems are large nationwide networks that offer radio access, mobility and international roaming, while cordless systems such as DECT are access systems that can be integrated with GSM and other technologies and which are used mainly within limited two- or three-dimensional areas. Lars Cederquist, "Contact's" technical reporter, compares the two systems.*

DECT is the acronym for Digital European Cordless Telecommunications, a standard for cordless telephony. Ericsson's DECT system is known as Freeset.

The DECT system is currently used mainly within offices, department stores, factory areas and other locations, indoors and outdoors, by mobile users within a limited two- or three-dimensional area.

**History** Cordless telephones began to be used in homes about ten years ago. They were simple instruments with short signal ranges that were in contact via radio with a desk or wall-mounted base station. The base station in turn was connected to the fixed-wire telephone network.

The development of digital radio transmission made it possible to build large systems comprising hundreds of "cordless" users within a large area.

**Customers** Customers range from small companies to large ones that purchase a complete DECT system consisting of telephones, base stations and a radio exchange. No license is required to set up a DECT network.

**Capacity** A Freeset system can serve up to 600 subscribers. If additional capacity is desired, a number of radio exchanges can be linked together.

**Base stations** The base stations are small. They weigh three kilograms and measure 28 x 23 centimeters across and just under 8 centimeters in "depth."

They are mounted on a wall and have an indoor range of 20 to 100 meters horizontally and one story vertically. Outdoors, the range may extend to 300 meters. The distance between the base stations and the radio exchange may be as great as 3.5 km.

The radio signals are transmitted at 1.88 to 1.9 GHz, calls are encrypted, and each base station has 10 channels, each of which can handle 12 calls simultaneously.

The transfer of calls between base stations while a user is moving from one location to another cannot be detected since

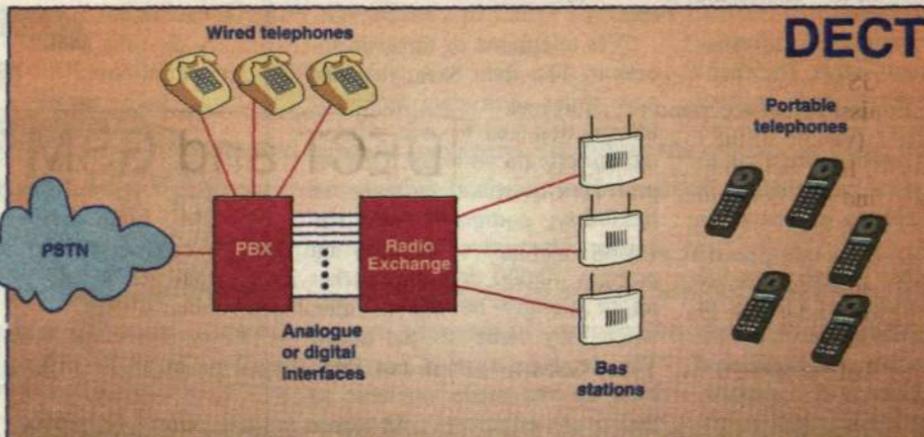
## DECT – the first step towards personal telephony

there is no "break" during the handover. The telephone itself gauges the signal strength from the nearest base station and does not release a station until contact has been made with the next one.

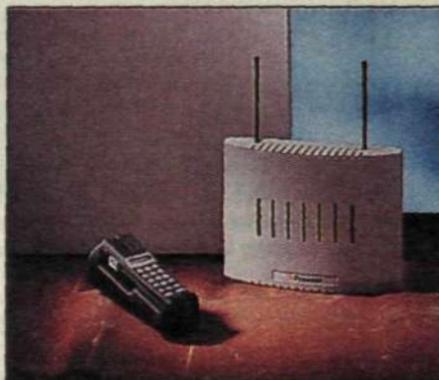
Frequency planning, to avoid interference by the various cells, is extremely simple since the system configures itself.

**Voice quality** The voice quality is very high, thanks to the 32 kbit/s ADPCM voice coding that produces the same quality of sound available in a conventional wired instrument.

**Services** The services available are essentially the same as those offered in the



Freeset, Ericsson's DECT system, consists of cordless telephones that communicate with radio base stations which relay calls to a radio exchange. The Freeset system is connected via the radio exchange to a subscriber exchange (PBX) which, in turn, is linked to the fixed-wire telecommunications network.



A DECT base station with Ericsson's Freeset telephone.

conventional telecommunications network. With Freeset, it is also possible to transmit data at speeds up to 32 kbit/s.

**Telephones** Freeset telephones weigh slightly more than 200 grams and measure 15.5 x 5.4 x 2.6 centimeters. The rechargeable batteries provide three hours of call time and 16 hours of standby time.

A Freeset currently costs around SEK 4,500.

### Subscription and call costs

Because they replace conventional desk instruments, there is no extra subscription charge for DECT-system telephones. Internal calls are not charged and the tariff for external calls is the same as for calls made over a conventional telephone: 14.5 öre per minute for local calls in Sweden.

**Market** At the end of October 1993 Ericsson introduced the world's first commercial multicell DECT system, a DECT version of Freeset. This system has now been granted type-approval for sale in Norway, Denmark, Finland, Germany, Holland, Austria and Great Britain. Type-approval for the other European Union countries is expected to be received during 1994. Freeset is being marketed in Western Europe, Australia, Southeast Asia, North America (including Mexico), Brazil and Venezuela.

**Personal telephony** In the future DECT technology can conceivably be used for personal telephony (PCS) in systems that typically cover an entire city and which offer such multimedia services as voice, data and brief messages.

Experimental PCS systems are currently being installed in Förde, Norway, where 160 DECT base stations are being linked to the local telephone exchange, and in Porvoo, Finland, where the DECT systems is being connected to an AXE exchange.

### Radio in the local Loop (RLL)

DECT systems can be used as so-called RLL networks that employ radio technology to replace the traditional copper wire connection from the local exchange to individual fixed-wire telephones:

1. Using a base station that communicates via an antenna mounted on a building, from which wires are led to the subscriber's telephone jack and fixed-wire telephone.
2. Through communication from the base station directly to cordless telephones, which then permit mobility throughout the area covered by the radio exchange.

The Freeset system can be connected digitally to an Ericsson MD110 subscriber exchange, analogically to virtually any PBX, or even directly to the local exchange in the fixed-wire network.

DECT is based on Time Division Multiple Access (TDMA) technology that divides the 20 MHz band into both frequencies and time-slots.



Illustration: Leif Sundberg

GSM – Global System for Mobile Communication – is a standard for public digital mobile telephony. It is today the world's leading digital mobile telephone system.

**History** The development of GSM was started 10 years ago under the sponsorship of ETSI, the European standardization organ, to replace a dozen incompatible mobile standards with a common standard.

GSM now permits international roaming; a subscriber can continue to use his mobile telephone when he crosses national borders. GSM, which has been in commercial operation for only a few years, has already been transformed from a European standard to a global standard.

**Customers** The customers for GSM are the operators of mobile telephone systems and individual users who purchase a mobile telephone and subscribe to a system. A license is required to operate a GSM network and up to now, in most countries, two or three independent operators have received such permits.

**Capacity** A GSM system can be built to accommodate a flexible number of subscribers. Capacity can be expanded, mainly by providing greater density by using smaller cells and more base stations.

**Base stations** The base stations are now rapidly becoming smaller and easier to install and maintain. Micro base stations, for indoor and outdoor use, can be mounted in convenient locations and are required for so-called hierarchical networks in which large, medium-size and small cells are "stacked" in layers. Base stations can cover an area within a radius of several kilometers while the new small microstations transmit with less power and cover only several hundred meters.

The radio frequency used for transmissions is 900 MHz (890-960) and calls are encrypted. PCN (Personal Communications Network) systems with smaller cells use 1800 MHz (1710-1880) frequency.

## GSM – a European standard winning the world

The transfer of a call from one base station to another is direct (not "soft") and is controlled centrally. The mobile telephone gauges the signals from surrounding stations and alerts the Base Station Controller (BSC), which effects the transfer.

The frequencies for a GSM network have to be planned rather carefully. But in the future so-called random frequency-hopping, also permitting higher capacity, will reduce the amount of planning.

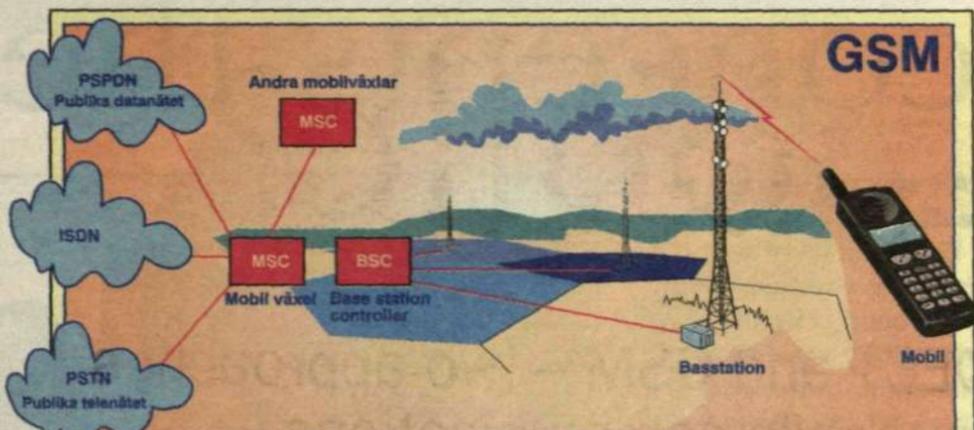
**Voice quality** The voice quality of a GSM mobile telephone today does not match that of a conventional desk instrument (13 kbit/s voice coding) but is comparable to – and under difficult conditions superior to – analog mobile systems.

**Services** In addition to voice transmission, GSM offers the following services: transmission and reception of 'short messages' (visible in the telephone's display panel), fax (including all analog fax signals) and data communications (at speeds up to 9.6 kbit/s). Intelligent network services to be introduced in the future include caller identification and common messaging to all telephones in a given area.

**The telephones** The latest GSM instruments weigh about 200 grams and measure 13 x 5 x 2.4 centimeters.

With a standard battery, Ericsson's new GH 337 telephone offers one hour and 40 minutes of talk time and 20 hours of stand-by time.

The GH 337 has a display with space for 36 characters and is adapted for the direct transmission and reception of short messages. A single message can contain as many as 160 characters, which can be scrolled.



A GSM network is built up in cells to cover an entire country, with large cells in rural areas and smaller ones in densely populated areas.

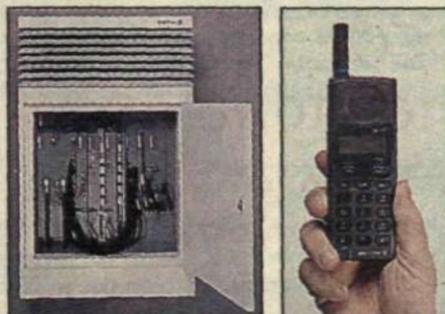
Calls from mobile telephones go by radio to base stations that are linked together in groups with a Base Station Controller that handles the transfer of calls from one station to another as the subscriber moves within the system. The more intelligence that is incorporated in a BSC, the simpler and smaller the base stations can be made.

The BSC is linked to a mobile exchange (MSC), which is the hub of the system. The mobile exchanges, which are in contact with each other

and with databases, feed calls to the fixed-wire telecommunications network, an ISDN network and the like. The Home Location Register (HLR), which contains a list of subscribers, the services they are using, etc., constitutes an important node in the GSM network.

GSM is an open standard with a clearly defined graphical user interface; exchanges and base stations from different suppliers can be used in a network, giving the operators freedom in their choice of products.

TDMA technology is used in the 50 MHz frequency band (for today's GSM 900) to divide the carrier waves in 8 time-slots.



A GSM base station and Ericsson's new GSM "GH 337" telephone.

The GSM telephones are equipped with SIM (Subscriber Identity Module) cards that identify the user to the system operator and serve as the basis for services and billings and prevent unauthorized use of the instrument, etc.

A GSM pocket telephone costs approximately SEK 10,000.

**Subscription and call costs.** The price of a GSM subscription can vary substantially but common costs of a subscription to Telia's GSM network in Sweden are SEK 300 for the connection fee and approximately SEK 150 per month for access to the network. A daytime call in Sweden costs SEK 3.45 per minute.

A GSM subscriber can roam internationally and be connected with any GSM system.

**Market.** As of early 1994, a total of 100 GSM licenses had been granted in 60 countries. Most of the licenses have been granted in Europe (27 countries) and Asia (24 countries). In contrast, GSM is not yet available in America but a GSM PCN network may be established there.

There are currently just under two million subscribers in GSM networks.

**Personal telephony.** GSM networks for personal telephony are now operating in England and Germany in the form of PCN networks using the 1800 MHz frequency.

**Radio in the local loop (RLL).** Because GSM technology has highly advanced mobile functions, it is not directly suitable as a replacement for cable in a local fixed-wire network. GSM networks can, however, utilize any surplus capacity for "radio in the local loop" service by offering subscribers limited mobility at the same tariffs as in the fixed-wire network.

Lars Cederquist

## DECT and GSM in same system

A combination of GSM's functions for mobility and DECT's capacity to serve many users within a small area would offer considerable advantages.

An international company could then install DECT systems in all its offices and later have them connected to the GSM system in each country. Employees in the Stockholm office could communicate with colleagues in London on their DECT telephones via the GSM network. If a subscriber traveled from Stockholm to London, he could take his telephone with him and use it in both locations, thanks to the GSM system's ability to locate each individual instrument.

This combination is possible since DECT has been designed to permit the link to the GSM network. Standardization work is under way.

The technical solution for this involves a connection from GSM's mobile exchange to the DECT network's radio exchange via a so called Interworking Unit (IWU).

If a telephone instrument is developed that can handle both DECT and GSM, the subscriber would be able to place and receive calls anywhere using the same telephone. (Such an instrument today would, in principle, consist of two telephones in a single housing.)

# They spread the FOCUS concepts theatrically

**"All approaches are effective."**

**That was what ten Ericsson employees in Östersund concluded when they wanted to disseminate easy-to-grasp information about FOCUS.**

**In a play entitled "What are you up to now, Broström?" they have dramatized the FOCUS concepts for better and more efficient operations.**

The Broström identified in the name of the dramatic production is Rolf Broström, manager of the Supply and Distribution core unit in Ericsson Telecom, a unit well on its way to achieving the FOCUS objectives.

FOCUS (For Our CUSomers) was started in the autumn of 1992. It has spawned a number of product units in the plants, each of which has streamlined its production of components or systems.

Production within Ericsson Telecom has traditionally been organized in a highly functional manner. Parts for systems or components have been made by a number of units, each of which was scarcely aware of the other's existence. Printed circuits were assembled in one department, cable in another, and a third department finally tested the system.

## Flow groups

On the road to a flow-oriented organization – in which as many persons as possible who are involved in an operations are able to see the "total picture" and the final product – there are now a number of "islands." In these enclaves, the vision of total responsibility and concentration on the finished product has become a reality.

One example is the Tool component unit in Katrineholm, in which a department with so-called flow groups. All employees perform all the tasks involved in production. Traditional clerical jobs are also carried out by the flow groups.

"We call this 'the outer circle,'" says Björn Johansson, the department's product manager. "It includes, for example, logistics, quality control, financial aspects and personal responsibility. Each employee is allowed to have responsibility for a maximum of two outer circles at a time."

## Quality responsibility

The quality-responsibility function, for example, involves handling claims and customer complaints, and being responsible for



To promote the FOCUS concept in an easy-to-grasp manner, employees in Östersund have "toured" with a play: "What are you up to now, Broström?" The "dramatic" production has been very well received. From left: Karin Jonsson, Jonas Kram, Christina Eriksson, Monica Gunnarsson (reclining), Anne-Lee Stenberg, Örjan Hansson, Patrik Bäck, Irène Frestadius, AnnaKarin Olsson, Anita Wengborn and Maud Jibor. Photo: Kurt Johansson

following them up to reach fixed objectives.

"The objectives that we have agreed on are what control all operations in the department," Björn emphasizes. "While each flow group has its own targets, the department's objective is what is most important. As a result we are careful not to build walls; the various flow groups must be able to cooperate."

## Greater responsibility

The person in a flow group who has the financial responsibility participates in budget work and performs various financial follow-up jobs. He or she also has certain certification rights.

The production manager has the basic responsibility for personnel matters. But responsibility for handling sickness notices, changing the employee register, interviewing job applicants and time-reporting rests with the flow groups.

"Today, everyone assumes greater responsibility so that we can reach our objectives, and everyone is more involved" Björn says. "Before, everyone did his or her own thing."

## Pilot group

A pilot group keyed to the basic FOCUS principles has been operating in Östersund since last October. The group consists of ten persons who jointly build complete IOG systems for AXE exchanges.

The group's goal is to build IOG systems in four days. This goal has proved to be fully attain-

able – and with high standards of quality, too.

"When we have had problems with deliveries it has generally been due to lack of components, problems with software in system testing or waiting time before we can use common equipment," says Eva Hallin, one of the members of the pilot group.

## Share equipment

The group today does not have its own equipment for function tests of printed circuits but has to "share" with other departments.

Kjell Edfeldt, foreman of the pilot group sees only advantages in the new way of working.

"The pilot group is incredibly enthusiastic," he says. "Now there is talk of delivering systems, not just individual printed circuits. Moreover, it is easier to communicate since people are close together and faults can be corrected more quickly."

"We have a much greater understanding of each other's jobs and work assignments now," Eva Hallin adds. "And we have more 'mobile' work, which hopefully can reduce the risk of physical damage from heavy loads."

## Teamwork

The Circuit Board product unit in Norrköping has also taken a giant step toward a new way in which work is organized. Here, there are no longer foremen of the traditional type. Instead, each department has a "developer" team.

"The team includes the skills required for employee develop-

ment, technical development and production development," Marie Jacobsson, an employee developer on one of the unit's three teams, explains. "Someone on the team is always available during production hours."

The team runs the department jointly.

"Since we have different areas of expertise we can help and support each other," Marie points out. "It is difficult to be an expert on everything; we all have our strengths and weaknesses."

"Members of the team have to be located close together and hold frequent meetings. The new way of working requires good coordination."

All developers serve for periods of two years, since a policy of rotating leadership is applied throughout the Supply & Distribution unit.

## Modern leadership

The developer-team plan is unique to the Circuit Board product unit in Norrköping. In other product units the production leader is responsible for a number of flow groups. The production leader is a foreman in a modern version. His or her leadership has to be characterized by "management by objectives" and delegated responsibility. Gone are the days of "run things and divide the work."

The FOCUS project affects all employees with Ericsson Telecom's product supply organization, not just the production departments. All traditional staffs are also being analyzed

and changed in accordance with basic FOCUS principles, and with specific objectives.

As a result of an analysis of this type in Norrköping, the staffs in the Norrköping plant and the Circuit Board plant were merged to perform joint functions.

## Bonus incentives?

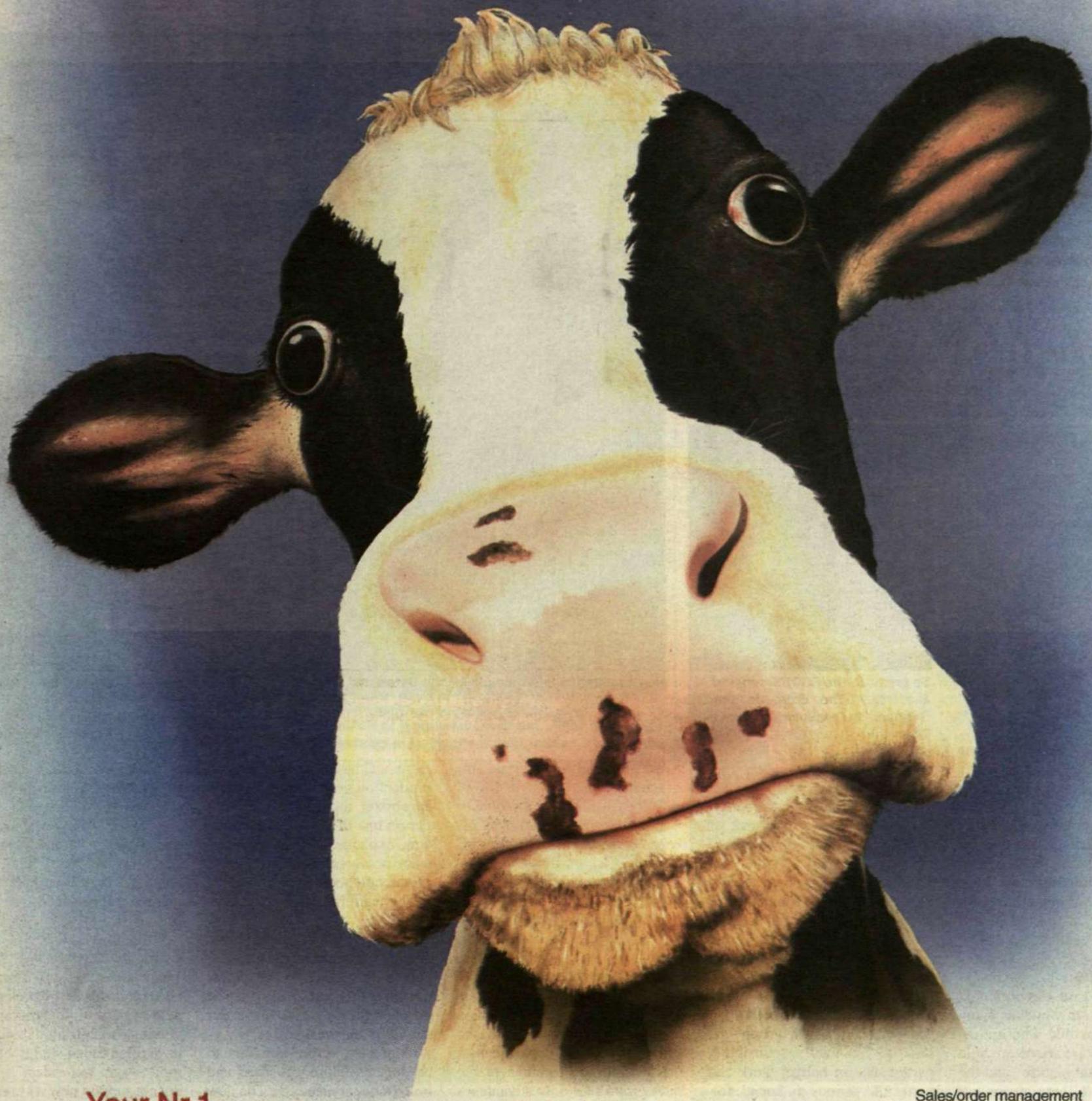
Wage and salary systems have to be included when developing a new organization. Programs involving organizational changes have often failed simply because rigid wage and salary systems did not support new ways of working.

The ATN product unit in Norrköping is developing a wage and salary system, plus a bonus system. A preliminary proposal for a bonus system has now been drafted. It contains parameters linked to FOCUS objectives: a production-cost index, throughput time and delivery reliability.

"We are proposing that the bonus be outside the fixed-compensation system and be paid twice a year, at vacation time and at Christmas," Sören Lindmark, the project leader, says.

The proposal calls for the production-cost index to be calculated based on the entire product unit, while throughput time for printed circuits, as well as delivery reliability, would be calculated for each production area (department). The minimum bonus would be nil. In other words, everything to gain and nothing to lose.

AnnaKarin Olsson



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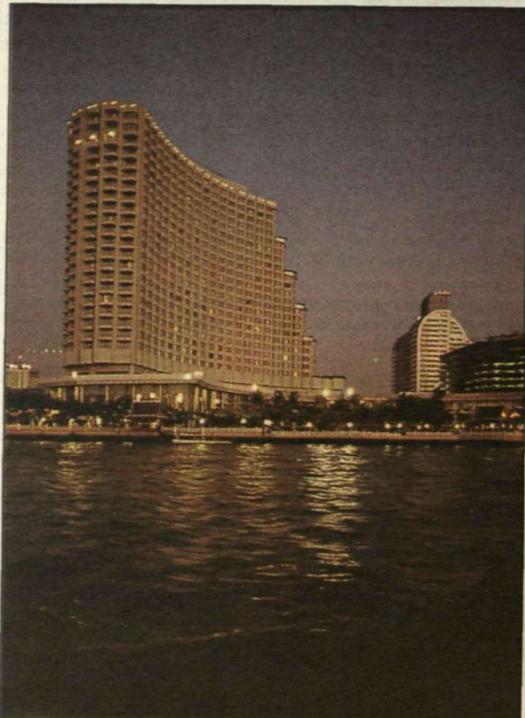
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# Now 'the other Thailand' is emerging

Thailand's economy is growing at an amazing rate, but this growth is concentrated heavily in the capital city of Bangkok. Now the government is investing nearly half of this year's national budget on infrastructure in "the other Thailand," the undeveloped rural area. Ericsson is participating in this program, in part by installing 500,000 new telephone lines.

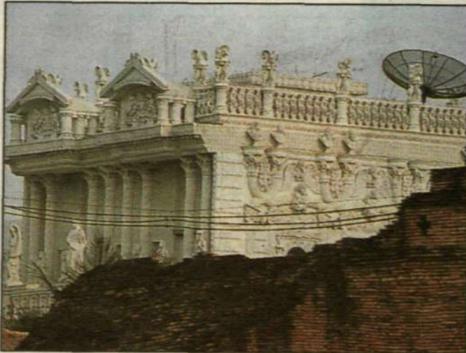
Ericsson is playing a key role in the government's program in rural areas



Bangkok's first street was laid out only 130 years ago. Today it is a city of 2.5 million inhabitants. This is the East Asiatic Company complex on the banks of the Chao Phraya River.



For many Thais, mobile telephony is synonymous with Hot Line. Ericsson introduced mobile telephony in Thailand in 1986, but then lost ground to Nokia. Now Ericsson has come back strong and has about 15 percent of a market that is expected to quintuple in size by the year 2000.



The old and the new. On this historic building beside Bangkok's old city wall, someone has mounted a TV satellite dish.



Ericsson's Bangkok office is located near the Don Muang Airport.



Ericsson is playing an important role in Thailand's investment program in the underdeveloped rural area of the country.



Installation of equipment at Telephone Organization of Thailand in Chiang Mai. Ericsson's largest Thai project involves installation of 500,000 new lines in the northern parts of the country.



"The Thai rural area is substantially underdeveloped compared with Bangkok," says Rolf Granström. Ericsson's project involving the installation of 500,000 telephone lines in the northern parts of the country is important for Thailand's growth.

## Ericsson's largest project in Thailand

A high degree of optimism characterizes Ericsson's operations in Thailand today. The Thai government's heavy investments to level out the great gaps between the standards of living in Bangkok and the rural area of the country have given Ericsson a key role in this process of change. As part of the largest project in the 86-year history of Ericsson's Thai company, 500,000 new telephone lines will be installed throughout Thailand.

While L M Ericsson, having installed 2,400 telephone lines in Bangkok as early as 1908, can be regarded as a pioneer in Thailand, it was not until the 1950s and 1960s that operations became really substantial. Today, approximately 850 persons are employed in three different Thai companies: Ericsson Communications (Thailand) Ltd., Ericsson Telephone Corporation Far East AB and Ericsson Thai Networks Co., Ltd.

"We are maintaining a position at the forefront," says Rolf Granström, who is responsible for operations in Thailand. "We can offer competitive products and we have a solid reputation in the country. In addition, we have many Thai employees with long experience who constitute the 'backbone' of our companies."

**New lines in the North**  
While mobile telephony is highly visible and underscores Ericsson's position in the country, the big project right now is unfolding out in the countryside. Half a million new telephone lines are about to be installed in the northern parts of Thailand.

**Ericsson a pioneer**  
If L M Ericsson was a pioneer, a number of milestones in Thailand's telecommunications history can be attributed to the modern Ericsson. It was Ericsson that installed the first international direct lines to and from Thailand. And it was also Ericsson that introduced and built up the first analog mobile telephone system, as well as the first digital GSM system.

Ericsson introduced mobile telephony in Thailand in 1986 but, after a very fine start, lost ground to Nokia. As a result of putting pressure on prices, it has come back strongly, however.

"Our rapid recovery in the mobile telephone market was naturally very gratifying and shows how strongly we had established our presence in Thailand," Rolf Granström says. "We now have about 15 percent of the market. By the year 2000 it is estimated that the number of subscribers will have quintupled, to two mil-

lion, of whom half will be connected to digital systems. We have great hopes of being able to acquire a substantial percentage of the increase."

For many Thais, mobile telephony is a Hot Line system. A consistent marketing program, with special emphasis on television commercials and the use of large billboards, has made Hot Line a very well known brand name - and a symbol of fast-growing, dynamic Thailand.

The Business Networks business area represents another growth potential for Ericsson in Thailand. There is expected to be an increasingly larger market for such products as its digital PBX system that handles both voice and data on the same line, and for BusinessPhone and Freeset.

In the defense systems sector, Ericsson is working closely with the Thai government on the development of digital radio communications systems, digital field exchanges and encrypting systems.

Ericsson is also delivering cable to the two large telecom operators: Telephone Organization of Thailand (TOT) and Thai Telephone and Telecommunications (TT&T).  
**The university that wants to be the center of northern Thailand**  
NEXT PAGE >>>

Based on our Western perspective, the Thais' view of their own economy may appear to be odd. Despite an expected growth rate of 8 percent in 1994, they prefer to speak of stagnation and recession. But even if the golden years at the end of the 1980s - when the annual growth in GNP was around 12 or 13 percent - are only a memory, many people believe that Thailand will be the strongest nation in Southeast Asia by the year 2000.

If any foreign company is in a position to appreciate the dramatic change at close range, it is Ericsson. As early as 1908, during King Chulalongkorn's wave of modernization, Ericsson began to install telephone lines in what was then Siam. And today, when young Thais cruise the streets of modern Bangkok in Mercedes-Benzes with mobile telephones and personal pagers in their pockets, Ericsson is in a stronger position than ever.

"If we look ahead to 1996, the potential is enormous," says Rolf Granström, who is responsible for Ericsson's operations in Thailand. "Our long history, and above all our solid reputation as a high-technology company and partner, have created a degree of confidence that we are delighted to have right now."

**Solid reputation**  
The country's "recession" is indeed a strange one. Car sales in

Thailand rose 15 percent in 1993, for example. Compared with the golden years at the end of the 1980s when the corresponding annual increase was seldom less than 40 percent, this may possibly seem like stagnation. But viewed globally, the results are brilliant. The inflow of foreign capital is unceasing, and in 1992, when large parts of the world were fighting for survival, more than 300 joint ventures with foreign interests and investors were started in Thailand. This occurred despite the fact that for several days in May 1991 Thailand had been shaken by an attempted military coup that led many financial observers to believe that Thailand's economic saga was over.

One of the explanations for Thailand's unique growth lies in the myriad decisions and essential

reforms that have changed the economic system in the country. More than 250 laws were changed during the period between February 1991 and March 1992 alone. Most of them simplified the nation's bureaucracy and totally altered the investment climate in Thailand.

Ericsson's investment in Thailand is a good example. The company recently inaugurated a factory for the production of AXE exchanges in Rojana Industrial Park, not far from the Don Muang Airport.

**Bangkok growing**  
"The plant has very substantial expansion possibilities," Rolf Granström says. "It is completely adapted to a growing market not only here in Thailand but throughout the expanding and dynamic Pacific Asia region."

Thailand's major problem is urbanization. Bangkok doesn't seem to recognize any limits to growth. Visitors to the city, who at first glance think that they are seeing an American metropolis with seemingly endless freeways and glass-walled skyscrapers, should remember that it is only 130 years since Bangkok acquired its first street - New Road. Up to then, the city consisted of 200 canals. Only the king's palace and temples were on land.

Today it is undeniably hard to realize that Bangkok was once a garden city, with elephant trails leading through the greenery.

**Chaotic traffic situation**  
The single-lane road that once led out to Don Muang Airport is now only a memory. In the early 1970s it was widened to four lanes and today one can drive - or,

more precisely, crawl at a snail's pace - on a ten-lane skyway.

Bangkok's unhampered growth can best be illustrated with a few figures on its traffic. If Bangkok's 2.5 million inhabitants should take to the road at the same time, their vehicles would cover 50 square kilometers.

And Bangkok has only 40 square kilometers of road surface! Each day 400 new vehicles join the chaotic traffic, in which a short trip within the city can take three to four hours during the worst rush periods.

**Rural development**  
But the Thai government is now investing heavily to develop "the other Thailand," the rural area that can be defined roughly as everything that isn't Bangkok. And Ericsson is deeply involved in this process.

"We are now engaged in our largest-ever project in Thailand," Rolf Granström notes. "We will install 500,000 lines 'up country,' as they say here. In other words, we will contribute substantially toward developing the rural area and thereby create conditions for the government's program of leveling the gaps between Bangkok and the rest of the country."

The gaps to which Rolf Granström refers are indeed astounding. Income per capita in Bangkok is 40 times higher than in the rural area. Today, 10 percent of the population is employed in industry and accounts for nearly 25 percent of the country's Gross National Product.

This year a full 47 percent of Thailand's SEK 200 billion budget will be allocated to development of the rural area. The go-

vernment has started a comprehensive road construction program to improve communications. The railway network is being expanded. Power plant and irrigation projects are already under way.

**Important network**  
During 1993 the Thai Ministry of Industry received nearly 500 applications from companies - many of them with foreign connections - that wanted to start operations in southern, northern and northeastern Thailand. "An efficient telecommunications network is naturally a prerequisite if a trend like this is to continue and be productive," Rolf Granström emphasizes.

**Thailand report:**  
Text: Lars Magnus Jansson  
Photos: Lars Åström

# Chiang Mai University aims to be regional center

**Ericsson's big project in Thailand right now involves the installation of 500,000 lines "up country," in the rural area that the Thais also call "the other Thailand." And one of the major users of those lines in Chiang Mai, the region's largest city, will be Chiang Mai University.**

Chiang Mai is Thailand's second-largest city, only one twentieth the size of Bangkok but well established as the economic center of northern Thailand.

The city has not developed nearly as rapidly as Bangkok, and many of the nearly six million tourists who visit Thailand annually take the 100-mile trip to the north to experience "the old Thailand."

Chiang Mai University, one of the largest in the country, with 17,000 students and 13 faculties, is the core of the city. It not only attracts students from the northern districts of Thailand but from other parts of the country, including Bangkok, as well. There are also visiting students from Laos, Cambodia, Vietnam and Burma, as well as from the United States, Canada and Australia,

## Own infrastructure

Approximately 30,000 persons — one tenth of Chiang Mai's population — live within the University district. This district has its own infrastructure, in which communications plays a major role.

And this is where Ericsson has one of its most loyal customers.

"We chose Ericsson for just one reason," says Therdsak Kosaiyakanont, the university's vice president. "We chose Ericsson because it is the best. This is our own opinion, of course, but

**'We want to be a new center for the entire region'**

during the ten years that we have worked with Ericsson we have been convinced that we are right."

Mr Kosaiyakanont has high ambitions for the university. He wants it to be a center for northern Thailand, southern China, Cambodia, Laos and Vietnam.

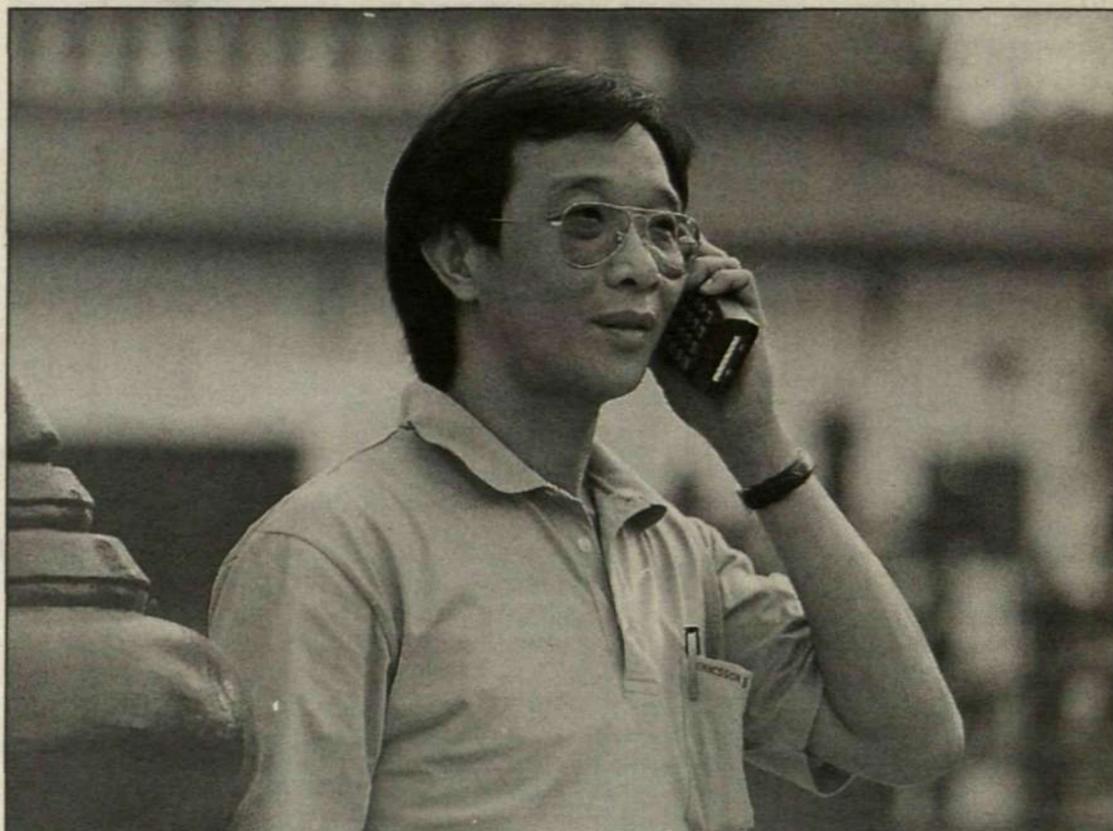
"There are 320 million people in the same language region here," he notes. "It is natural for us to offer good educational opportunities in this dynamic area. And since we want to build up a network that communicates with the outside world, we want the very best equipment."

But, as in so many other areas of the world, growth is hampered by financial limitations and the university's aspirations in the communications sector are naturally greater than its funds.

## Wants to grow

The university's communications network is based on Ericsson's MD110 PABX.

"We have 270 outside lines and 2,000 extensions," Therdsak Kosaiyakanont says. "We have a budget for another 1,000 lines and we hope to be able to further expand the system. We also use Ericsson modems for our computers and since all students — regardless of their educational program — have to learn to work with computers this equipment is extremely important."



Ericsson has earlier delivered a great part of Thailand's mobile telephone networks. Now it is beginning to install 500,000 new telephone lines in northern Thailand, in the area around Chiang Mai.



"We chose Ericsson because it is the best," says Therdsak Kosaiyakanont, vice president of Chiang Mai University.

Chiang Mai University regards its cooperation with Ericsson as a long-term "give-and-take" venture.

"Ericsson is training us and we



All students at the university learn how to use computers. The instructor and student are working with a bank of Ericsson modems. "We view the cooperation as an exchange of information in which we can learn a great deal about a large international high-technology company, just as our experience can be valuable to Ericsson. It is indeed a rewarding and exciting cooperation."

# Ericsson inaugurates new plant

**A new AXE production unit in Thailand was inaugurated formally in April.**

**The plant will manufacture and deliver 248,000 lines in its first year of operations (but production capacity can be substantially increased).**

The plant, on the outskirts of the old Thai capital city of Rojana, 80 kilometers north of Bangkok, was placed in service in June 1993 but formal inauguration ceremonies were deferred until the past spring.

"Things have gone extremely well during the first year," according to Johnny Dikbo, plant manager from the start. "We have achieved our production targets and I

and our 55 employees are very proud of the plant and its accomplishments."

In a climate of oppressive heat, with extreme humidity during many months of the year, every effort has been made to create a reasonably dry and comfortable climate in the plant.

The factory building occupies 4,200 square meters of a 33,000-square-meter site. Up to now, only one third of the floor area is being used.

"The plant was naturally built with the idea of being able to expand production," Johnny Dikbo says. "We are in a dynamic part of the world, close to Vietnam, Laos and Cambodia, countries with enormous needs for telecommunications."



Plant manager Johnny Dikbo.

Somewhat surprisingly in Ericsson's high-tech world, all of the production in the plant is manual. "In this stage of our operations it is not economically feasible to build up completely automated production," Johnny Dikbo explains. "We have a very fine work force, some of them trained in Sweden, Norway, Ireland and Holland. We have practically no employee turnover and we are turning out the production expected of us with relatively modest equipment."



The Rojana plant was placed in service in June 1993.

# The 'Emperor' bids farewell to his troops

*The die is cast! Lars Berg is leaving Ericsson after 24 years to become president of Telia. He made one of his last appearances as manager of the Business Networks Business Area in the Provence city of Arles in southern France, clad as Julius Caesar. "Contact" was there as the "Telia emperor" drew parallels between the ancient Romans and modern corporate enterprise.*

They came from all over the world, more than 200 top salesmen of Ericsson's versatile MD110 subscriber exchange. In Arles, the beautiful city whose history traces back to Julius Caesar's time, they renewed old international contacts and established new ones, and exchanged experiences in a most pleasant environment. The high point was Lars Berg's inspiring speech in which, among other things, he drew parallels between the ancient Roman and modern corporate enterprise. Excerpts follow.

It is fascinating to be on a place with such a long and exciting history. Julius Caesar lived a long time ago, so what – if anything – can we learn from his example? In fact, a great deal of what we can learn from the Romans is highly pertinent to our business strategy here and now.

## Important communications

First, there is the importance of communications. The Roman Empire was widely dispersed. It was as large – viewed as a whole – as all of Europe, and with much more varied environments and cultures.

Perhaps the Romans' greatest achievement was the unique communications system they created within their empire. A comprehensive network of roads made it possible to distribute messages to all parts of the empire within three weeks – incredibly fast for that time.

## Most important lesson

Nevertheless, this system was not adequate to enable everything to be controlled from Rome, a fact from which we can learn what is perhaps the most important lesson of all. Power was delegated to local leaders who had their instructions but who were also given great freedom to apply their own principles and methods of control. In its greatest days the Roman Empire produced generations of competent leaders who did not hesitate to make decisions – and who could count on support from above. In our own world we

believe in giving managers the greatest possible independence and freedom to implement their own ideas.

## Cooperation

Second, there is the importance of cooperation and partnership, and even of multinational companies. Yes, there actually were such enterprises in the Roman Empire – and some of them operated successfully for centuries. The most interesting of these was the imperial glassworks. It had two head offices, one in Cologne in the Rhineland, and the other outside Antioch in Syria. Fantastically enough, the development programs carried out in these two locations were coordinated for hundreds of years. Scientists and technicians traveled regularly between Germany and Syria, disseminating ideas and learning from each other.

## Partnership

The Romans were good at utilizing the advantages of partnerships – and this is something we have to be better at. Technologies and markets change with lightning speed and we have to change with them in order to remain competitive. Remember the Roman example: businessmen who were committed to cooperate despite distances and problems. If they could cooperate, so can we.

Third, the Roman Empire was a borderless territory without barriers. It was completely natural for people with very different backgrounds to work together. You only have to scan the list of Roman emperors to confirm this.

After the first emperors, who were all related to Caesar, there were a number from all corners of the empire.

No other organization in history has been so successful in welding together peoples of varying types and obtaining good results from such cooperation.

## A universal language

Finally, there is another factor that we have in common with the Roman Empire: language. The Romans spread Latin throughout the known world. And we, too, have a universal language – sometimes referred to as Ericsson Swinglish but also known as "techno talk." Using this language is a very effective way of confusing opponents. Sadly, however, our friends – the customers – are often just as confused.

We have to learn the languages of our customers: the languages of the financial world and of banking, the languages of process industries and of the service sector and all its ramifications. It is nice to have a universal language, but we have to be sure that everyone understands it.



Lars Berg goes from strength to strength. A laurel-crowned winner, he was recently named chief executive officer of Telia.  
Photo: Thord Andersson

Thord Andersson

# EVALUATING INDUSTRY TRENDS

A few short days in the spring are perhaps the most important of the year on the telecommunications industry calendar. That's when the Ce-Bit Trade Fair, the world's most comprehensive and best-attended telecommunications trade show, takes place in Hannover, Germany. Megatrends, minitrends, successes and flops – all are on display at CeBit. It's where the industry decides what lies ahead, and what will never become reality.

"Contact" asked Hans Jangeby, a freelance journalist who specializes in data processing and telecommunications, to summarize the innovations and trends at this year's CeBit Fair.

## CeBit reveals what's hot and what's not, and what's developing in telecom

This year's CeBit Fair was, as usual, well attended. The number of visitors, 670,000, set a new record, and there were 5,800 exhibitors. The Fair offered an unprecedented large range of products and services, but few major product innovations. Still, to the degree that it is possible to detect lines of development and trends, the Fair is a good barometer. A number of simultaneous trends are apparent in each sector that depends on data. But superimposed on these trends there are megatrends that affect and impinge on many different sectors, and which will be of major importance in the years immediately ahead.

By monitoring the Fair closely, it is possible to analyze both megatrends and other, minor trends. An exhibitor's status and presence in each sector can verify the strength of trend lines and megatrends or discount them. But the Fair visitor is guaranteed exposure to the latest technology in the data processing industry, and its use.

### Telecommunications growing

Telecommunications — which was on display in more than four halls covering more space than in earlier years — represents a clear megatrend. The importance of telecommunications is becoming more obvious as the transmission of information becomes increasingly unstructured. Pure registers or data bases in the form of text require an ever-smaller percentage of data processing capacity. The integration of data processing and traditional telecommunications is increasing, not only in networks but at the user level as well. Users can now transmit digital documents in the form of text, sound, images and video.

Client/server technology and graphical user interface also require greater speeds. Unstructured information requires more data processing capacity for storage and communications. As a result, the need for higher transmission speeds is increasing rapidly.

Telecommunications manufacturers, data communications companies and telecom operators everywhere are working to meet the need for increased communica-

tions. Judging from the exhibitors at the Fair, ATM will be the key solution. A large number of suppliers of ATM equipment demonstrated inter-operability via a network in the Fair area with a capacity of 155 Mbit/sec. ATM cards were available for PCs. Deutsche Bundespost Telekom demonstrated ATM videoconferencing at 1 Mbit/sec between the Fair in Hannover and Berlin.

In the communications area, there were many displays of video communications (videoconferencing) in PCs with ISDN connections over 64 Kb channels. In contrast, almost no videotelephones were exhibited. Two years ago the situation was the opposite. This shows that the personal computer is increasingly being developed as a universal machine that is being equipped with software and accessories adapted to the specific application and user.

### Strong growth in ISDN

ISDN is gaining ground rapidly in Germany. There are currently approximately 1.3 million ISDN channels and the number is expected to rise to two million in 1995, equal to nearly 7 percent of all telephone lines. Two years ago there were 230,000 channels. The increase amounts

**Broadband is the answer to the growing need for faster data communications.**

to about 100 percent a year. In France, observers expect the number of connections to increase at a rate of slightly more than 15 percent per month. It was clear, from the large number of companies that were marketing products adapted to ISDN, that this is a major communications service.

### RISC technology: a revolution

The development of personal computers is now accelerating rapidly, and encompasses ever-larger areas of application. PCs are faster, use less power and generate less heat. They are cheaper to produce, can be



**MORE TELECOMMUNICATIONS.** CeBit is a gigantic trade show focused on data communications and telecom. The telecommunications portion is growing each year.

developed more rapidly, and take up less room.

RISC technology in processor development has now recorded its first commercial breakthrough. With the launch of PowerPC in a joint venture of IBM, Apple and Motorola, the first step has been taken toward a new basic change that in the future may prove to be as significant as the introduction of the personal computer. Other suppliers, such as Digital and Sun, are also investing in RISC technology.

### 60 times faster

Much has appeared in the press about clock frequencies as a measurement of a processor's calculating capacity. This is a very crude measurement. There are so many other factors to be taken into account that practical tests offer the only realistic method of comparing different processors.

Despite this, it's interesting to consider the following: When IBM introduced its first personal computer, it contained a processor with a clock frequency of 4 MHz. The Intel Pentium processor introduced last year had a clock frequency of 60 MHz. The 90-Mhz Pentium is coming this year. A processor in the 130 to 150 MHz range is due out next year. Digital is working on a processor with 320 MHz that utilizes RISC technology. In a period of approximately ten years the number of in-

structions a processor can handle has increased from 4 to 320 MHz — a multiple of 60!

Most computers today operate with processors in the range of 20 to 33 MHz. As yet, there are few PC operating systems that can fully utilize this capacity.

Data processing has revolutionized office work with the aid of graphical user in-

**RISC processors — a technological revolution comparable to the first PC.**

terfaces, a mouse and a computer on nearly every desk. This revolution has occurred without making use of all the speed that today's processors can offer. What, then, will data processing be like ten years from now when operating systems and software can take advantage of the fast processors that will be available at that time?

### Multimedia — a megatrend

Multimedia represents another line of development and future megatrend. In this area, too, growth is rapid. High compres-

sion of data in the form of sound, images, video and faster processors is creating new possibilities to use computers more efficiently.

Company training programs, for example, can be adapted to the needs of individual trainees, taking into account the time they have available, their immediate interest, learning speed, etc.

Another area of applications involves work teams with members in remote locations. With the aid of Workgroup software, a project group can work together and take advantage of time differences throughout the world.

The group can be "united" through the use of video/sound software files and transmission of documentation via electronic mail. Because such projects span time zones, project time can theoretically be reduced by two thirds.

### Breakthrough for CD-ROMs

The Compact Disc (CD) has achieved its commercial breakthrough in the United States and Germany — and is on the verge of a breakthrough in Sweden. As the number of programs and collections being released on the new discs grows, conventional diskettes will become an increasingly clumsy alternative. A CD can commonly store approximately 650 megabytes, the equivalent of 450 information-filled conventional diskettes.

The prices of CD-ROM drives have now declined to an attractive level at which buyer resistance is decreasing rapidly.

It is highly likely that the number of CD-ROM drives sold has crossed the critical threshold for a rapid increase in sales of CDs, and that programs on CD-ROMs can be counted in the thousands.

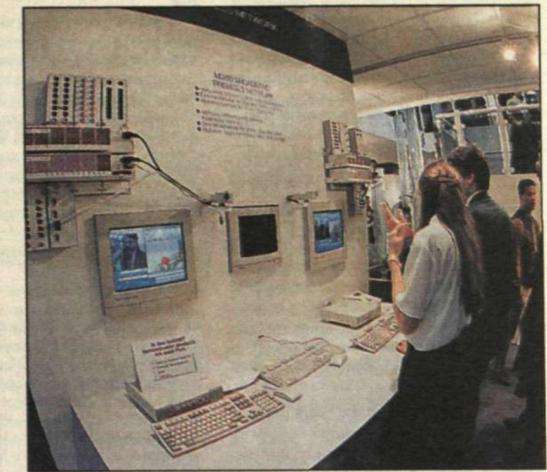
**Environmental thinking — a trend that is growing stronger in many areas.**

### Mobile data communications

Mobile data communications is another strong area of development. Deutsche Bundespost Telekom in Germany is investing heavily in a mobile X.25 network that will cover the entire country by the end of the year. The Germans will then have two simple ways of communicating via computer. They will be able to use either the X.25 network or a GSM system when operators make data communications available in GSM during 1994. A number of mobile telephone suppliers are offering sup-



**PRIZE-WINNING TELEPHONES.** Ericsson's exhibit was enlarged this year to give a proper amount of space to mobile telephones. Just in time for CeBit, two models had been awarded BT's "Caesar" prize.



**FOCUS ON MULTIMEDIA.** One of the dominant trends, reflected at CeBit, is toward multimedia applications.

plementary equipment for data communications via GSM.

Several suppliers exhibited cordless LAN (Local Area Network) systems. Two methods of data transmission were displayed: radio communications and communication using infrared light (IR). Transmission speeds in these systems, which provide access to a standard LAN, varied from one to three M/bits per second.

IR is especially interesting since it offers a great capacity and development potential. The price per manufactured unit is very low, compared with radio communication equipment, and no radio frequency permit is required. The disadvantages lie in the limited signal range and the fact that there are no standards for IR today.

A trade organization, the Infrared Data Association (IrDA), was formed last October in the United States by 75 large data communications and telecommunication companies to develop and recommend standards for IR.

### Strong environmental trend

An interesting feature of the CeBit Fair was the "environmentally friendly office" displayed by NUTEK, the Swedish development agency. Despite the somewhat remote location of the exhibit, there was a great deal of interest in NUTEK's concept.

The NUTEK project is designed to create awareness of environmental, economic and ergonomic factors in connection with the purchase of office work stations. The exhibit demonstrated that the power consumption of office machines can be reduced by half, saving money and benefiting the environment.

By addressing suppliers, buyers and users, NUTEK is creating awareness of the need for production and purchasing of environmentally compatible machines, furniture and office supplies. NUTEK will publish a purchasing guide and purchasing advisories that can be included in regular procurement procedures.

Environmental concepts and demands represent a distinct trend and will in all likelihood become an integrated part of all product development. The strict requirements for recycling in Germany are one indication of this trend.

This year German universities and colleges had their own hall at CeBit in which exhibits dealt exclusively with such environmental matters as recycling, environmental monitoring and analyses of environmental pollutants.

The management of the Fair is now discussing the possibility of increasing the amount of space devoted to the theme of the environment.

**Text: Hans Jangeby  
Photo: Thord Andersson**

# VACANCIES AT ERICSSON

This is a selection of vacancies within the Ericsson corporation. They are published in the electronic News system, which is being updated once a week. For further information about advertising here, contact Birgitta Michels at Ericsson Events, HF/LME/A. Phone +46 871924 18. The next issue will be published at the end of June.

## EDP

L M Ericsson A/S, Denmark

### SYSTEM ADMINISTRATOR

We are looking for somebody to reinforce UNIX support given to the System Design Division. We offer an exciting position and contact with many people. You will be a member of a group whose main responsibilities are the divisions UNIX-network for software development installation and maintenance of application programmes. Give technical support to the users with relation to tools, network security, introduce and inform users of new or changed tools. Be informed about new and improved methods as well as planning network development. Test, sourcing and assessing hardware and software.

We would like you to have the following qualifications: Minimum 2 years job experience with UNIX system administration and application support on a large network. Have knowledge of and experience with SYBASE database or other databases. Have a relevant education, e.g., engineer. Can speak and write Danish and English. Have a professional and quality-conscious attitude to your work.

We offer you an attractive working environment with good working conditions and the possibility for personal and occupational development. Salary will be agreed in relation to qualifications and experience. We offer flexitime, company paid insurance and company paid pension after 6 months employment.

Contact: Rune Eieroff - + 45 33 88 33 69.

## ADMINISTRATION

Telefonaktiebolaget LM Ericsson,  
Ericsson Management Institute

### ADMINISTRATIVE SUPPORT

Ericsson Management Institute (EMI) is a Support Function within LME, responsible for Management Training and Development at Corporate level. We run different Management programmes within Ericsson and coordinate internal and external management development activities.

We need a colleague who can take care of the day-to-day management of the office. You will be our support in preparing the different programmes, keeping contacts with Business Areas and Local Companies about all matters related to the conduct of programmes. As we have extensive contacts with the rest of the organisation both externally and internally, you must be confident using spoken and written English. We are a small team, very often out of office running activities. You will be one of the key players in our organisation ensuring the day-to-day operations of the institute.

Contact: Hans Löhr, 08-7199821, Memo LMELHR or Lars Hägg, personnel, 08-7191469, LMELHG.

Ericsson Telecom AB, HF

### PROJECT SECRETARY FOR THE AMPHION PROJECT

We need a Project Secretary to work on the Main Project Level. You will be the personal Project Secretary to the Main Project Manager as well as working with the Project Management Team with Project Support and Follow up. The Amphion Project is international and as such involves a number of our local companies. You will work in an international environment with English as the main language, and have access to Windows with various applications on PC.

Contact: Ingemar EV Jonsson, 08-6811106, Memo ETXJON.

## MARKET

Ericsson Communications (HONG KONG) Ltd Public  
and Cellular Systems Division

### MARKETING MANAGER

Our marketing manager is after four exciting years leaving the dynamic Hong Kong, why we need a successor. This opportunity is for an individual who would like to become a key member of the marketing team, dealing with advanced and demanding operators in Hong Kong and Macau. You will be responsible for marketing of products in the BX-portfolio, and some of the main task will be preparation of business plans and tenders, technical and commercial presentations and negotiations why you need a good knowledge of the BX products, and of course good knowledge in English, verbally as well as in writing.

Contact: Anders Moberg, +852 590 2340, Memo ECHAMG or Bertil Andersson, 08-7199183, ETXBYA.

Ericsson Mobile Communications AB, Kista

### PRODUCT MARKETING - MOBIL DATA

Mobil data is becoming a very exciting area and the growth rate is strong. We have now sold and installed Mobitex wireless packet data networks in a number of countries in the world. Mobidem is the trademark for our radio modems based on the Mobitex standard. Mobitex is today used in both vertical applications like dispatch in the transport sector and horizontal applications like E-mail and database access.

Within the unit Market Planning we are looking for a person to co-ordinate market requirements and market introductions. This means e.g. establishing and managing a product requirements database, participating in product development projects, managing the market introduction process, co-ordinating the quotation procedure for system S/W releases etc.

Applicants should have a clear market orientation and have a university degree in either business administration and/or engineering. Experience and knowledge in data communication would be a large advantage.

### BUSINESS APPLICATION MANAGER - MOBIL DATA

We are also looking for Business Application Manager to explore and create business application cases in order to promote and implement them on our markets. This means defining market drivers and needs of a selected segment, supporting providers of applications, co-ordinating availability of applications, developing sales tools, organising seminars and workshops, assisting at fairs, customer presentations etc.

Applicants should have a clear market orientation and have a university degree in either business administration and/or engineering. Experience and knowledge in a market segment like Telemetry, Point of Sales (Credit card transactions), Transport, Field Service and Sales or/and data communication would be a large advantage.

Contact: Jan Gapinski 08-7573603, Memo ERA.ECSJGA or Britt Bosrup, personnel, 08-7570109, ERA.ECSBUP.

Ericsson Radio Systems, Cellular Systems -  
AmEricsson Radio Systems, Cellular Systems -  
American Standards (RMOA), Kista

### BUSINESS INTELLIGENCE ANALYST

You will develop the RMOA Competence on our competitors, both technically and commercially. Through visits to exhibitions and via information from our markets, you will compile the data and provide analyses. You will also act as a Project Manager for specific in-depth studies of our competitors. You will have an overall responsibility to establish a competitor monitoring function according to the following:

#### General Market & Business Analyses

Monitor our competitors on the market and analyze their strategies as well as financial key ratios.

#### Technical Competitor Watch

Monitor the product offerings of our competitors and compare with our own offerings.

#### Commercial Competitive Information

Reports on actual price levels in current quotations/business.

#### Distribution of Competitor Information

As well as providing a monthly newsletter you will work actively in the sales process by providing competitor info.

We believe that you have both a good technical and commercial knowledge. You have a good drive and an ability

to handle projects. Of course you have an analytical mind. For the right person, the prospects are very bright.

Contact: Sven-Åke Damgaard, 08-7572311. Short CV to KI/ERA/A/HC Ulla-Britt Jansson, memo ERARMOAA.

## HR

INTERNATIONAL ASSIGNMENT - CHINA

### HUMAN RESOURCES/ ADMINISTRATION MANAGERS

One HR/Admin manager will support our activities in the Eastern part of China and will be based in Nanjing in the Jiangsu province and the other Manager will be based in Guangzhou and support our activities in the Guangdong province. The persons will be responsible for building up a Human Resources function and establishing administrative routines in our Joint Venture companies. The assignment will also include recruitment of local staff, support the organization in training and development of staff as well as implementing Ericsson's personnel policies and strategies for local staff as well as for expatriates. An important responsibility will be to build up and train a local HR-function capable of taking over the responsibility after a period of approx one year.

The qualified applicants shall have relevant Bachelors or Masters Degree and a few years experience from an HR Management position. Knowledge of administrative routines and systems as well as good command of the English language are other important qualifications.

Contact: Magnus Ask, 08-7197481, Memo LMEMASK.

## PRODUCT MANAGEMENT

Ericsson Radio Systems AB, Kista

### PRODUCT MANAGEMENT FOR THE GSM SWITCHING SYSTEM

GSM has grown to a worldwide system. The Ericsson GSM system the CME20 is the leader on the market. A continued lead need strengthening of the product management.

We at switching system are working with both Ericsson and sourced products. We use and will keep using the latest products available to ensure our position on the market. This will therefore also enable you to follow the development of new exciting technology to the market.

Product management for CME20 Switching System is now looking for individuals interested in working with complete complete charging and billing solutions, end-user services, operation of a network, definition of development projects or operator specific services.

The focus is on turning of the customer needs to technical requirements and working out the most profitable development objects.

You are active, open minded and have probably a M.Sc. degree or equivalent.

Contact: Arne Lindroos 08-7571907, memo, ERAAAL or Cristel Ehrenkrona, Human Resources, 08-7573236, ERA-CRI.

Ericsson Telecom AB, HF

### TELECOM NETWORK PRODUCT MANAGER

We are looking for people who are interested in working with solving our customer's network problems. You will be involved in the development of the European market and responsible for AXE technical sales support through the sales process for Market Operations Europe direct markets. That is, for markets where there is no technical office.

You will be responsible for the technical content of offers and orders, answering AXE technical questions from our customer's and marketing personnel, defining application systems for markets in accordance with the Product Line Global Application System (PL-GAS) process. You will also be required to solve our customer's network problems with Ericsson products, i.e. not only BX products but products from other Business Areas.

You need to be able to hold presentations both to Ericsson personnel and customers, take part in customer technical discussions and be able to present technical solutions to customer requirements. Broad technical knowledge is required coupled with commercial awareness. You need to have a good knowledge of the English language, both written and oral, and experience with the AXE system. Field experience with AXE can be of an advantage.

Contact: Bert Nilsson, 08-7194650, Geoffrey Hatwell, 08-7198997 or Helene Palm, personnel, 08-7197971.

Ericsson Radio Systems AB, Kista

### OPERATIONS PROJECT MANAGER JAPAN CMS 30 (PDC)

The CMS 30 system (PDC) has been successfully implemented in 3 cities in Japan (Tokyo, Osaka and Nagoya). We are now also in process of offering the CMS 30 system to additional areas in Japan and other countries in Asia. We are therefore looking for project managers with experience from operations related areas who will be able to work with marketing department in the offering phase and as project manager for customer projects. We would like you to have experience from Logistics, Installation, Testing, AS-handling and/or O & M. Your work will include travel, discussions and presentations with our local offices and customers. Therefore we expect that you are fluent in English, both oral and written.

Contact: Anders Lindström, 08-7573388, Marie Walter, or Zorica Bodiroza, personnel, 08-7570191

Ericsson Radio Systems AB, Kista  
Cellular Systems - American Standards

### CMS8800 PRODUCT MANAGER - RADIO ACCESS TECHNOLOGY

Technical Sales Support within the RMOA Sales and Marketing Department is responsible for support and product management of the CMS8800 AMPS/D-AMPS system. A system that is now on order or in operation in 23 countries and with a customer base of over 7 million subscribers.

We are looking for a product manager to increase our competence in the radio access technology area. This area is rapidly changing (TDMA, CDMA, SSMA etc) and it is important that we convey a clear and concise message to our customers, to help them choose the correct standard.

Your job will be to follow the technical development in this area, with focus on cellular applications, and to present the information to our customers and subsidiaries.

You should have a Master in EE or equivalent and several years of experience in radio access technology, especially in cellular applications. The job will involve extensive travelling and it is important that you have good written and oral communication skills. Being fluent in English is required, Spanish is a plus.

Contact: Håkan Olsson, +46 8 75 70159. Send short CV to KI/ERA/A/HC Ulla-Britt Jansson (HR), memo ERARMOAA.

## PROJEKT

Ericsson Telecom AB, Kungens Kurva

### PROJECT MANAGER, ISDN-AM, FM-P4 FEASIBILITY STUDY

The Product Provisioning Unit for ISDN-AM user services, BU-LL, is looking for a project manager to manage the feasibility study of ISDN services within the FM-P4 project (Product Line 12.4). The job is located at ETX/LL/NM, TN-Telefonplan, Stockholm. The position is challenging since the feasibility study is made in an area where new technology such as Application Modularity, High Level Plex and state of the art telephony application (ISDN), is included. The project involves people at five different locations in Europe. The feasibility study will be carried out according to PROPS2.

The position requires a person with good skills in communication, creating team spirit and high motivation, finding constructive solutions to problems and have the following background:

Well documented knowledge about the AXE-10 SW design process knowledge about PROPS. After TG2 the project manager for the feasibility study is expected to continue with the execution phase. Preferred starting date 94-06-01.

Contact: Per Lidzen, (850) 95567, memo ETXPLN.

Ericsson Ltd, Burgess Hill, England

### PROJECT MANAGER - BC-AM PH2.

The BC-AM is an advanced PBX emulation within the public network, which will allow operators to offer CENTREX and VPN services to new and existing companies. The BC-AM is a standard product ordered by Business Unit Local, BU-LL. The design is carried out in ETL (UK) and ETX Karlstad Sweden. The project will be run in close co-operation with ETX/LL/M and the FOA (First Office Application) market.

We are looking for an experienced project manager to run the BC-AM ph2 project from feasibility study to release. The project manager will be employed by ETL with geographic location in Burgess Hill (Brighton), UK.

**Contact:** ETL/XD/MC Ivor Szkolar ETL/BC-AM line manager, ETL.ETLJSKR X4875 ETL/XD/JC Fred Skogli BC-AM Product Provisioning Manager ETL.ETLFXD X4839

**ENGINEERING**

**Ericsson AS, Billingstad, Norway**

**DATA COMMUNICATION**

**EQUIPMENT SYSTEM & SOFTWARE DESIGN ENGINEERS**

**SENIOR AND JUNIOR LEVEL POSITIONS OPEN**

The Datacom section ETO/X/D/F at ERICSSON AS, OSLO Norway, are designing subsystems for data communication in the fixed and mobile public networks ISDN, GSM and ADC.(CME20,CMS40,CMS88 and APT 210 12)

Experience from telecommunications, system design, SDL, 'C' and 'C++' and general ERICSSON training and practice is a plus.

**Contact:** Espen Skare, +47 66 84 13 70, Memo ETOES. Application to E. Skare, Postbox 34, N-1361 Billingstad.

**Ericsson Telecom AB, BU Gateway, TN**

**TECHNICAL CO-ORDINATOR (PROJECT SYST. MGR) BM ph3**

As technical co-ordinator (Project system manager) at Business Unit Gateway you will have an important role in the BM ph3 project, which will provide our product portfolio with a "state-of-the-art" International/National Switch. You will have an excellent opportunity to gain competence and extend your contact network, and you will work in a dynamic and stimulating environment. You will be responsible for the system analysis up to TG-2 and the technical co-ordination and system issues during the development phase of the project. The BM ph3 project will as well as ISDN functional additions include the new Groupswitch, major capacity improvements (APT and APZ), AM adaptations and major charging-off-line/IO improvements.

**SOURCE SYSTEM AND PRODUCT LINE DESIGN APT 210 11, BM-3**

The SYSTEMS unit of Gateway Switching Systems has two positions open in the field of "Source System(SS) design" and "Product Line(PL) design" for the BM-3 project. You will have an excellent opportunity to gain competence and extend your contact network. You will be working in a dynamic and stimulating project team. The positions involve responsibility for the source system issue and the PL design, and to co-ordinate the activities within SS and PL design. BM-3 will be AM based, meaning that introduction of modified methods will also be included.

Your background for these positions are in the first place experience in the field of SS and PL design/handling. But having worked with application systems(AS), AXE-10 design or test could also be a good starting point.

**SYSTEM DESIGNERS, TRANSIT APPLICATIONS**

As a system designer at Business Unit Gateway you will have an important role in the "system management" of APT210 11, both in projects and in non-project related investigations. You will have an excellent opportunity to gain competence and extend your contact network and you will work in a dynamic and stimulating environment. At the moment much will be focused on the BM ph3 system study and system analysis, which will for example include tasks regarding new ISDN functional additions, the new Groupswitch, major capacity improvements (APT and APZ) and AM adaptations. Upcoming tasks will be SDH termination in AXE, and strategies for ATM/STM integration. Also MLC support will be a part of the positions. You will perform and monitor complex system study/system analysis tasks in the fields mentioned above.

You are a systems engineer, interested to work with total system solutions. Knowledge in the specific areas mentioned above is considered as a merit.

**IN TECHNICAL PLANNING/ STRATEGIC STUDIES**

The system unit, ETX/TN/LG/TU, at Business Unit Gateway have two positions open in the area of IN(Intelligent Networks) technical planning/strategic studies. Both roles will mean working with Network and System issues regarding IN functionality and products, and doing this in close co-operation with the IN product management and IN system/design units at several locations. The positions will give an excellent opportunity to gain competence and extend your contact network. One position is primarily focusing on IN technical planning, general IN/Mobility system and network issues, in many cases as being a "link" for technical issues between product management and the IN system/design units at several locations. The other posi-

tion is primarily focusing on performing and co-ordinating strategic technical studies regarding the future development of the Intelligent Network products, involving issues regarding new system platforms etc.

Your background is in IN, Mobile telephony or familiar with network distributed functionality. For the position focusing on strategic studies broad generic system knowledge, and specific knowledge in the new AXE system platform and open computer platforms are considered as a merit.

**Contact:** Anders Blomgren, 08-7190473, Memo ETXASB, Per Öberg, 08-7195412 or Magnus Karlsson, personnel, 08-7199404, ETXMAKN.

**Ericsson Telecom AB, BU Network Engineering, Saudi Arabia**

**DESIGNERS - ZNEP**

**- International Assignment -**

Business Unit Network Engineering is seeking to recruit personnel to our Design Office in Riyadh, Saudi Arabia. Ericsson is working as main consultant for Telecommunication and Security Systems covering: Wide Area Network, Radio Link Transmission, PABX, Net-work Management, CATV, Mobile Telephone, Mobile Radio, Data Transmission, Transmission, Operational Security, Physical Security, Central Security Control, Intrusion Alarm, Access Control, CCTV and ID Card Production Systems. Our mission is within Detailed Design/Installation. We are looking for three categories of designers: Team Leaders (Section Managers), Senior Specialist Engineers (Group Supervisory level) and Design Engineers. Tasks: Produce Documents and Drawings for Installation including: Lay-outs, Block Schematics, Wiring Diagrams, Cable & Equipment Lists, Building Lay-outs, Climate Requirements, EMP/EMC Requirements, Surveys for Radio & Security Systems and External Duct Layouts.

Qualifications: Engineering degree, minimum 2-3 years experience within one or more areas and good command of the English language.

**Contact:** Mats Karemyr, 08-7640773, Memo EBCMAKA or Conny Thörnqvist, 08-7640770, EBCCOTH.

**KI/ERA/LN/P - Ericsson Radio Systems AB TKV/Ho Chi Minh City, S.R.Vietnam**

**PROJECT MANAGER FOR VIETNAM**

The first phase of the GSM system in Ho Chi Minh City was successfully launched April 6 with presence of H.E Carl Bildt. This was the first step for RMOG in Vietnam. Soon we are expecting expansions and therefore we need a Local Project Manager to be stationed in HCMC for at least one year.

We are looking for a well experienced person able to work under pressure on a tough market. The person will coordinate most of the work together with Marketing and Project Management in Kista, and be a good "listener" for the customers need and wishes. Contract start, asap.

**Contact:** LN/P Erik Janze Ph:+46-8-757 0775 ERA.ERA-EKJA or LN/PC Mats Alendal Ph:+46-8-757 2690 ERA.ERA-MATS

**Ericsson Radio Systems AB - Kista**

**CMS 88 SYSTEM CHARACTERISTICS**

The RMOA system unit in Kista is responsible for CMS 88 (AMPS, TACS & D-AMPS) system characteristics. Examples of system characteristics are capacity, processor load, delay time and link throughput. The work comprises investigations, simulations and calculations as well as collecting feedback from test systems and commercial operation.

You are interested in system analysis and/or performing measurements in commercial systems. You hold a Master's degree and have at least five years of relevant experience from at least one of the areas telecommunication, AXE, radio or OSS.

**Contact:** Osborn Hogevik, 08-7573379, Send short CV to KI/ERA/A/HC Ulla-Britt Jansson, Memo, ERARMOAA

**Ericsson Radar Electronics AB, Mölndal**

**ASIC DESIGN ENGINEER**

Within the department for Advanced Digital Design we are an ASIC design team who need to expand with two more experienced designers. We are currently working with three major projects, i. e. JAS.PS890 and BAMSE.

Most of our customers are located within the Ericsson Corporation, but there are also potential external customers within the military and commercial area. We are mainly focused on Gate Array designs but we intend to expand our full custom capability.

We assume that you have a M.Sc. degree in Electro/Computer science engineering, have completed a couple of ASIC designs and are familiar with VHDL language and synthesis. You must be open minded, prepared to give your customers full service in terms of design support and also be an adviser.

**Contact:** Erik Dagemark, 031-671718, MEMO EREEDK or Claes Warholm, 031-671700, ERECUM. Apply to: Maria Ottosson Ljungberg, 031-671532, memo EREMOG.

**Ericsson Mobile Communications AB, Kista**

**TECHNICAL SALES SUPPORT LAND MOBIL RADIO, RUSSIA**

Responsibilities: to be local customer contact in Moscow for our Land mobile radio division, support sale out of Sweden of EDACS in former Soviet Union, mainly Russia, as a technical specialist, be a point of contact for existing and future customers concerning technical and system related issues and be responsible for installation, commissioning and operation of EDACS demo system.

You have a MSc in engineering or eqv. with special knowledge in radio, tele- and/or datacommunications. It is essential that you have experiences in system analysis of telecommunication systems. You also need experience in customer relations and you should be fluent in both Russian and English.

**Contact:** Bo Stenqvist, 08-7570135, Memo ECSBOSQ or Eva Jansson, 08-7571459, ECSEVAJ.

**Ericsson Telecom AB, Systems Management & Design, BU-Local, TN**

The mission of Systems Management & Design at BU Local is to secure periodic system releases of our active Product Lines (PL's) and Source Systems (SS's). We have the following positions open:

**CHAIRMAN OF PC-APT**

You will be chairman and responsible for this review body, which is vital to all our development projects and activities. PC-APT has authority to take decisions in matters such as: System Structure, allocation of functionality, subsystem interfaces, influence on system characteristics and coordination of source system development

PC-APT contains representatives (technical experts) from all product areas. As chairman of PC-APT, you will also be our representative in STEG (System Technical Expert Group), which is the BX forum for certain technical decisions. Excellent opportunities to gain competence and extend your contact network, and you will work in a dynamic and stimulating environment.

You are a qualified System Engineer.

**Contact:** Krister Skålberg, ETX.ETXKRIS, +46 8 7197765, Contact person at the personnel department is: Pia Bermark, ETX.ETXPJA, +46 8 719 9141

**CONFIGURATION MANAGER FOR PRODUCT LINE 12.4**

We are looking for a qualified System Engineer prepared to take the responsibility for Configuration Management activities during the development phases of product line (PL) 12.4. Configuration management (CM), quite simply, enables us to keep our products and documents in good order and help us to deliver to our customers what they are expecting and what we once have promised them.

As a Configuration Manager you will have a very important role in the project since you will be working with many different questions regarding the contents of the project. You will be a member of the project management team for the project and have the responsibility to secure that all changes within the project are handled in a correct way.

The configuration manager works together with marketing peoples, product managers, project managers, designers, testers ect. You will have excellent opportunities to gain competence and extend your contact network. You will work in a dynamic and stimulating environment together with persons with high AXE competence.

**Contact:** Per-Erik Eriksson, ETX.ETXPPE, +46 8 7195118 Krister Skålberg, ETX.ETXKRIS, +46 8 7197765, Contact person at the personnel department is: Pia Bermark, ETX.ETXPJA, +46 8 719 9141

**TWO SYSTEM ENGINEERS**

To be able to secure periodic system releases, the development organisation need to know, well in advance, what new customer requirements will demand from the development organisation in terms of not only new technique, but also projects, competence and resources. Our job is to analyse proposals for product roll-outs and translate these into re-

quirements on new development projects with tentative time-plans, contents and rough estimates of resource needs.

We investigate alternative scenarios for system releases and do 'prepre'-studies of new system issues. The work is done in close cooperation with systems management and product management at the product groups at BU Local. The results are documented in the BU Local development plan, which the unit is responsible for.

Since we work with the system as a whole (AXE 10, but mainly APT and AMs) you will have excellent opportunities to gain competence and extend your contact network.

**Contact:** Monika Swensson, ETX.ETXSWE, +46 8 7194721 Krister Skålberg, ETX.ETXKRIS, +46 8 7197765, Contact person at the personnel department is: Pia Bermark, ETX.ETXPJA, +46 8 719 9141

**Ericsson Mobile Communications AB, Kista**

**INTERNATIONAL ASSIGNMENT CHILE**

ECS is opening market operations in Chile for its wireless mobile data system MOBITECH.

**TECHNICAL SALES SUPPORT**

Main tasks: Local customer contact in Chile, sales support as a technical expert, customer contact in Latin America regarding technical issues.

You have good knowledge of the Mobitex system and general experiences of data communication. Preferably you know Spanish. The successful candidate will be offered minimum one year of assignment in Chile.

**Contact:** Jonathan Mytnik, +46 8 757 1721, memo ECSJMY or Eva Jansson, +46 8 757 1459, ECSEVAJ.

**Ericsson Radio Systems AB - Kista**

**FIELD SUPPORT MANAGER IN MOSCOW**

Due to the continuing successful sales of Ericsson cellular systems in the Russian republics, it has been decided to open a field support centre (FSC) in Moscow. This FSC will support systems in all of these markets, and will be an integrated part of the Ericsson Global Support Organisations.

The FSC will initially support markets using AMPS/D-AMPS system but will later also support system based on GSM and NMT standards. To this FSC we wish to recruit one FSC manager with the following profile. AXE Knowledge- minimum 5 years (from installation test) Field support experience, process oriented/structured (trouble report handling, modification handling). Good communicator, customer oriented. Able to run an office by himself. Management experience (project- or line organization). The position is to be filled as soon as possible. Duration of the assignment is at least 9 months.

**Contact:** Ulf Westin or Larry Lumsden, 08-7570475, memo ERA LAUR.

**Ericsson Mobile Communications AB, Kista**

**MANAGER LAND MOBILE RADIO MARKET OPERATIONS IN PEOPLES REPUBLIC OF CHINA**

The position is based in China. The unit will be responsible for orders, sales contract execution, after sales support and repair of Land Mobile Radioproducts in China. The customers are private/public enterprises and organisations mainly within the following market segments: Emergency services, police, utilities, large industries, airposts. The products we offer are highly competitive and are market leaders when it comes to functionality and capacity. Sales is done both via direct sales and independent distributors.

You need experience from marketing and sales in Far East, preferably from operations in China.

**Contact:** Staffan Svensson, 08-7570761, Memo ECSSNS or Craig Szczutkowski, EGE, Lynchburg, +1 804 5287382, EGECFS.

# CONTACT

Ericsson, HF/LME/A, Room 811051, S-126 25 Stockholm

## An Ericsson veteran recalls years abroad



Foto: KARL-EVERT EKLUND

Adde Bergman worked abroad for Ericsson for more than 30 years.

*The names of exotic destinations on LM Ericsson's packing cases were really what determined the course of J.A. "Adde" Bergman's life. When he retired in 1975 he had been with Ericsson nearly all of his working life and had spent more than 30 years in such countries as Iran, Afghanistan, Lebanon and Tunisia.*

In 1922 the head office of Allmänna Telefonaktiebolaget LM Ericsson and parts of its factory were located at Döbelngatan 5 in Stockholm. It was there that Adde Bergman began his career at the age of 14. He started as an errand boy and general "factotum" but soon became an apprentice in various departments. He supplemented his theoretical knowledge with evening courses and a four-year program at Stockholm Technical Institute.

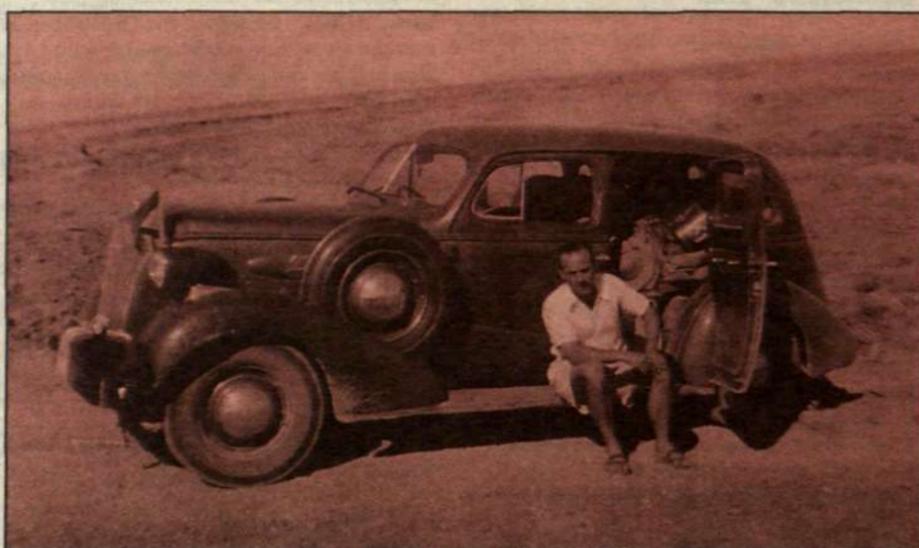
"When I was testing exchange panels I used to glance longingly at all the exotic names on the packing cases," Adde recalls. "That was how my yearning for travel developed."

The first posting abroad came in January 1936 – two years in Iran. Adde, who had earlier traveled throughout Sweden testing small automatic exchanges, worked in the private market. After a few months he was joined in Teheran by his fiancée, Astrid Lindblad, and the two were married in the Swedish legation.

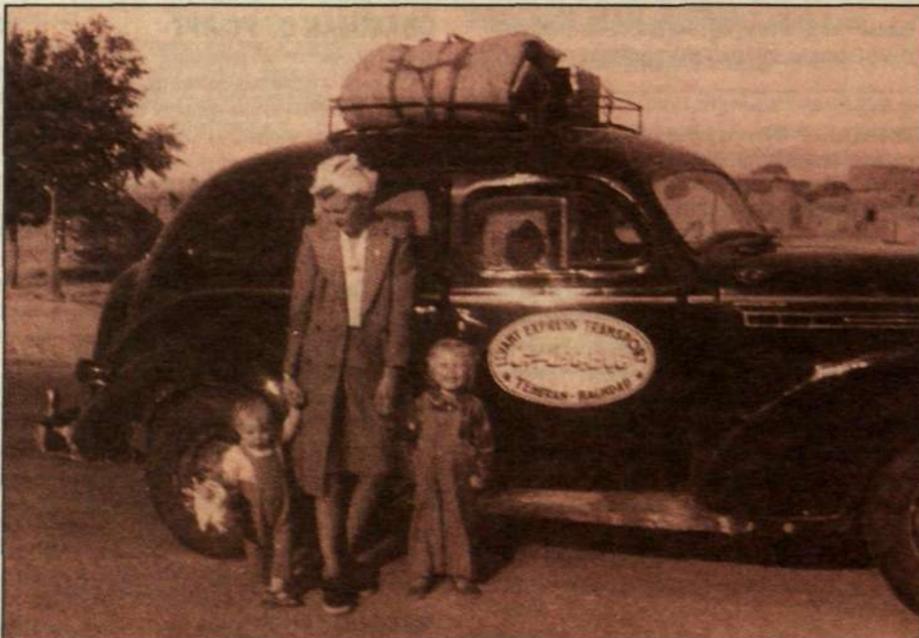
### 'Lutfisk' in Kabul

The two years in Persia whetted Adde's appetite and in 1939, when he was asked to consider an assignment in Afghanistan, it didn't take long for him to accept. The trip from Sweden took two weeks – by train, gondola (in Venice) and steamer, in luxury-class accommodations.

In his bags, Adde had two large slabs of dried "lutfisk," the stockfish traditionally associated with Swedish Christmases. Adde simply couldn't bear the thought of two Christmases without this delicacy. On arrival in Kabul, he nailed the fish on his kitchen wall until it was time for the Christ-



Adde Bergman drove from Persia to Sweden a number of times. Here, the family is taking a break in the desert in 1938.



Astrid Bergman and daughters Evelyn and Anne-Catherine en route from Teheran to Baghdad by taxi in 1945.

mas meal. The family cook thought that this was a very strange food tradition.

It was a long time before Adde replenished his supply of lutfisk. At the end of the contract period in Kabul the family was scheduled to return to Sweden. The first leg of the journey was by car from Kabul to Teheran. There it ended, interrupted by the war. It was not until 1946, after seven years away from home, that the family, which now included two daughters, was able to return to Sweden.

### Packing case furniture

During the 1930s and 1940s Ericsson did not have as many companies and technical offices outside Sweden as it now has. The company was represented by agents, and they were the ones who employed Adde.

In those days it was common for Ericsson people to be sent to foreign locations without their household goods. When a promised "furnished home" turned out to be completely unfurnished, a local carpenter was called in. Not infrequently old LM packing cases were used to make shelves and other small articles of furniture.

It took weeks or months for items sent from Sweden to reach their destination,

and there was no courier service to handle emergency shipments of spare parts.

"But with a little improvisation and imagination, it was possible to take care of most things one way or another," Adde says. "You had to be prepared to tackle anything. But things were never as stressful as they seem to be today."

### Inheriting the job

When Adde and his daughter Anne-Catherine Glimtoft go through old photograph albums, they share many happy memories. The family's interest in working for Ericsson abroad has actually been "inherited" not only by Anne-Catherine but by Adde's nephews as well. Anne-Catherine, who speaks many languages, is now employed in Ericsson's Guest Service Center but earlier lived with her husband, also an Ericsson employee, in Latin America and Saudi Arabia, among other locations.

Adde's nephews, Erik and John Glimtoft, both work for Radio Communications, in Switzerland and Canada, respectively. It can certainly be said that Adde Bergman has been a good representative for Ericsson's "foreign service."

Gunilla Tamm

## END LINE

LARS-GÖRAN HEDIN



### A political lightweight

There was great disappointment among many Ericsson employees a few days ago. For most, the loss of the prestigious Saudi Arabian order to AT&T was unexpected. There were so many signs favoring Ericsson. Especially when it became known that our bid was the most competitive, many believed that this race had been won. But in the final spurt Ericsson was passed by one of its fiercest competitors in the international arena.

In reality, it was not so much a case of AT&T winning over Ericsson. It was, rather, the United States winning over Sweden. And the outcome of such a match-up can be taken for granted. We may be as proud as can be of our fine country up here in the north, but we don't have much with which to oppose the heavyweights – as a nation, that is.

Our Company, in contrast, is holding its own well. When we can fight a battle without political overtones, we can beat anyone. We have beaten AT&T many times in other markets.

How well established Ericsson is in the international arena was made clear in the Chief Executive Officer's address at the Annual General Meeting. (See page 3.) While the Saudi order was one of the largest in history, it did not represent more than a few percent of Ericsson's annual AXE deliveries. With more than 10 million lines being delivered annually to scores of different markets, 200,000 lines for Saudi Arabia are only a grain of desert sand – albeit a prestigious grain of sand, unfortunately...

Swedish political leaders support Ericsson wholeheartedly, but their influence does not compare with that of such gentlemen as Clinton, Kohl and Mitterand.

The Saudi mishap is probably one more illustration of how much easier it would be for Ericsson to compete if Sweden was a member of the EU. It is a strong argument for a unified Europe – to give the economic heavyweights, the U.S. and Japan, a real match!

With the total political and economic strength of the E.U. behind it, Ericsson could probably have been able to compete on fairer terms against AT&T in Saudi Arabia!