

# Contact

ERICSSON 

PUBLICATIONS FOR ERICSSON EMPLOYEES WORLDWIDE

No. 3 • 1991

## Lars Berg on one-day course

Pages 4-5



### 45,000 visit Ericsson stand

This year's CeBIT fair drew some 550,000 visitors from all over the world. Ericsson participated on a broad front. We reckon about 45,000 people visited our stand this year.

Page 17

### We invest in transmission

Ericsson Telecom now has a third leg to stand on alongside AXE and TMOS. It's ETNA, a range of products from which to build the transmission network of the future.

Page 8

### Images from another time

Deep down in Ericsson's photo archives we dug up some pictures from the turn of the century. Look and ponder. This is the way it was in Poland, Mexico and Russia.

Page 6



### A sky-high publication

Ericsson's annual report for 1990 is now being distributed. This year's issue has a new design and a new format. If you stack all the annual reports in a single pile it would be a couple hundred meters higher than the world's tallest building.

Page 18

PHOTO: THORD ANDERSSON

**Personnel and recruitment – Pages 9-16**



Ericsson's mobile telephone network in the U.S. is now hooked up. The colored areas denote Ericsson regions; on the West Coast, around the Great Lakes, in Florida, around Houston in Texas and New York. The red lines show the links. Some "corridors" proper are not shown. Not that one can cross the entire continent with full coverage. Rather, the links (regional and between regions) allow subscribers to reach into whichever region on the same number. (Illustration: Gunnar Englund).

## Mobile network hooked up in U.S.

Ericsson has succeeded in building up a mobile telephone network in the States over a period of almost seven years, stretching over the entire continent. From New York in the east to Los Angeles in the west. From Chicago in the north to Florida and Texas in the south. And along southern Canada as well.

Of course, Ericsson does not literally have one connecting network over the entire U.S.A. But what began as small strategic islands around Los Angeles in California and Chicago up to the Great Lakes have grown and have lately become one huge network. For example, from Seattle in the north to California in the south.

Ericsson's system now is also on the way to being connected with link-ups. But there is still something left. For example, Seattle is not yet linked up with Sacramento, and Houston will not be connected until late in 1991.

### Early phase

Ericsson's mobile telephone system is now found in five large areas. California and the state of

### *With Ericsson from coast to coast through 19 states*

Washington on the West Coast, Florida in the south, the city of New York and the area around the Great Lakes.

Ericsson was there back in 1982 when the FCC (the Federal Communications Commission) which approves telecommunications licenses, opened the way for applications for the big cities in the U.S.

The earlier phase covered 1983-1985. The first contract was signed in 1983 and applied to the area around the Great Lakes.

Later Ericsson did a major job in Pittsburgh and Los Angeles (1986) and established contact at the time with the operator McCaw, the largest in the U.S. when it comes to mobile telephony. It was a contact that brought a new market in California: Sacramento and Fresno, as well as some smaller markets. And Las Vegas.

Ericsson decided now to concentrate on the two profitable regions, the West Coast and the Great Lakes. There were relatively few competitors there and during the fall of 1987 Ericsson started to fill the gaps.

While the completion work was in progress, Ericsson got an offer from McCaw to expand into Florida (replacing several smaller competitor systems). Switches were placed in Tampa and Miami, which brought about a number of markets. During 1988, a network was built for some 10 markets in Florida and during the fall the system was put into operation.

### New York

Late in the fall of 1989, Ericsson and McCaw began to discuss the American West Coast. Seattle, Portland, Spokane and other small markets was the result during 1990. Added to that was the city of New York. The news was made public on October 3, 1990. In recent months Ericsson also acquired St. Louis and has rounded this out with several rural markets within the previous core areas. Ericsson's mobile telephone network is now to be found in 19 American states.

Ericsson now has 25 percent of the American market, which actually implies 50 percent of the

possible shares since the entire American market is divided up so that every city has two competing operators, of which one belongs to the local telephone company.

Parallel with the expansion in the U.S. Ericsson has extended its mobile telephone network in Canada (at the beginning of 1985) in collaboration with Canada's Cantel.

### Linked together

What is going on now is the first phase in which all of Ericsson's McCaw markets are being linked together. (The second phase will involve all other Ericsson systems that are applicable to this hook-up).

Seattle-Spokane-Portland-Sacramento-San Francisco, for example, will be linked together. The hook-up already exists in Florida.

Markets in the Great Lakes are hooked up with other islands. In like manner, Seattle with Canada. And from Sacramento in the west to the Great Lakes.

### SS7 network

"Ericsson and McCaw are planning an SS7 network that will link all McCaw switches with each other," says Kent Sander at ERU, Ericsson's company in Richardson, Texas. The SS7 network that

McCaw is building falls into two categories. The first is a regional network linking up a region (Seattle, Portland and Spokane); the other is a national network that connects regions (Pacific Northwest and New York).

One result of the link-up is that a subscriber in one of McCaw's switches can have his calls transferred from his local switch to the switch where he presently is. The caller then does not have to know where to locate the subscriber's regular number and the switch would transfer the call. All information about the subscriber is sent from the local switch to the new switch.

This is a huge advantage for the subscriber. He or she does not have to think about anything other than picking up the phone. The call is relayed automatically. And it all functions as if the subscriber was in his "home area" since all the switches "talk" to each other.

### 6 out of 11

Ericsson currently has more than half of the 11 largest markets in the U.S. New York, Chicago, Detroit, San Francisco, Houston and St. Louis. Still lacking are Washington-Baltimore, Boston, Philadelphia and Dallas.

Lars Cederquist

## EDITORIAL

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# Cable and caviar on the Caspian Sea



In the Iranian city Rasht on the Caspian Sea about 250 km northwest of Teheran is located one of Ericsson's most exotic units, the SIMCO Ericsson (SET) cable factory, which produces mainly power cable.

The world's best caviar also comes from this area from the famous sturgeons in the Caspian's salt water.

- The company SIMCO has been manufacturing cable since 1968, says Parvis Hourfar, head of the company, on one of his rare visits to Sweden recently. In 1975 he entered into a joint venture agreement with Ericsson, which resulted in Ericsson being 40 percent part owner and in the company acquiring its present name SIMCO Ericsson. Here you get a picture of the factory in Rasht.

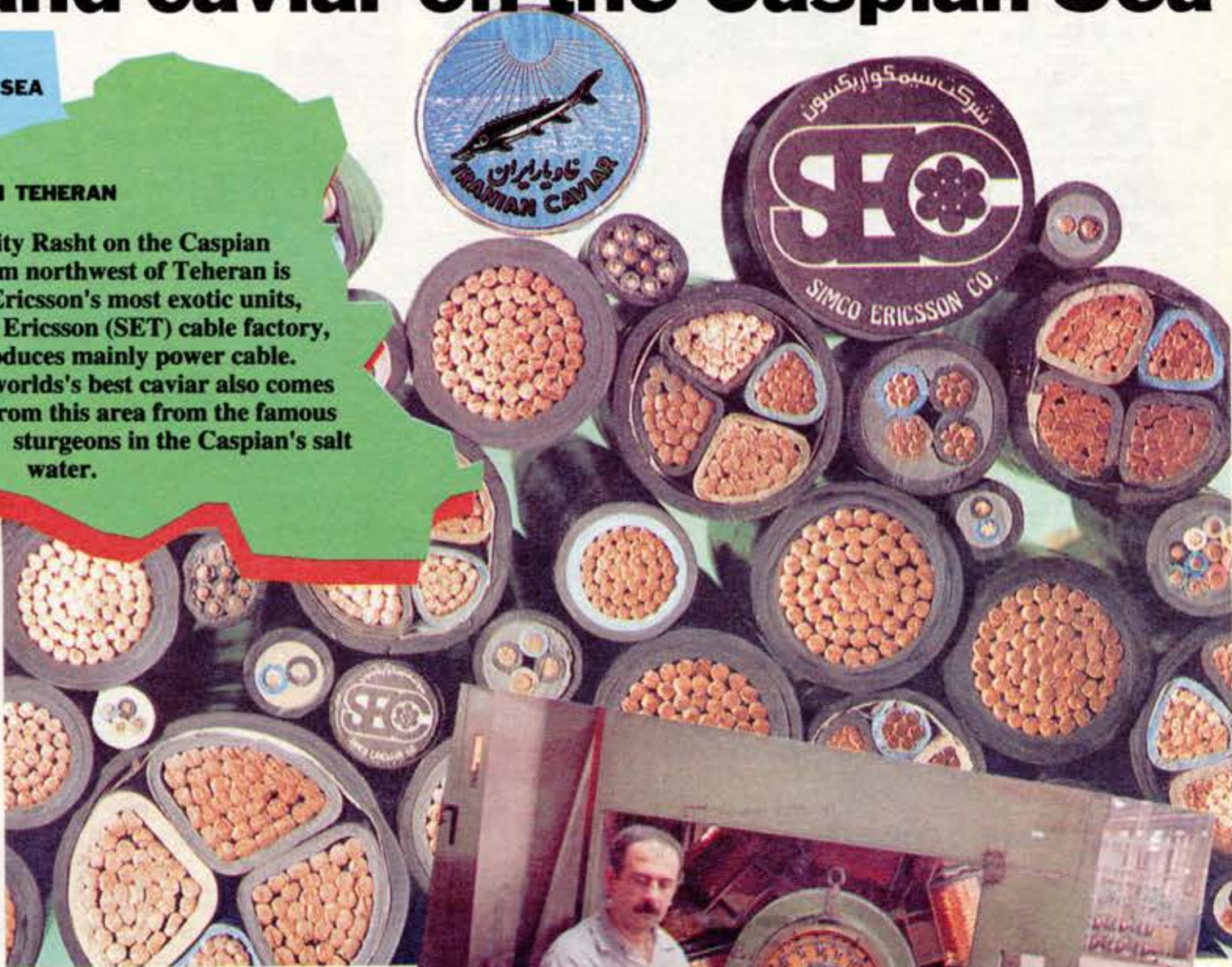
- We built a new factory with two individual ships. By buying and installing new machines we increased our production capacity from 150 to more than 10,000 tons per year," says Parvis Hourfar.

Last year we produced about 5,000 tons of cable. This makes us one of Iran's five largest cable producers. Turnover in 1990 reached 120, million kronor. At the start of the year we had 200 employees of whom not a single one was Swedish.

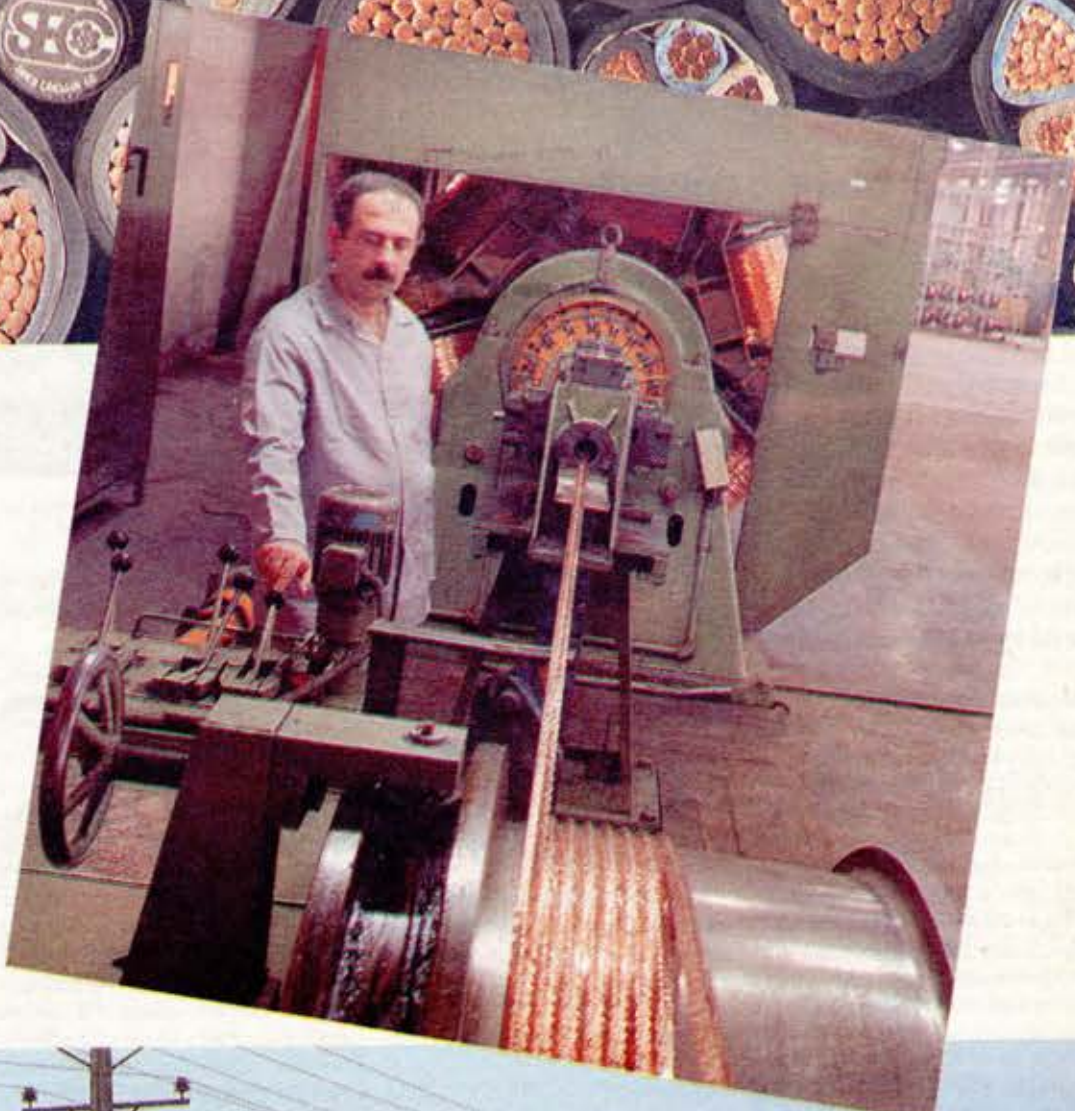
Currently, we produce almost all types of power cable. In the production program is included PVC isolated cable, both according to Iranian and German standards. We sell to both private and government customers.

- This year we will also be entering the telecable market. A machine for that is already in place and will become operational by midyear. The business outlook for the rest of the year is good and we hope to be able to increase both production and sales.

Thord Andersson



Parvis Hourfar, head of SIMCO Ericsson in Iran.



The 150,000 square meter large factory grounds is like a miniature city, with both production units, homes, a football field and shops.

# WHILE KJELL TEACHES LARS TO DIG LEIF MANAGES



Not much more difficult than handling a motor boat, says Lars Berg.

Text: THORD ANDERSSON

There was an uneasy feeling of a crash as the pneumatic shovel took a real plunge into the earth of the roadbed at the little railroad station in Halland. We are in Slöinge, outside Halmstad. Lars Berg, president of Business Area Cable and Network, sits at the control, with Kjell Olsson teaching him to excavate.

It was in the middle of March and it was the big day for switching jobs. Lars Berg left his office in Sundbyberg and his role as business area president to learn how to handle an excavating machine and also to take a look at ongoing work. At the same time Leif Erlund, buyer with the power cable division in Falun, flew to Stockholm to take over Lars Berg's chair in Sundbyberg as president for a day.



Kjell Olsson thanks his pupil Lars Berg for a fine excavating job.

It all began with a contest BN Runt (Around BN) in the summer. All employees in Cable and Network could participate. It called for them to show how much they knew about the business area. The answers to the questions were to be found in the publication BN Annual Report, which everyone had received. The deciding question was: What would you do if you had the chance to switch jobs with Lars Berg for a day? Leif Erlund was the winner with this verse:

"If I were head Of Cable and Network contact would be closer with the manager and would be wider as is desired today in our OPUS survey."

Leif got the opportunity to make a study tour of Siete in Rome and moreover could test his mettle as president for a day.

Kjell Olsson, a 22-year-old machinist with Philipsson's Gräv



& Schakt AB, excavators, got an honorary mention for his answer:

"I would spend the entire day in teaching him how to handle an excavating machine."

On precisely that day in March, Kjell had the pleasure of teaching Lars this down-to-earth job.

### Dense mist

At exactly half past eight in the morning Halland emerged from the dense mist at the entrance to the Hotel Halland in Kungsbacka. Lars Philipsson was waiting to take him out into the field. Lars is production manager with Philipsson's Gräv och Schakt AB, which over a year ago became a wholly owned subsidiary of Ericsson Network Engineering AB (ENS). ENS is the country's leading installation company for cable systems after the railroads. Right now it is working with Banverket's (the Railroad Company's) huge project Opto 90.

### On the way south

During the ride out, Lars Philipsson recounted how he and his brothers Rolf, Rune and Kaj together with their father Bertil began the company in 1967. At the time they had a turnover of 350,000 kronor. Last year it was up to more than 40 million.

The trip coursed through gently rolling landscape where blue gleaming bushes gave a hint that spring was at hand. The dense mist lifted a bit and we came to the first job site somewhere along the main rail route between Gothenburg and Malmö. A specially built tractor is just getting ready to lay

down some cable on the other side of the rails.

### 3,500 km project

The Banverket's new fiber optic network is immense and covers a total length of more than 3,500 kilometers. Right now they are concentrating on the Stockholm-Gothenburg-Malmö-Stockholm triangle, a 1,500 km stretch, which will be ready at the end of October this year after only 18 months'

construction time. Philipsson is laying more than 70 percent of this stretch.

The specially manufactured twelve fiber optic cable comes from Ericsson Cable's Telecab division in Hudiksvall. The projection work was done by Sune Edman from Ericsson Network Engineering, who, for this purpose, was "leased" out to Banverket. In other words, this is an excellent example of smooth-



Lars Berg, together with Banverket (Railworks) and Philipsson workers somewhere on a stretch of road in Halland. From left: Berndt Ekström, Sune Nilsson, Peter Lindeberg and



functioning Ericsson collaboration.

Behind a few green glimmering hillocks Slöinge came into sight. Here, Philipsson's people are excavating for a splicing well. Kjell Olsson greets Lars warmly and offers him a seat in the specially designed Japanese excavator shovel that makes extra small ditches.

As an habitual motorboat driver, Lars quickly got the hang of it

and after half an hour's training he won Kjell's approval. The Banverket's representative stood there all the time with mixed fear and admiration, worried that Lars might plow into an already laid cable. All went well and the meeting with the earthy reality only encouraged Lars Berg.

Kjell Olsson, who wandered around the world some years ago learnt from Lars about the opportunities for working overseas.

—It is precisely men like you we are looking for, Lars said. We have several pending projects in the Middle East and Africa that can come off.

### World trip in an hour

The trip went further quickly. The Halmstad airport greeted us with fog, which accounted for a number of delays. What to do? We could not even leave our luggage at the airport because of security reasons. OK, we take a walk in the nearby residential villa area. I took the occasion to interview Lars Berg on how the year has begun for Business Area BN.

Lars took me for a lightning trip around the globe and offered glimpses into the most important of the business area's 40 companies or so. All in all it was a remarkably positive picture.

The year began well. A billion order from Turkey. Continued good development for both cable and network operations in Sweden. New and exciting projects in the offing in the Middle East, North Africa and Southeast Asia. In Spain, a new cable factory was inaugurated just before summer. It was off to a flying start, with full capacity. Developments in Italy continue to be very positive. There is a threat, though, in Latin America, above all in Brazil where the cable factory's ongoing results must be improved. Developments in Mexico are also uncertain, especially as a result of the privatization of the tele administration Telmex. The situation in Colombia is OK. The business area as a whole will be good or even better, Lars Berg indicated.



Leif and Lars sum up and compare the day's experiences.

## The Meeting

Shortly after four in the afternoon, Lars Berg stepped into his office in Sundbyberg and met face to face with Leif Erlund from Falun who was filling in for him for the day. Leif made himself comfortable in Lars Berg's chair and recounted for us all the exciting events of his day. Solveig Pilestad, the secretary, had booked up almost the entire day.

On Leif's agenda were discussions about financing methods for a network construction contract in the Far East, with Mats Olsson, controller. How to improve computer security when more and more of our knowledge and information is being stored and transmitted by data networks was the theme of discussions with Tommy Hall, responsible for computerization. Processing of a complicated offer to a country in the Middle East was a tough one for Leif and Jan Eckerud, responsible for marketing. Strategic issues was at the center of discussions when Leif met with business strategist Jan Wennerholm.

In his inspiring way of presenting his views, he was able to inform managers at factories in Sweden. They would do well to hear a bit about thoughts on the future in their day-to-day reality, says Leif Erlund.

Communication, information, feedback, that is being critical, recognition for what one does. That is very important, says Lars Berg.

People want more competency development. One part of this is increased economic comprehension. When we give economic information, we must see to it that the recipients really understand what we are talking about. There is a lot to be done here, Lars Berg confirms.

### Ask for information

Issues on the theme of "Human Resources" was top priority for Leif. As a former chairman of

SIF, the Swedish Federation of Industries, he has many ideas and views on personnel issues. He discussed them with both Roland Sjöb, responsible for administration, and Lars Berg.

Some matters lay particularly close to Leif's heart, for example, how to get middle managers more interested in being leaders and not merely specialists and how one could employ themselves to seek more information. There is so much information around, but it is still not being shared. How can one make the economic reports more readily understandable and more concrete was another of Leif's concerns.

### More responsibility

"There is a lot in a manager's conduct that is not satisfying", says Lars Berg. Several important questions came up at breakfast meetings with employees around the country, all of whom had taken part in the contest and who had put forward their views and ideas.

Communication, information, feedback, that is being critical, recognition for what one does. That is very important, says Lars Berg.



Max Sievert appears pleased with Leif Erlund's position as president. Originally, Leif began as a designer of cable machines with the then Sievert's Kabelverk in 1975. Since 1989, with his invaluable knowledge in the field, he has been buyer with total access to the entire market for machines in the field.



## We must be economic with hiring

**I**t's fun working in a successful company. Ericsson's success in recent years has meant a lot to the spirit of the company. It has also increased interest in us among young people.

In other words, the conditions for recruiting personnel are good, but still we are at a stage now where we must cut back on recruiting. There are many reasons for this – both negative and positive.

On the negative side we must bear in mind the global economic recession we are having. This also affects Ericsson's sales.

An obviously positive reason for reducing the need for hiring is that presence on the job has increased. In addition, sick leave has been reduced in recent weeks.

We have just begun a project known as "Ericsson Presence." The aim is to reduce absenteeism even more than what has been done with the change in substitute regulations.

It is an opportune project that deals a lot with our living up to our ambitions to be an "Excellent Employer" – an employer that puts the individual at the center.

Every employee in Ericsson should feel in demand in the workplace. He or she should feel that he has a task to accomplish there and should be motivated in the job.

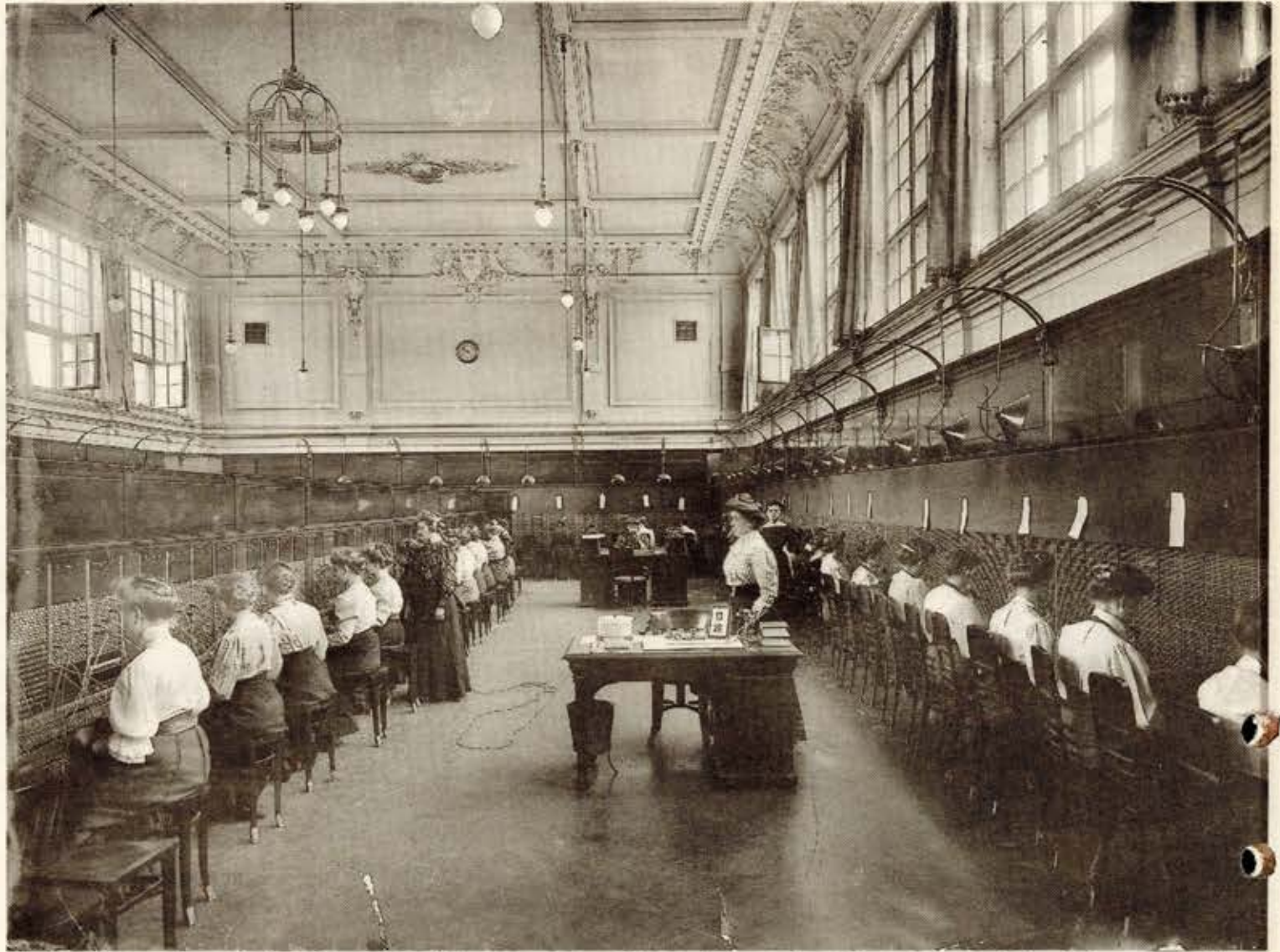
We who are managers – at every level in the company – must contribute toward achieving an atmosphere in the workplace where employees can truly acquire this feeling. This way we can reduce absenteeism and at the same time save both the individual and the company, as well as society, huge economic losses.

Last year at Ericsson in Sweden, absenteeism through illness rose to 3.9 million man-hours. This corresponds to 2,500 employees and involves a cost of 815 million kronor. Hence, every percentage point increase in presence is good personnel economics.

Effective recruiting and better use of the assets we have in Ericsson are also excellent examples of good personnel economics.

Personnel is our dearest – but also most important – asset. A resource that we should really take care of.

Lars Ramqvist



The telephone exchange in the Polish capital of Warsaw was one of Ericsson's biggest installations at the beginning of the century. This picture was taken in "the big operator room," in 1908. Rows of elegant women direct telephone traffic with the help of a giant switchboard from LM Ericsson.

## A glance at the photo archive

■ At Ericsson Media, which is responsible for several in-house publications, there is now Ericsson's "historical" photo archive. There are pictures going back to the company's initial years up to today. They give a lasting impression of change. They also contribute to reinforcing the perspective of our existence in these times when developments are on a digital track and are advancing at a rapid pace. Say what you will, but there was a little more "meat and bones" to telecom operations in earlier times.

We at Ericsson Media can be of assistance to you if you have a problematic illustration task. Through our photo editor, Maria Petersson, you can borrow certain pictures or order repro copies. Stig Wallsten, who deals with the historical archives, can also be of help to you.



In 1930 Naples was struck by an earthquake which did immense damage to the city. Among other things, this reporter's piece was badly distorted. The most important rescue work at the time, the telephone, however was still in use. It was set up, incidentally, in a tree out by the street, where, for security's sake, it was guarded by a soldier of Mussolini's fascist forces.



This picture was taken in 1925 in Mexico, which early on was a significant country on the Ericsson map. For a long time there the word "Ericsson" was synonymous with "telephone."

# Michael Nowak from U.S. gets digital know-how in Sweden



Michael has developed a measuring method that is used by receiver cards that go with the new digital radio base stations.

Michael Nowak, from Ericsson GE Mobile Communications Inc. in Raleigh, U.S.A., has been working in Sweden the past three months. At ERA (Ericsson Radio Systems) Michael, together with three other Americans, will be spending half a year working with and learning about the technology surrounding the new digital mobile telephone system for the North American market.

*"I was curious to see and learn of modern technology outside U.S."*

After only a couple of days in Sweden, working colleagues had taught Michael Nowak how to respond to the question "How are you?" when he comes to work in the morning.

"Fine thanks. Head up and feet down," he would answer in the Swedish equivalent.

Three months and a few language courses later his vocabulary is considerably larger.

Michael began work as a radio designer at RTP (Ericsson GE Mobile Communications Inc.) in Raleigh, North Carolina, last October. Before that he was eight years with Motorola, where, among other things, he worked with microwave construction.

"When I applied for the job with RTP, I knew that it involved working six months in Sweden. I was really curious to see and learn how one worked with modern technology outside the U.S.A. Besides it seemed exciting to live overseas for a while and take in another culture," he says.

Michael went to the Swedish consulate and library in the States to gather some information on Sweden before coming here. He had earlier experiences from Europe in Britain and Greece. But he did not know much about Sweden.

## Rotating tasks

Along with Michael, there are also Scott Bloebaum, Jared Pulley and

Jack Huffman at ERA. Each of them works in different parts of the project for the digital mobile telephone system ACD (American Cellular Digital). Michael works in the section for radio design.

"Until now I have worked mostly with technology on the receiver side. Assisted with problem solutions and developed a method for measuring impulses in filter chains on the receiving card that goes into the digital transmitter," he adds.

Parallel with the job Michael is doing, it is also intended that he would acquire as broad a knowledge as possible about digital radio technology. He will therefore rotate among the various jobs and will soon be going over to learn about the transmitting side of the operations.

Back in Raleigh, Michael, together with Scott, Jared and Jack, will teach others at RTP the new digital technology. A technology that many times more requires entirely new problem solutions compared with the earlier analog system.

"Another mission is to be on standby when in August it is time for installation for the first digital mobile telephone system in Los Angeles. If, then, any problems should arise, I can, either by phone or by going to the location, offer helpful advice on the radio parts", Michael says.



Michael Nowak from Ericsson GE Mobile Communications Inc. in Raleigh, U.S.A., will be living and working half a year in Sweden. Here, he will learn about technology in the new digital radio base stations for the U.S. and Canadian markets.

As far as organization, work methods and assistance are concerned, Michael does not see any major difference between the job at Motorola in the U.S. and the experiences he has acquired in Sweden and ERA. But there are other dissimilarities.

"There is a very informal working atmosphere at ERA. One does not think of dressing up so much for the job here as they do at Motorola. Another difference is the space that a designer has here. Very generous, with a shared lab — and one's own room. Still an-

other difference is that as a designer at ERA one is more focused on what concerns the technology itself and less on the total business strategy, as was the case at Motorola."

Michael also thinks it is very important to get the most out of his leisure time in Sweden. On two occasions he has gone along on ski trips to the Swedish Alps arranged by Ericsson employees. Together with some colleagues he went shortly after Easter to the French Alps for more skiing. He feels that people in Sweden,

very much like he himself does, like being outdoors.

"Fortunately, a lot of them are single and they have time and the desire to spend leisure time together. Otherwise, it would be very lonesome," notes Michael, who in general points to the somewhat cold attitude of the Swedes toward foreigners.

"Then, on the other hand, the Swedes that one gets to know can become very close friends," he hastens to add.

**Text: Helena Andersson  
Photos: Björn Seger**

## Digital telephony in Raleigh

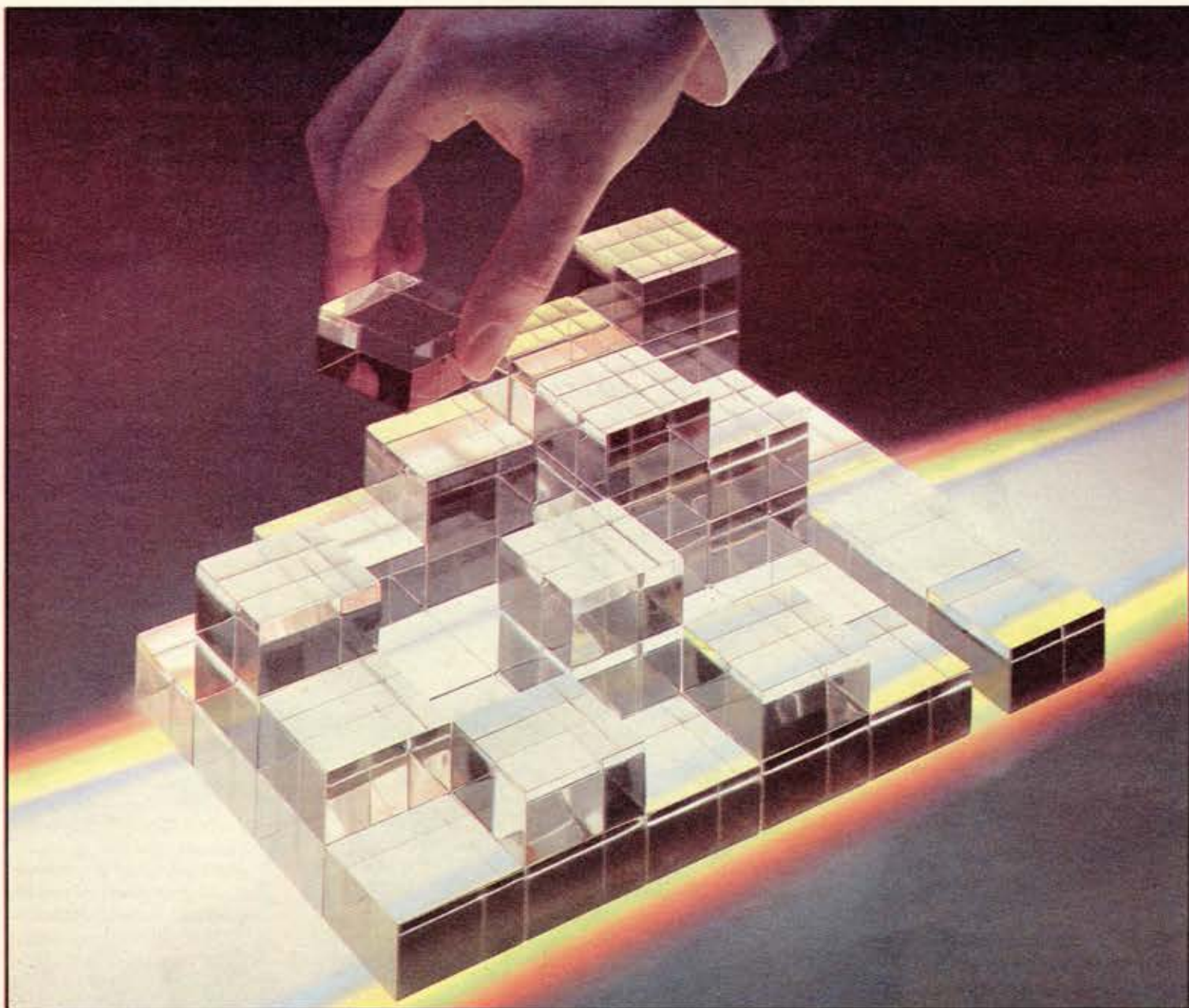
The research and development center of Ericsson GE Mobile Communications (RTP) was opened in November last year in Raleigh, North Carolina, U.S.A.

Its main purpose is to develop and industrialize digital radio base stations and mobile telephones for the North Ame-

rican market. The number of employees today is 53.

Michael Nowak and the other three employees from Raleigh are here in Sweden to learn about new digital technology as well as eventually acting as resource reinforcement for base station designers. When they return home after six months they will give

design support to installers of the mobile telephone system (a test system) which will go into operation in Los Angeles in August. In addition, they will continue with development work in digital mobile telephony in Raleigh. In future, additional employees are expected to come to Sweden.



Ericsson Transport Network Architecture, ETNA, is a new transport network concept that Ericsson Telecom will begin to launch in May.

## Is ETNA Ericsson's new best-seller?

In May we will begin launching of a new platform for transport network, a family of products that can become a new best-seller for ETX alongside AXE; Ericsson Transport Network Architecture, ETNA. The principle is a computerized guided transmission network in which FMAS is linked together with DXC, Digital Cross Connect and the synchronized transmission system (SDH).

The demand for being able to transfer more data at higher speeds and to more rapidly gain access to such connections will increase dramatically in the coming years.

Large companies have long been frustrated with telecom administrations. They are prepared to pay for good service.

When the administrations do not meet these service demands the companies instead set up their own private networks and in this way they compete with the telecom administrations.

Or in this way new operators, who compete directly with the established telecom administrations, can offer these services as their business idea.

Supervision and guidance of the network are also important for the end users.

If something goes wrong in the network today, the tele operator must go out and repair it manually and during the repair time traffic comes to a halt.

Moreover, it is often the customers who have to call and point out that there is something wrong in the network.

### Modules

Ericsson's transport network architecture is built in modules, where customers can choose to buy the whole packet or only parts of it and later add on to it.

The order to Germany for DXC will help the tele administration to handle regional traffic in the network, while the Swedish tele administration has handed in an offer for equipment that will expand and facilitate traffic in the entire national network.

ETNA is built on a synchronic optical transmission system, SDH, and Digital Cross Connect, which helps operators to use the network to maximum effect. And as an automatic guidance for traffic, after predetermined channel selection, should problems occur.

FMAS, the application in TMOS which monitors and guides the transport network, makes it possible for operators to make changes on their screens instead

of having to go out and make the reconnections manually. It also makes it easier to quickly provide new services to end users, for example hooking up new connections between a company's various offices around the world.

### No exchange

In the transport network platform there are also products that make it possible to upgrade the existing network so that it can be adapted to the new products. It is also unnecessary for a tele administration to change the old equipment.

Ericsson's new transport network philosophy is the result of

collaboration between the thinking behind transmission and switching.

Business communications reckons on turning over about 60 billion dollars today. In ten years, this is expected to reach 150 billion dollars, of which computers account for the major part of the increase. It is easy to reckon with huge sums of money for administrations and along with that too the telecommunications companies that Ericsson services, if one has the right products.

Helena Lidén

### Some facts for technicians

The following products are used in Ericsson Transport Network Architecture. Those interested can read more about them in Ericsson Review, Number 3 and 4/1990.

**FMAS** - The transport network's operation support system FMAS is designed to support operation of new SDH and DXC systems, as well as the PDH system. FMAS is built on a computer platform, which is common to the entire TMOS family. FMAS is continuously being developed, since operational support can also be extended to networks that are made up of new network element types. The standardized Q limit (according to TMN) that is used between FMAS and network elements makes it so that network operators can get a homogeneous and consistent operational support setting for its total transport network.

**SDH** - SDH multiplexers make it possible to multiplex signals from PDH or SDH hierarchy to STM-1, STM-4 or STM-16 signals and vice versa.

**DXC** - The digital cross connect system DCC 4/1 and DCC 4/4 can switch transmission channels with the desired bandwidth or even be a bridge between PDH and SDH networks.



### Transmission - more than mere sending

"Ericsson Transport Network Architecture gives our customers greater opportunities both to save money and to give end users better service." So says Karl Alsmar, responsible for the corporate executive function, product management.

Traditionally, Ericsson has never previously invested as much in transmission as it has done in switching. But Karl Alsmar feels that transmission more and more is approximating switching. Now we call that area transswitching.

- Transswitching is more than just sending. We are talking about a very advanced system, and Ericsson's systems know-how is well known.

- When it comes to traditional transmission there are many national suppliers in different markets, but many of these will drop out as the system becomes more and more advanced.

Significantly more resources are required to develop a transswitching system. There are not many Ericsson competitors who have the resources or the competence that is demanded.

- The really huge competition advantage for Ericsson lies in the fact that we can offer a product family that covers the entire area, says Karl Alsmar.

- Today, telecom administrations are less and less interested in putting together all the products that are needed to produce a transport network. They are interested in complete solutions.

### We will invest

- With help of ETNA, tele administrations can increase the range of their services to end users both regarding speed in establishing new connections and quality, thereby gaining a competitive advantage. End users are also prepared to pay for increased service and security in the network, which means huge benefits for the tele administrations.

They can expand capacity in the network so that use level approaches 70 percent and that can simplify supervision and direction of the network, which means a reduction in costs.

- There is no doubt that we shall be investing in transswitching, says Karl Alsmar. Ericsson has vast knowledge in both transmission and switching and thus has an excellent headstart in becoming a leading supplier of transswitching products.

Helena Lidén



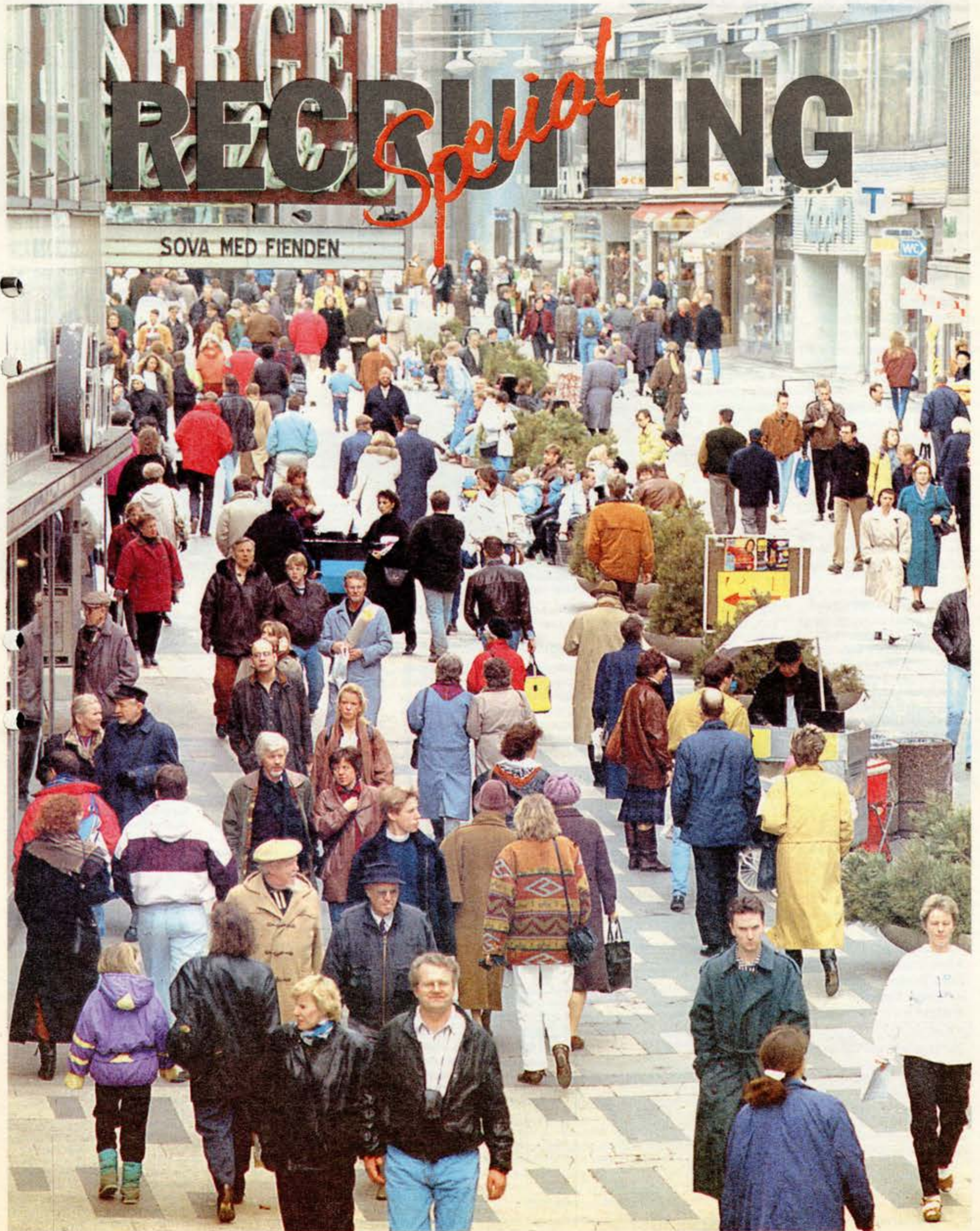
**Britt Reigo on  
"The excellent  
employer"**

PAGE 11



**How they think of  
Ericsson as an  
employer**

PAGES 10, 11, 12, AND 15





# From Ericsson to SAS - and back

Christer Ågren is Britt Reigo's new man in Human Resources. After seven years at SAS he surely has a lot of good ideas and experience with him on how Ericsson can be an Excellent Employer.

The corporate function in Personnel is made up of a team of 12. They work together with the different companies with direction, goal and strategy for Ericsson's personnel organization.

"Our job is a balancing act," says Christer. "We cannot have such far-reaching visions that we lose touch with reality, but on the other hand we cannot be so earth-bound that we dare not let our thoughts take wing."

### SAS invests in personnel

Ever since 1984 when Christer left Ericsson for SAS, he has maintained contact with his old employer. Britt Reigo was also formerly with SAS but Christer did not work with her there.

"My lingering impression of SAS was its will and courage to really invest big in matters of personnel. Companies survive or fall on how motivated employees are to bring out the best in them. During my time at SAS we put in a lot of time and energy to keep abreast of where we were going and what the situation looked like.

"We tried to improve the job climate so that personnel could see the company as "a fair place in

which to work," an underlying thought that in so many ways can be likened to Ericsson's striving to be an Excellent Employer. At SAS, job climate research was also carried out, not unlike Ericsson's OPLUS.

### Away with pyramids

Janne Carlzon at SAS launched the concept of "tearing down the pyramids," which is aimed at minimizing the number of management channels for decentralizing power and responsibility. Christer has his own ideas on how to simplify power structures without rationalizing away managers. It is based on letting the immediate manager concerned have the authority to make as many decisions as possible instead of letting the decision move up in the power hierarchy.

"When decisions are decentralized, people feel more participatory, but above all management time is saved, and that makes for saving both time and money.

"To be able to delegate authority and responsibility we have to have an open and humane job climate where everything can be discussed and where all can dare to say what they think."

"Big desks, closed doors and 'occupied' signs in the corridors do not provide the right milieu for giving and taking responsibility," says Christer, with a laugh.

"At such a large company like Ericsson the job climate differs from department to department. There are those who think that the boss is like a feudal baron of the



After seven years at SAS Christer Ågren is back at Ericsson.

1800s and those who feel more like they are "pals" with their boss."

### Motivated personnel

According to Christer Ågren, a good manager should satisfy three requirements:

"He or she should achieve good long-term economic results and manufacture products of high quality. But it is equally important to build up a strong organization with well-motivated and development-conscious employees. Here, one can draw a parallel between Ericsson and SAS: it is said of both that their products and services are of top quality and durability. They both have good reputations in the job market.

"The question 'What does an employee want out of a job' is no less important than the question 'How does a customer want our product to perform.' Without competent and technically clever employees we cannot bring out competitive products. If we do not provide a good milieu for these people they will not stay with us. It is as simple as that."

In order to achieve a good work climate it is important to have management training - a good manager should both demand of his employees and also see to it that they are fulfilled and are happy. It is equally important to conduct work climate research, like OPLUS, and to act on the results.

"This research stands or falls on how motivated managers are to work with the results. Personnel and Development discussions are also a good measurement of job climate. At SAS, we succeeded in seeing up to 85 percent of service personnel having regular development discussions with management."

"But neither SAS nor Ericsson can survive without its most important asset: people who provide services or design machines. A hundred years ago happiness was a secure job with decent pay. Today, more is being demanded of a job. We have entirely different criteria of satisfaction, with social job security in every way."

### WHAT IS THE

Annelie Hansen, secretary, ETX 20 years,



"Employers should be loyal to employees. I want job assignments that I am happy with, as well as the chance for advancement. It is also important that the company be successful and that the working ambience is pleasant. Ericsson really meets these criteria. The ambience in my department is great. We are even happy outside of the job. I also got a very good introduction. When I came to the department, I knew a lot about the operations. That made my job easier. I am very happy."

Helena Lidén

# 'Ericsson must be an Excellent Employer'

Ericsson stands on the threshold of a decade that is filled with technical challenges. There are several instances of very significant commitments that the company must meet in the coming years.

A basic requirement to meet these challenges is access to qualified personnel. Personnel policy has presumably never been as important as it is today.

Ericsson and other high-tech companies spend billions every year on research and development. Digital radio communications, broadband,

we should not be led into taking our employees for granted," says Britt.

### Respect the individual

Each person has his own development potential. Each and every one must be respected as an individual. Britt takes these two tenets as the departure point for her view, as well as the group's, of what distinguishes an "excellent employer." It has to do with achieving a working climate company-wide that satisfies several basic needs of the employee:

• **Development:** Everyone has a need for development both personally and in the job. The individual should be given the opportunity to take a major part of the responsibility himself for that.

• **Freedom:** Individual responsibility and decision-making in certain areas provide a strong sense of freedom. So long as important goals and deadlines can be met it is very often the individual himself who can best plan the daily work schedule.

• **Participation:** Those who take an active part in job planning and exercises influence in job relationships feel a stronger sense of loyalty and commitment for common tasks. Everyone should feel that he is participating in Ericsson's activities and recognize his own contribution toward them.

• **Recognition:** It is important that the individual is recognized and rewarded for a job well done. A word of commendation or added



"Personnel policies must be far-sighted. We must also work with recruitment issues in time, when our need for people is less pressing," says Britt Reigo.

intelligent networks, fiber optic transmission and many, many other new technologies will be with us during the coming decade. We need lots of qualified people to achieve this.

Successful recruitment is one of the biggest challenges confronting Ericsson today. Another is for the professional personnel that we already have to stay and advance.

### Far-sighted policy

Britt Reigo is head of the corporate function "Personnel and Organization." In this brief, she has responsibility for the group's personnel policies. Together with her colleagues, she supports the business areas and the local companies in their personnel work.

Now there are two missions that dominate personnel policy work: Striving to make Ericsson an "excellent employer" and, above all, the task of instilling the group's common values in all employees.

"Making Ericsson known as an Excellent Employer is important now that we need to recruit thousands of qualified technicians all over the world," says Britt. She is aware that the industry downturn in Sweden just now makes recruiting considerably easier, in the short term, at the same time that the company is incidentally cutting back on hiring. But this does not change the long-term emphasis on Ericsson having a good reputation as an employer, the world over.

"Personnel policies must always be far-sighted. We must not allow ourselves to be deceived by the notion that job-seekers will come willingly to us. In the same way,



"It is important that all employees feel a part of Ericsson's prosperity as well as its adversity."

freedom or responsibility is also a worthy reward.

• **Confidence:** Employee confidence and a secure, healthy work milieu, of course. But also, without risk of tediousness, the chance to voice one's opinions and to give or take constructive criticism.

• **Fairness:** The employee should feel that he has been treated fairly.



"Our values are of basic significance for all personnel matters."

Everyone should have the chance "to appeal" a faulty decision by a superior.

"These basic requirements must always be a guiding principle in our personnel policy," says Britt. "If we fail to achieve them we cannot, in the long run, attract qualified people."

Ericsson's values fit well with the requirements for being an excellent employer. They provide a common platform for Ericsson's corporate culture. Work is proceeding full speed ahead in implementing them in the entire group. During this year these values will be discussed in every Ericsson company. The goal is that every employee will know what they are and will comprehend them before the year is out.

"Even if these values have their origin in Sweden, they have been positively accepted by companies around the world. These values have a gentle and humane ring to them that is acceptable everywhere today."

• **Professionalism:** All our work should be customer oriented. Operations must have a clearly defined goal regarding quality and profitability. We must expand our knowledge and be the best company in its field. Ericsson should be seen in its totality, as one company meeting the needs of the customer and the market.

• **Respect:** We must be concerned about each other and work in an open atmosphere that stimulates the personal development of each and everyone and that breeds job satisfaction. Freedom to plan and take responsibility for one's own work is also important. We must work in efficient teams and transcend borders through cooperation. We must show respect for each other.

• **Perseverance:** We must continue to work long-term and goal-directed. At the same time, we who work in Ericsson must be open to new ideas and willing to accept change.

### Cementing the group

"Ericsson's values provide the best possible base for building good personnel policy," Britt feels. What is important now is to live up to these values in practice. Similarly, this also applies to the aim of being an excellent employer. To really and truly heed the basic needs of all our employees.

Britt herself feels that she and her colleagues have worked long enough at a theoretical plan. Now, she feels that the time has come to deal with the matter practically.

"Now we shall direct all our energies into implementing the personnel policies that we have devised," Britt promises. She is aware of the immensity of this task. She herself sees personnel policy as a cornerstone in Ericsson's corporate culture; indeed, like the "glue" that holds the entire group together.

By Lars-Göran Hedin  
Photo: Maria Petersson

## Restrictive recruiting - instead of hiring freeze

"We are going to be very restrictive when it comes to recruiting," says Lars Wiklund, personnel director at Ericsson Telecom. The objective is to achieve such efficiency up front that we avoid a hiring freeze, which many other companies have today."

"I do not believe in hiring freezes as an effective method," Lars Wiklund continues. "Then one loses contact with the universities and in the end the word gets out that Ericsson is not recruiting and there goes the spontaneous application too."

Restrictions mean that one generally goes over all the recruiting plans. When it comes to staff it is Håkan Jansson himself, president of BX, who will approve all recruiting. At the

divisions and regions, it is the division or regional head that will do so.

Lars Wiklund points out that it is still important to carry out the technical projects that are strategically important for Ericsson.

"That's why in future we will still recruit quite a number of technicians. But this means that other personnel needs in ETX will have to step aside."

Naturally, the restrictions are part of the cost-cutting plans that apply to ETX. Apart from restrictive recruiting, conferences, renovations and travel will be curtailed.

In recent years ETX has not had any recruitment problems at all, thanks mostly to the fact that things went well for the company. With the economic downturn, it will be even easier to find applicants for jobs."

Despite the restrictions, recruitment is always

an important part of operations. We put down a lot of money in the newly recruited. Hence, it is always important to find the right person for the right job.

When Sweden comes into the EC, it would be easier to look for jobs abroad. Will this affect Ericsson positively or negatively?

"I do not feel we will suffer from that. All our big companies in Europe have a good reputation in the job market. And even if some of the Swedish graduates want to move around, I do not think it would be anything like an exodus.

"Naturally, it is important for us to have good collaboration with the large universities in Europe, but already we can see today, for example in Germany, that the Swedish management style and the Swedish method of joy on the job are very attractive.

### IDEAL EMPLOYER LIKE?

Torbjörn Hellman, technician, KTH 22 years



"I want to have good opportunities for advancement and satisfying job assignments. It is important that one is not stuck in the same job and begins to work by rote. I want assignments that make me advance. I do not want to work only in Sweden, so the chances to work abroad are also important. Ericsson should meet these demands. But it is easier to see the whole picture much easier in a small company. At Ericsson there is a risk of getting lost in the crowd."

Lars-Erik Mickos, CAD/CAE-Support, EBC



"It is most important that the employer invests in personnel. In part, he should see to it that one is trained so that one can move up in his job. But it is also significant that the employer really shows concern for the employee and do a bit extra for personnel. This is how it is in my department, and I am happy. I went into the job with expectations of the best, and I have not been disappointed yet in any way. But in effect I do not have anything with which to compare, since this is my first job."

## RECRUITING

# Job advertisement's new look

Ericsson's job advertisements are not what they used to be. Long, thin and stacked they fill the job openings pages of Dagens Nyheter and Svenska Dagbladet. Unpretentious and to the point – without graphic or wordy embellishments, they are the visible part of our new recruiting profile.

But wait a moment, for there is more to come soon. The finishing stages are being put on an advertising campaign that will profile Ericsson as the job market. "Excellent employer" will be on everyone's lips when the Ericsson logo pops up among the ads.

Last November Ericsson's personnel directors, led by Britt Reigo, charged Johan Fischerström with the mission of heading up a renewal project. As graphics director within the corporate function Information, Johan took on the responsibility for giving Ericsson job advertisements a new look.

The prerequisites were these: The ads should not cost any more money – rather, the contrary. The format of the ads should be easy for both graphic artists and personnel administration to work with. Moreover, they should leave a professional impression and attract the right person for the job.

## No scratch on the surface

But merely freshening up the appearance of the ads struck Johan as just scratching the surface. Bigger changes were needed to achieve Britt Reigo's goal of being perceived in the job market as an "excellent employer."

Johan Fischerström contacted the Welinder advertising agency which helped in working out a new strategy and new ads for Ericsson's recruiting. The result was a campaign that distinguished the recruiting itself of people from the profiling of Ericsson as a company.

On February 28, for the first time we saw the new job advertisements in print. Since then, not a single Thursday or Sunday has gone by without the new ads appearing in the press. But don't they look a bit drab?

"When people are looking for a



Johan Fischerström and Rolf Skagerborg reading the job advertisements.

job there are two things they look for in a job advertisement: the employer and the headline," Johan believes.

Today Ericsson has such a positive image in the job market that its name alone attracts applicants. And with an objective headline we capture the applicant's interest. Writing short and to the point is very important in the new ads.

Last year alone, some 2,000 people were recruited in Stockholm by Ericsson, mostly technicians. On the average of five applicants for each opening this amounts to 10,000 applications for the 150-200 personnel officers to go through. When the right persons are hired there will be 8,000 disappointed applicants who will receive a "thank you for your interest" letter in the mail.

Rolf Skagerborg has worked together with Johan Fischerström in the recruiting project. For a long time he has been seeking of his own a method for following through on all the applications received.

## Future openings

"We should be concerned about these applicants, maintain their interest for a job at Ericsson and

come back to them when there are openings in their area of competence."

But there is still a lot to do in order to make recruiting effective," Rolf feels:

"Above all, we must achieve the conditions for a personnel administration that can handle, in the twinkling of an eye, a response to applicants, take care of spontaneous applications, distribute information

to those that are curious about jobs and foster the interest of applicants who are not hired.

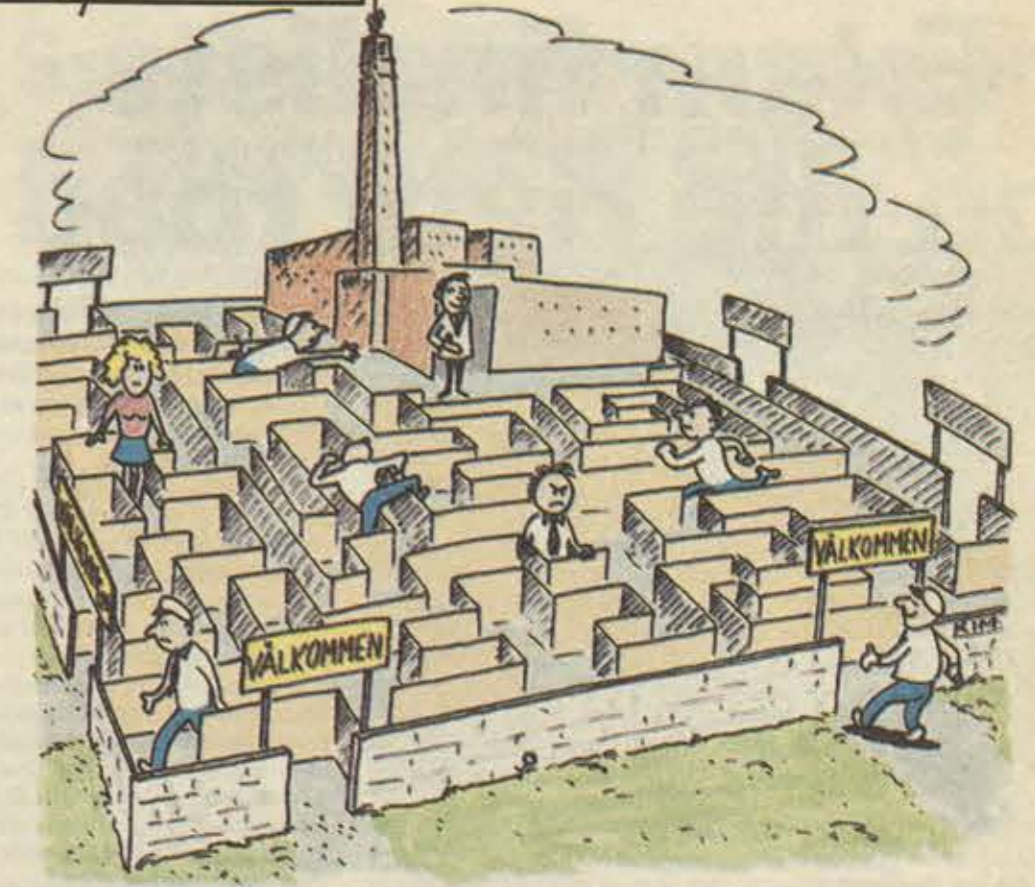
Johan showed a sketch of how a profile advertisement could appear. In the headline one speaks of Ericsson's international profile and position as a pioneer in technology. In one corner there is a form reply that one can send in to indicate interest. The profile advertisements will take up "timeless" themes, in-

dependent of acute recruiting needs.

"They will describe what we do here behind the gates and portray future Ericsson subjects," says Johan. They are not directed to any particular positions but rather will describe the manner in which we work and what possibilities there are for a future with Ericsson."

Text: Pernilla Åström  
Photo: Maria Petersson

## RECRUITING



## A maze of entrances

There are a lot of people who want to get on the Ericsson bandwagon now. Word of Ericsson as a solid workplace is getting around and one can read in the papers how well things are going.

Ericsson is one of the few companies that are hiring during these recessionary times. Personnel officers look inside the company and place ads in the daily and trade press to find the right person for the right job.

"We have the reputation of being a good company – so people look for jobs here spontaneously," says Kerstin Westerlund, personnel officer at ETX.

Kerstin is one of those who recruits for the workshop in the production division. She hires machine operators and assembly workers – mostly people with high-school training as workshop technicians but also undergraduate engineers.

"In the space of a couple of years we have recruited some 150 people. Many times as a result of people looking for jobs here on their own. Relatives and acquaintances of Ericsson employees contact me for they have heard

that Ericsson is a solid and stable company."

Charlotte Ugglä is in personnel at ETX, TG section, and hires primarily technicians.

"I receive surely ten applications a week," says Charlotte. "In addition, I get a number of calls related to job possibilities."

"Those at the other end of the line are sometimes frustrated at having been transferred for the umpteenth time before finally getting through to me. Ericsson is so large that we should have ONE face to the applicants."

"ONE channel to Ericsson for all the clever, well-trained applicants would facilitate processing considerably. In a smooth and simple way they could be directed to the right department and personnel officer in this giant concern. At the same time we should not risk losing an applicant who is wandering around in our telephone corridors."

## Never finished

At TG section, the personnel department has trained managers in recruiting in order to get them to see recruiting in their context.

"We have tried to teach them that it is natural that people change jobs. We all want to have change," Charlotte emphasizes. Certain managers see it as a misfortune when people quit. And that is a mistake. Among the same type of managers one can notice a desire to be 'finished' with recruiting so that they can get on with 'real' tasks.

"Some managers see recruiting work as a disturbing element in their 'real' technical work," says Mats Ulfgren, also in personnel at ETX. But its employees are a company's greatest asset; competent staff does not grow on trees."

Mats is responsible for internal recruiting for the development center in Aachen, Germany. This is a development project that runs into 1994 and every year they need 50-70 technicians to start up and expand the operations.

"There are many internal avenues to pursue: Memo, internal TV, bulletin boards and the 'Jobb Nytt' -

pamphlet. But unfortunately we do not receive many replies this way."

## Employee tips

"One of our most important channels for recruiting is tips from Ericsson employees about acquaintances with good training who are interested in working at Ericsson," says Olle Bergström, head of personnel at ERA.

"This type of 'pal' recruiting is often very effective. For when Ericsson employees recommend their workplace to friends, they later feel as part of what contributes to the workplace living up to expectations. And, moreover, they recommended only those they know are qualified. We must use this valuable informal channel for all it's worth. A happy employee is the best recruiter."

Before Olle places a job advertisement in Dagens Nyheter, he looks within Ericsson first. But there are not many replies to announcements via Memo, Plats för Dig (Place for You), the internal job pamphlet in Kista, or JobbNytt.

"Paradoxically, sometimes we get the most interesting responses from Ericsson colleagues when we place an ad in the daily press."

Olle Bergström recruits people for marketing and product planning for mobile telephone systems and defense communications. Mobile phones are the rage right now and that makes it a little easier to recruit people.

"The best draw to recruiting we can have is that all goes well for the company and every order we receive is written up in the press and that we are all over the world. We get a lot of spontaneous applications and when we actually announce in the daily papers and trade press there are many very qualified applicants."

"New job advertisements is a good idea," Olle feels. "It is good to change one's image and project the Ericsson group beyond the business areas. Despite everything, it is now ONE Ericsson that counts."

Text: Pernilla Åström

## WHAT IS THE IDEAL EMPLOYER LIKE?

Martin Kulhanek, technician, KTH, 24 years



"They should have good internal training. There should be opportunities for trying out in different jobs."

I also feel it is important to have the chance to move around in different departments. This provides broad experience. Ericsson meet these demands quite well. At the same time it scares me that the company is so big and anonymous. I have heard that the pay is bad and that they have limited entry level opportunities. Maybe a study trip could prove whether this true."

Monika Gullin, technician, KTH, 22 years



"The important thing is that it has international contacts, that the company cares about its personnel, that one is rewarded by merit and not after a given number of years. Since I am a woman it is important the company does not have an anti-feminist personnel policy. I am a bit negative toward Ericsson. I have heard that it is a huge company and that they are among the low payers. On the other hand the company offers good training and there is the chance to acquire good international contacts."

Magnus Uttermar, economics' Handels, 21 years



"In the future I would like to work in a huge workplace where there are many opportunities. The company should have a lot of foreign operations, but where activities are such that one can work in smaller groups. For those coming directly from university a training program is ideal for a smooth transition. Ericsson meets these demands quite well, but I still think the company is too large. I am a little concerned about starting at Ericsson or fear of getting lost in the crowd."

Terese Nordström, ERA technical administrator, 22 years



"The employer should invest in personnel and give them meaningful jobs. I am the first to have the job of technical administrator in the department and can therefore plan and determine a lot myself. It feels good. I get the feeling Ericsson invests a lot in its personnel. I myself began the job with two weeks' training. The advancement opportunities that are found in a large company are also good."

## MP program brings out managers

In parts of Ericsson the so-called MP program has been put into place. MP stands for Management Planning, that is it deals with planning to fill future management positions well in advance.

The cornerstone of the MP program is a somewhat structured and partly standardized assessment of employees which all managers will make. The idea is to pick out candidates for high positions in the future.

"What is new is that we are now trying to build up knowledge of

management matters that cover the entire company. This way we get a broader recruiting foundation for different positions," says Britt Reigo.

The idea of Management Planning is well-established in many other large companies, for example IBM and General Electric in the U.S.

Ericsson's MP program will be completely open, that is to say those who are chosen as management candidates will get word of this themselves and will also have

# Exam finalists on the right road

Over the last two years, 102 students completed their final exams on the job at ERA and ECS. At the beginning of January this year, 30 of these had stayed on as employees. Erik and Forouz are two finalists who chose to remain with Ericsson.

Forouz Firoozi is 28 and comes from Iran. She graduated as a civil engineer in electrotechnology from the Technical Institute in Stockholm. In 1989, she did her final practicals at ETX.

In January 1990 she was employed by ERA to take part in the introduction of the digital network system for mobile radio in the U.S. Erik Forsgren is 26 years old and graduated as a civil engineer in industrial economy from Linköping's Technical Institute. In the fall of 1990 he and a friend did their final practicals at ETX.

In February this year Erik was employed in the product management division at ETX, which is responsible for incorporating marketing demands into future products.

Erik: Before I did my finals I knew very little about the job situation at Ericsson. I mostly associated the company with certain products. I have never seen the company as specially glamorous or as a trendy company. Actually, I had a picture of the company as being huge and not particularly dynamic. If someone had asked me two years ago if I would work at Ericsson I

would have been very doubtful about saying yes.

## Nobody asked

Forouz: It was not like that for me. I was attracted all the time toward Ericsson. I had heard a lot from the Armada Day presentations at the Technical Institute and on a visit to the company. I was particularly curious about ERA but I never knew what they worked with.

When Erik and his friend were finished with their finals there was no job available just then.

Erik: When we were about to be finished with our exams nothing was done to encourage us to stay on, even though our work was highly praised. We thought that was a bit strange. We saw that they were looking for people in the job advertisements but nobody asked us. I felt that must have been a better and less expensive way to hire people. But I felt most job assignments here call for specially qualified people and that there was not limited interest in hiring new graduates. Some time after we completed our finals, however, I was contacted by my then group manager, who wanted to discuss the future. That was the start of my being here today.

## Own initiative

During the time she was doing her finals at Ericsson Forouz checked out the internal publications for job openings similar to what she was doing. One day she got a call from her supervisor who said that a group manager at ERA wanted to meet with her.

Forouz: He came to visit me and I appreciated that because it is a rare occurrence. I went to ERA and met the others in the group and also the personnel manager. After three weeks I got a job.

Erik: With my practicals I had gotten a very good picture of the company and I knew how it worked. Among other reasons, what made me choose Ericsson was that I wanted to work in an area where a lot was going on. When we began to work on our finals, interest in developments in Eastern European markets was the main reason for the choice of Ericsson for our practicals. But when we were finished we felt that the area of telecommunications itself was no less interesting.

## Dynamics attract

Erik: I also had other job offers, among them as a computer consultant. There were a lot of young people there, it was dynamic, positive, an exhilarating ambience and real go. What finally determined my choice was that the right international atmosphere was missing.

Forouz: I liked my practicals and enjoyed being at Ericsson. I felt I would take the chance since I did not have to stay if things did not work out. ERA is a young leading company. Some fresh blood and everything moves fast. Compared with ETX there is an element of impatience working here. Things are happening all the time. But that's fine with me since I always want to be on the frontline.

It is very important that employers look after their employees, and that is the case at Ericsson - with the exception of salaries.



Final exam students Forouz and Erik chose to stay and continue working at Ericsson, but for Erik the choice was not all that easy.

Erik: Since I am new and am now taking on new job assignments it is difficult to say whether Ericsson meets with my expectations. When you are new you should take it easy. But I see it as a step in my own development, meeting and learning from working with different kinds of people. It provides a break from cramming. My most immediate goal is to find something where I can do something new. It is frustrating to feel that you are not doing anything.

Forouz: So far I am happy with my work project. I know that other companies could offer me a better

salary but I don't want to quit. But I know what it means to be new, how one sits in his room and is quiet, feeling that he knows nothing.

"I feel you must express very clearly what you want but you must also acquire knowledge and be aware of what the job is all about. If you have a thorough understanding of the company you can get whatever job you want. A job at Ericsson gives you the chance to show what you know, and then it is only a matter of "go for it."

Text: Charlotta Westling  
Photos: Maria Petersson

## Keen interest among students

Ericsson is high in the esteem of students around the country. In the latest rankings Ericsson came in second place over other companies where economics and technology graduates want to work. But that's why it is all the more important to maintain contact with the academic institutions. A large part of Ericsson's future work force lies there.

Catarina Larson is the person in Ericsson who maintains contact with technical institutes and universities. She travels all around Sweden and when she is in the office she spends most of the time working on the phone. She can testify that interest in Ericsson is keen.

"Ericsson's developments, with record results and stock market gains naturally increase interest in us as an employer."

Catarina does not only visit academic institutes. She is in charge of job advertisements in school publications, she organizes study visits to Ericsson and responds to questions from students that call Ericsson.

"Contacts with academic institutions are important to our recruiting, and the best way to recruit is by letting students come to Ericsson to

work on their finals and do practicals," she says. The larger institutions around the country organize all the so-called job market days. Exhibitions are always in progress and there are personnel representatives at the stands and former students from the respective schools.

"We try to get engineers who have attended the school we are visiting."

Another part is company presentations. It is important that they are both positive and negative aspects should be pointed out. Otherwise one is being drawn to a world of make-believe.

Students get the chance to speak one-on-one with representatives from the companies. Someone from the personnel department and a technician are present at the

meeting. The questions that are most often put to Catarina on school visits are what kind of salaries Ericsson pays and what opportunities are there for working abroad.

"In southern Sweden students are more interested in knowing more about trainee programs. Technicians, above all in Stockholm, want to know more about what technology assignments Ericsson has to offer."

## Not only Stockholm

"When we visit schools in northern Sweden we also notice an interest in what Ericsson has in the way of operations in places other than Stockholm."

"Young people studying today are very aware of their capabilities. They are very international and many of them speak several languages. Maybe, some would see them as pampered, but it is more accurate to say that they are not waiting for offers on a silver tray. They are prepared to fight and show what they are after. But if they do not get any response, they would very simply go somewhere else.

Text: Helena Lidén

# Special courses and work abroad good carrots

"I must admit that the possibility of working abroad is what attracted me most when I saw the ad," says Anders Jansson, one of 20 recent graduates who in the fall of '89 got the chance to join Ericsson Radio's one-year special training course for systems engineers.



The possibility of working overseas was a major factor in Anders Jansson's entering Ericsson Radio's special training program for systems engineers. The course also includes half a year's practical work abroad, and for Anders that meant Dallas, where he worked with function testing. Here, Anders is on horseback, alongside Thomas Nilsson, another course participant who also went to Dallas.

Now, 18 months later, Anders has some perspective in the job. After half a year's practical work in Dallas, he realizes how important the theoretical foundation is too and how much one has to learn before one "knows the job."

The background to the course came quickly when in the spring of 1989 ERA was expanding rapidly. The need for systems engineers who have an overview of the complete product, was hard to meet.

"We did not have the time to go the traditional route, to let people mature slowly and get a hold of the totality of a product," says Jan Folke Fernholm, who was in the courses.

"Neither could we let new and inexperienced people sit beside the experienced technicians and learn. A method that is good in itself but that we could not use since we had so much to do and needed all the qualified people for other tasks."

## Special group

The idea came up to take a group of newly graduated civil engineers and let them pursue a one-year course in special training, theory mixed with practice. ERA's own standard courses would be added to with special lectures. Another major plus factor was also to have practical work more attractive by doing it abroad.

A group of 20 seemed ample enough. Recruiting went fast during summer of '89. It was not hard to find qualified engineers. Ads brought in 80-90 applications, so much so that ERA was able to hire 15-20 technicians for other jobs.

"We emphasized certain qualities," explains Jan Folke Fernholm. "This involved an outgoing job. We saw overseas connection as a plus as being able to show initiative, that one could set up goals and

achieve them. It could be something like having driven through Africa."

The training began with four months' theory, first broadly and then more concentrated in a given area. This was followed by a little over half a year's practical work overseas. Experienced colleagues were used, for example, in Canada, Dallas, Mexico, Australia, France and Taiwan.

The group that stayed together all fall was now split up around the world.

## Coincidence

Anders Jansson went to Dallas. He was one of the some 100 who saw the ad in early summer '89. Mostly by coincidence. Someone had taken a copy of the ad in Ny Teknik (New Technology) and put it on the bulletin board at the Technical Institute where Anders was studying technology physics and was doing his final practicals at ABB.

"I saw a chance," he recalls. "I think most people, like myself, are drawn by a job overseas. My application was somewhat improvised. I had to go for the interview one evening since I was on my way to the States to spend the summer driving around the country. Afterwards I called from a camping site outside Los Angeles and learned that I was accepted."

"It took a while to get a real grasp of all that was going on. We should know a bit about lots of things, and for me who studied technology physics the theory courses seemed at first a bit elementary. But with time I began to see the connection

and now sometimes I can see that a complementary course is required. But now I never have time."

It went well for Anders. He came in on the digital mobile system for the U.S. and could do his practical work in Dallas, on the switching side, at the ETX office.

"I have been fortunate," Anders says. "I had interesting job assignments and my time in Dallas gave me a lot of insight into how switches function, how you test and verify. Now that I know that part, I must quickly move on to radio and base stations."

## Perspective

The U.S. trip met with Anders's expectations, but it also gave perspective about Ericsson and Sweden. When it comes to salaries, for example. It is one of the few things that Anders is not happy with.

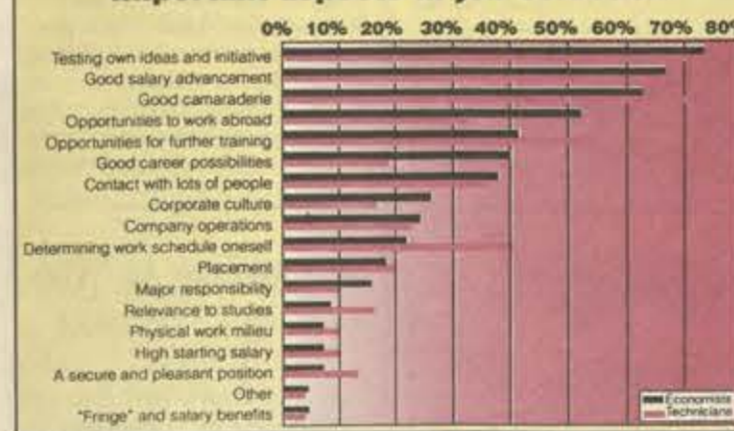
"I feel Ericsson can have problems if salaries are not raised and if it does not use salary differentials more. Americans reflect far more significantly in their system when they are happy with what one is doing."

In any case Anders plans to continue with Ericsson. A new overseas posting is in the works. Guildford in England in May where he will trade places with an Englishman who is coming to Sweden.

"Then I want to be home for a year and learn to work more with systems issues. But afterwards I want out of the contract. In a few words, I am drawn to working abroad."

Text: Lars Cederquist

## Important aspects in job selection



1,305 future economists and technicians from the country's universities and technical institutes got to answer the question: What are the five most important aspects for you when you choose a job/employer. The research was done by Fri Media and was published in Svenska Dagbladet in April this year.

## WHAT IS THE IDEAL EMPLOYER LIKE?

Bo Karlsson, microwave designer, ERA, Mölndal, 25 years



"The most important thing is that the technology appeals to me and that there are good prospects for advancement. A company at the forefront of technology is important, but so, too, are colleagues and the milieu. Ericsson satisfies these demands quite well. I have geared myself to Ericsson since high school. Technology, and in particular microwave electronics, has always interested me, and now Ericsson is at the forefront of this technology."

Anna-Karin Renström, technician, KTH, 25 years



"I want my employer to give me an interesting job from which I can gain something personally." "A high salary is not that important but the job should be fun. If it is not, certainly a good salary can compensate for that." "I also feel that it is important that one should feel welcome in the workplace."

"I don't want to form an opinion of Ericsson before I have been there."

Anna Isacson, economist, Handels, 26 years



"The job itself and having a boss who deals with you directly are more important than salary. No uncertainty about what has to be done. Clear directions but still with freedom. He would maintain ongoing contact to keep a flowing dialogue between us. Since there are many departments in Ericsson there is something for everyone. The word among economists however is that they do not have a future there. At Handels presentation day the conclusion was that the company only needs technicians."

## Two batches

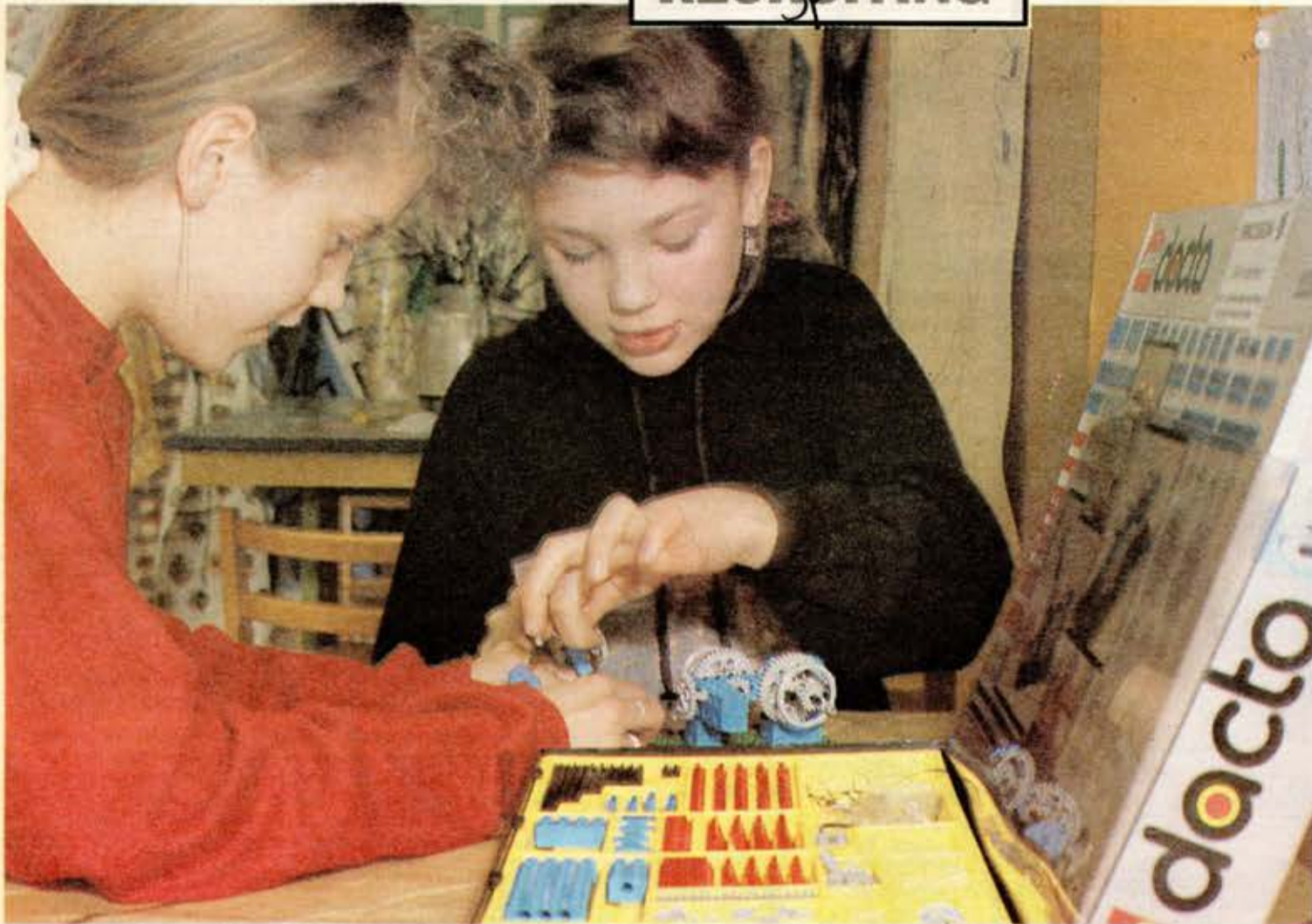
The 1989 training course has been followed up with a similar course that is taking place through 1990-91. A number of things, though, have changed.

In the first course there was a tendency for the group to keep too much to itself, being somewhat isolated. Hence, in the new batch it is seen to it that the participants are quickly assigned to sections and anchored in their jobs. Like the first one, the group has been allocated a "class daddy," someone who is older and who has worked a few years.

"This is a good platform, but it calls for hard work," says Jan-Folke Fernholm. "Nobody is a finished systems engineer after a year, but the course serves as a way for quickly producing a group of needed people. Nevertheless, another group is coming in immediately after this one. Now it is a matter of using effectively and training further those that we have."



Catarina Larson is responsible for university contacts in the Ericsson group. Photos: Maria Petersson



Forming them in good time ... Pupils at the Pingelstorp school in Gävle, among others Emma Troedsson and Hannah Enlund, can play with lego donated by Ericsson. Photo: Tommy Lundberg.

## Technical lego in the classroom

At the Pingstorp school in Gävle, Sweden, a project called "Workshop" has been going on since the fall.

The idea is to get pupils more interested in a technical context. Four companies in Gävle, among them Ericsson, has sponsored a school area with technical lego.

The lego drawers at the Sättra schools come from Ericsson. There the pupils work in pairs with different tasks that their teachers, Eva-Lena Rogsberg and Agneta Forsberg, give them. The first task is that the children should put all the pieces in their appropriate places

after a drawing. Next, one of them closes his eyes and the other by touching describes what piece he or she has chosen.

It means finding new words to describe the pieces and all the words are written on the blackboard. The next step is for one child in the

group to build a model, and the others then have to build one exactly like it.

Finally, the group can build whatever they want, letting their fantasy take over, or they build according to a construction design. Here, it is collaboration that matters.

### Harder tasks

With every session that the pupils work with technical lego the harder the tasks are.

"It is immensely stimulating to see how children grow with lego

lessons," says Eva-Lena, the initiator and guiding spirit behind the project. Girls in particular are at a bit of a loss when it comes to building out of fantasy from the start. But after four lessons they are all on the way to becoming technicians.

The coordinator within Ericsson is Ulla Holmgren, from the personnel department. She herself has a little girl in the fourth grade class. In the fall, some of the pupils will make a study tour of their respective "father companies" as a follow-up.

## Win project - clearly a winner

In the spring of '89, Ericsson Cables AB in Hudiksvall (Telecable division) and a number of other companies in northern Hälsingland, particularly in the manufacturing industry, started a development project in cooperation with the school AMU, the state employment bureau and the trade unions. The project started off with the designation "Company-school-society." But it soon acquired the name Vinna (Win) project. The overriding goal was to secure personnel welfare in the '90s - qualitatively as well as quantitatively.

The background to the project was that factory and industrial work was very low on the priority list of jobs among young people, and so industry decided to see if it could manage to turn this trend around. Since changes in attitude is not something that happens in a jiffy, the initiators made a joint decision that the project in the first place would take four years. Already, after scarcely two years it has begun to show positive results in ways that one had never expected.

While the number of high-school students choosing technical courses has fallen in recent years around the country in general, it has increased in Hudiksvall.

"One of the project's goals was in four years to increase by 50 percent the choice of technical studies as a first option," says Christer Lindquist, of Telecable division's personnel department. This goal has already been reached.

The success is in the first

place explained by a real pool of information. Information for students, for parents, teachers and other school personnel. An improved PRAO. And practical activities are another important factor. The internal workings of the companies involved is a third factor yet.

### Open house

"As an example of what we did, we can point to having invited parents and children to the company, held an open house and

showed them our working environment," says Christer. "We also invited the high-school teachers to come to the company and practice for a week. Interest has been immense but the difficulties of getting substitute teachers to fill in were even more so. We have had five teachers on study tours here at us and in one case a company employee had to fill in for one of them in order for him to have the study tour.

### New training lines

The so-called "Falun model" is another way of attempting to secure access to well-trained and qualified manpower. It was Saab-Scania, Papyrus Grycksbo and Ericsson Cables AB, through its Power Cable division, that got together with the high-school in Falun and created a three-year technical course. It will begin

now in the fall. Applications close on May 1 but it is already clear that interest is high for the new course, which can be said to replace the abandoned workshop courses.

"We anticipate a great deal from this approach," says Marianne Arfelt, personnel manager with the Power Cable division. "From the three companies' side, we reckon that the new courses of study will give us good professionally trained operators also in the future. Moreover, after the three-year study period the students, provided they complete the course successfully, have the possibility of working for any of the three companies that are involved in the training program. This also gives the added possibility of going on to further studies at university.

Text: Thord Andersson

## Training in the company for the company

"The Swedish work force is on the brink of major changes in the '90s. A huge and important task, therefore, is renewed training in the company for the company." So says Göran Kristoffersson, personnel director in Business Area Radio Communications and a business expert on the government's competency report. Before his job as personnel director, Göran was production director at Radio Communications.

The competency report was commissioned by the government and in the fall would present a proposal for economic support for competency development in the workplace. The committee will map and analyze the nature of current personnel policies, its aims and directions, as well as looking into the training support that exists. The aim is to find out where the greatest needs are to be able to channel resources.

"The approach to renewal training should be by companies for companies," says Göran. As an example he explains that it is not courses in Spanish that are needed but in English since Swedish companies are becoming more and more international.

In Radio Communications certain renewal training has already begun. The course Quality Dialogue, which among other things aims at broader understanding of different functions and work methods within the company is an example of renewal training. Another example is the large investment in training in English, which is being done at the Radio plant in Kumla. As a part of Ericsson GE Mobile Communications and with a "sister" plant in the U.S. the English courses have become important for employees at the factory.

Gunilla Tamm

## Sharing is the wayword

All the efforts put into recruiting new employees to Ericsson amount to nothing and are not worth it if the company cannot succeed in being an "Excellent Employer." One of the words that crop up most often in discussions about what an excellent employer really means is the word "sharing."

"Ericsson must be able to offer more than a good salary. The employee must feel that he or she is 'sharing' in an important development process in the company as well as in a broader perspective."

"With his knowledge, his professionalism and his performance the Ericsson employee should also feel that he is sharing in the achievement of products and services which are of great value for other people."

"The employee's output contributes to important steps," Britt Reigo emphasizes.

# 'Total network competence' was this year's CeBIT theme

More than half a million visitors came this year to Hannover to join in CeBIT, the giant computer and telecom fair. Fortyfive thousand of these visited the Ericsson stand. This year, Ericsson was portrayed as a single company, with "total network competence" as the common theme for the range of systems and products shown at the stand.

## Exhibition debut for Ericsson's new organization

This year's CeBIT fair was one of the largest ever, despite economic downturn and the many crises confronting the world. The bulk of CeBIT is given to computer equipment, but every year there is also a considerable number of companies that fill the halls with telecommunications displays.

Ericsson showed up with huge resources along a broad front this time. All the business areas, except defense systems, were represented at the stand. The intention was to show Ericsson's entire range, strength and competence. ONE single company with the offer of "Total Network Competence."

### New concept

At a seminar during CeBIT, "Interactive Video" was discussed as a future aid accessory of major significance. At the stand there was technology ready for the viewing. It was used for showing elements that could not be displayed in final form. Network solutions, radio systems, software for tele network operations, etc. On monitors at the stand visitors could see a combination of text, sound, animated images and video, and they could also go through demonstrations according to individual interests.

### Drawing card

This way of demonstrating complicated systems and products aroused keen interest. Competitors visiting the stand concluded that it was a technique to be adopted.

Ericsson's real drawing card at the stand was naturally the new pocket phone DCT900. This had its world debut at the fair in a major



DCT900 was the big attraction at CeBIT. The Hannover fair installed a system with 90 pocket phones hooked up, in the first phase. Among the 2,300 registered visitors at the Ericsson stand were many who were drawn by this real novelty. The CT3 system also aroused a great deal of attention in the media.



This year the Ericsson stand had a new design in blue and white. There was information about Ericsson's entire range of systems and products in tele and radio communications, all under one roof



Gustaf Lagerberg from EBC was again coordinator of the group's activities at CeBIT this year.

setting, as the arrangers of CeBIT were inaugurating their system, which is the first major commercial event using the so-called CT3 technology. There were many visitors to the stand who tested the small phones.

DCT900 was shown in its right setting, Ericsson Business Communications' MD110. It was as a complement to the business switches that the technology was launched. Among the business switches, Ericsson also displayed

new solutions for the smaller and medium-sized companies, small switches in the BusinessPhone series.

On the radio side were shown Ericsson's various analog and digital mobile phone systems, of course. There was also the countryside so-called "Wide Area Paging" - people pagers for wide areas. DACS, Ericsson's new mobile radio system, is the result of collaboration with General Electric in the U.S. Mobitex

and HotLine were also displayed on the radio side.

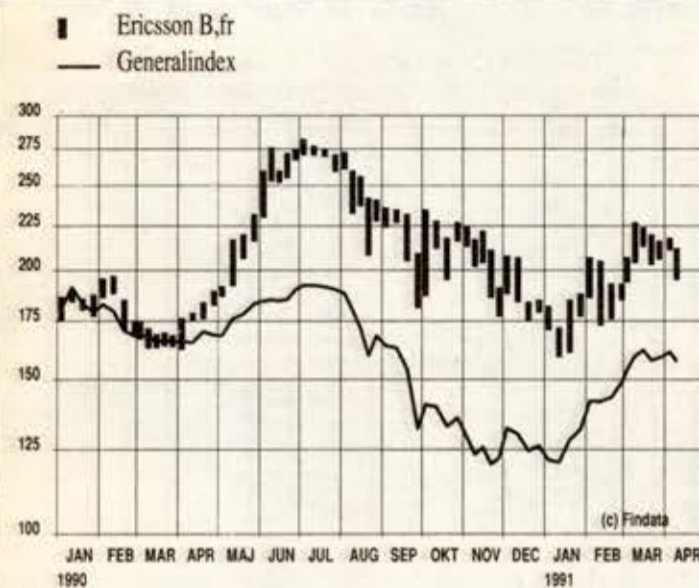
In conjunction with CeBIT, Ericsson Telecom went out with ETNA, a total concept for transmission in public networks. Among other things, ETNA is designed on fiber optics and "Digital Cross Connects." An important aspect is the software for guiding and maintenance of the network. At CeBIT, the entire family of such software was on display. It is generally felt that

Ericsson's new emphasis at CeBIT brought the point home. Among the huge number of visitors there were a number of important customers and prospective customers. The German minister for post and telecommunications spent an unexpected long time in Ericsson's stand and his visit was followed later by several other important contacts.

Compiled by:  
Lars-Göran Hedin

# SHAREWATCH

## Performance of Ericssons B free shares in comparison with the general index



## ERICSSON SHARES

Date	Mutual Fund		Share Savings Fund	
	Share price (SEK)	Assets (MSEK)	Share price (SEK)	Assets (MSEK)
1988-12-31	135	52,2	343	56,0
1989-12-31	304	94,1	825	77,1
1990-12-31	317	86,4	86	65,6
1991-03-12	367	99,0	101	75,9
1991-04-05	378	99,8	101	74,7

Share prices for March 1991 is based on a stock of 213 kronor and a convertible quotation of 393 percent.

## Loans on mutual savings

As of April it will be possible again to borrow against holdings in Ericsson's mutual fund.

Loans will be given covering up to 100 percent of savings, a maximum of 1,200 kronor per month. Interest on loans for 1991 are fixed at 13.56 percent, with amortization in four years.

Registration and loan applications as well as further information can be had from fund representatives or from Ericsson Finance.

### Extra deposit in mutual fund

According to a government proposal, mutual fund investors can make two extra deposits above the permitted 1,200 kronor per month.

The extra deposits should be made during the period May-June 1991 and February-April 1992 with a combined total of 5,000 kronor per period.

## Shareholders in Telefonaktiebolaget LM Ericsson

Shareholders are invited to the annual general shareholders' meeting on Tuesday, May 7, 1991, at 5 P.M. in the Stockholm Concert Hall, at Hötorget. Shareholders wishing to parti-

cipate in the meeting must be registered with the Värdepapperscentralen, VPC AB (Swedish Securities Register Center), not later than April 26, 1991. Shareholders, whose shares are

registered in the name of an agent, must temporarily be entered in the share register not later than April 26, 1991, in order to participate at the meeting.

In addition to the above-mentioned requirements, shareholders shall give notice of attendance to Telefonaktiebolaget LM Ericsson, Corporate Legal Affairs, S-126 25 Stockholm, Sweden or telephone +46 (8) 719 34 44 or +46 (8) 719 44 98 between 10 A.M. and 4 P.M., not later than May 2, 1991.

In order to participate in and to vote as a proxy on behalf of a shareholder at the meeting, a power of attorney must be presented.

Welcome!

### SHAREHOLDER REGISTRATION

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

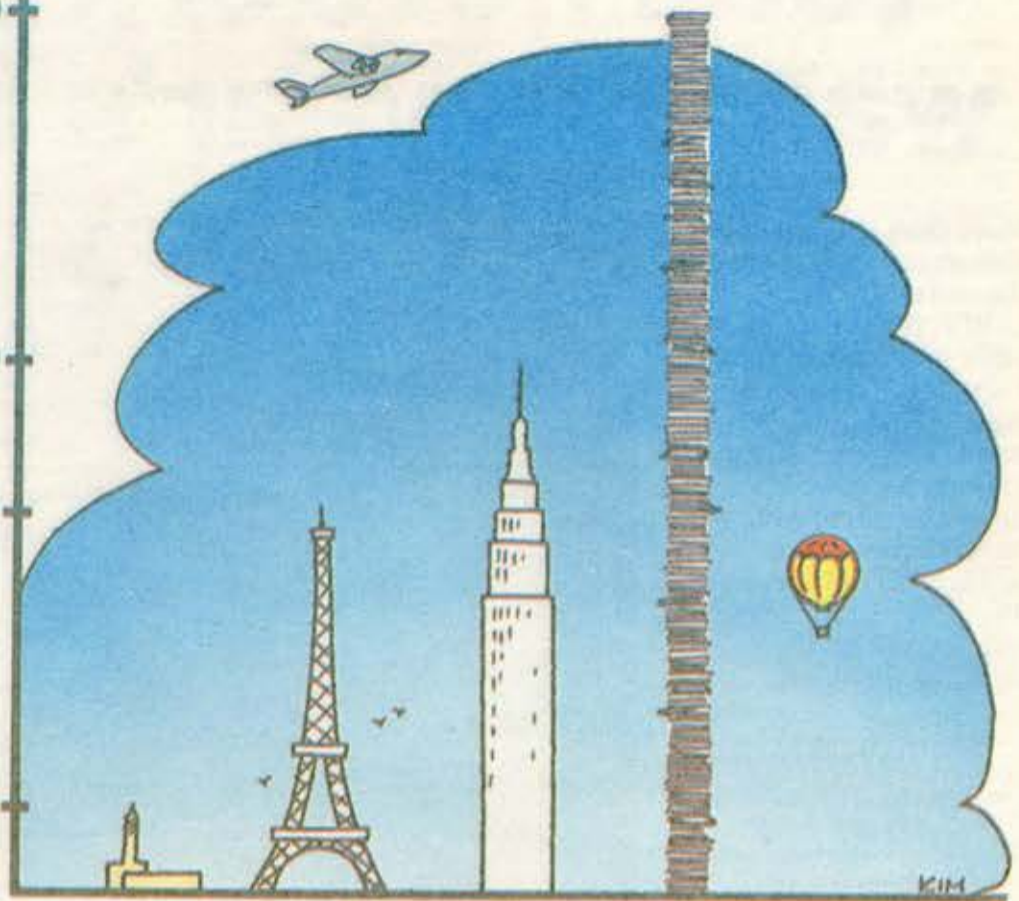
Address: \_\_\_\_\_

Meter  
750+

449+

321+

72+



# Annual report reaches new heights

Ericsson's 1990 annual earnings report is just being distributed. It is not only consoling reading for shareholders but also beautiful to look at. This year a lot of toil has gone into giving it a new and "prettier" design. Distribution of the report is the finale to an undertaking that involves hundreds of people.

The year 1990 was one of change for Ericsson. The group got a new president and an entirely new organization was presented. For shareholders, 1990 was the year when the stock price took off like a rocket in the spring and edged slowly downward again with the coming of the fall, as a result of

the upheavals in the Persian Gulf. It was also the year when every share was "split" into five so that the price could reach a level that would stimulate increased trading.

The report on this eventful year reflects also a lot of changes. In the report for 1990 it is not only the design that has changed.

The earnings report has also changed in comparison with other years—in large part a reflection of the new organization. Earnings reports for the various business areas' operations are now more closely interwoven than before.

Producing an annual report for a company as big as Ericsson is something of a mammoth project.

There are lots of people involved in gathering figures and basic matter. The text is composed meticulously and undergoes many

critical revisions before being finally approved.

All this toil and care has its reasons: The annual earnings report is the group's foremost showcase for investors the world over. It takes an entire year before it becomes outdated as a summary of what Ericsson is.

This year's production resulted in a couple of trailer trucks filled with 55 tons of annual reports. The project leader for the task this year, Johan Fischerström, has singled out a couple of amazing facts:

"If you put all the reports in a single file, you will have a stack 750 meters high," he explains. "If you remove the mast on the Empire State Building and place the Eiffel Tower above it, Ericsson's stack will be higher."

"On the other hand if you want use the reports for wall-papering, you can cover a wall that is four meters high and 164,000 meters long. Putting it another way, if the Berlin Wall were still around, you could have papered it over with Ericsson information..."



The first 600 annual earnings reports are being sent out.

# Ericsson in 1990

## - some key numbers

### Highlights

	1990 MSEK	1989 MSEK	Percent change
Net sales	45 702	39 549	16
Order bookings	49 371	42 045	17
Order backlog at year-end	30 415	29 426	3
Income before taxes	4 855	3 715	31
Adjusted net income per share after taxes paid, - SEK after full conversion	15,33	11,67	31
Adjusted net income per share after paid and estimated deferred taxes on timing differences, SEK	14,66	11,06	33
After full conversion	14,24	10,24	39
Dividend per share, SEK	3,50*	2,80	25

\*For 1990, proposed by the Board of Directors

### Sales to external customers, by Business Area, %



### Geographic distribution of sales, %



\* of which Sweden 12 (16)

We have compiled this summary of the most important economic data from the 1990 annual earnings report. It shows what a successful year 1990 was for the group and how the combined business areas contributed to the record earnings.

Ericsson has 70,000 employees in operations in 100 countries. The parent company's share capital on December 31, 1990, was over 2 billion SEK, coming from 205,729,083 shares at a nominal value of 10SEK. Of this, 24 percent was held by shareholders in countries other than Sweden.

Investments in research and development during 1990 rose to 4,901 MSEK, corresponding to 11 percent of net sales. Total technical development costs, including costs for adapting systems and products to specific markets, rose even more sharply, amounting to 7,874 MSEK, corresponding to 17 percent of net sales.

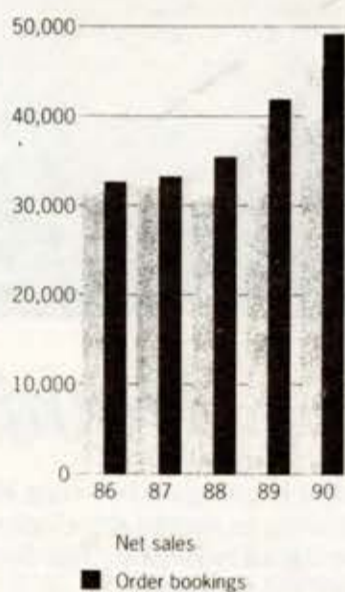
In Ericsson's new organization for the '90s, customers will be dealing with stronger local companies, which represent the entire group. At the same time, the executive leadership has been strengthened. The six business areas have a global responsibility for development and supply of its respective systems and products.

### Profits up 31 percent

Consolidated income before taxes rose 31 percent, to 4,855 MSEK (3,715 MSEK in 1989). Of this amount, net capital gains on the sale of shares and fixed assets accounted for 194 MSEK.

Nearly two-thirds of Ericsson's operations are in Europe. A substantial installed base of the AXE switching system for public telecommunications, the mobile phone systems and the MD110 digital business switch is being rapidly expanded. There are long-

### Net sales/ Order bookings, SEKm

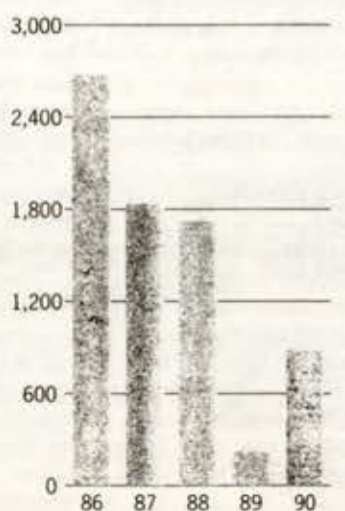


Sales increased 16%  
Order bookings rose 17%

term general purchase agreements covering continuing deliveries in many of the countries.

Italy is Ericsson's largest single market. The Cable and Network

### Cash flow before external financing, SEKm.



Cash flow was positive, amounting to 854 MSEK.

Business Area has also experienced strong growth there. The market in which Ericsson has grown most rapidly in recent years is Spain. Sales in the Swedish market amount to only 12 percent of the corporate total, compared with 16 percent a year ago.

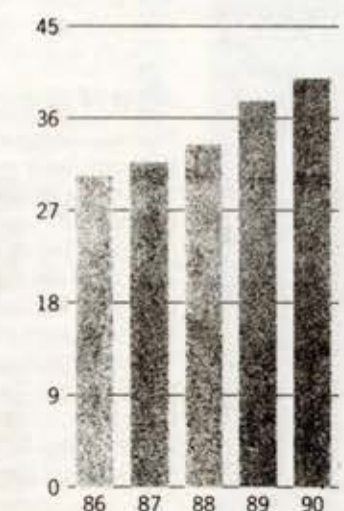
### Strategic successes

The 1990 strategic successes in Germany are also important for continued expansion in Europe. During the year we got an order from Mannesmann Mobilfunk for mobile telephone systems, and the German Bundespost Telekom administration chose Ericsson as supplier for digital transmission equipment. The establishment of a new research and development center in Aachen is also of major importance.

### All EC countries

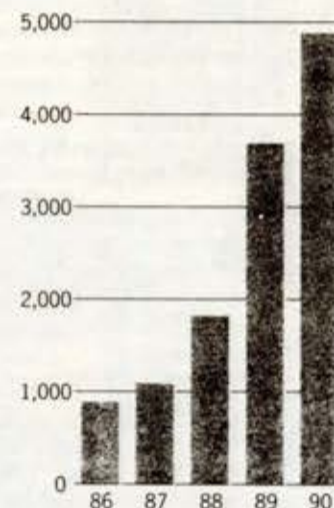
Ericsson has had operations in all countries within the European Community, EC. With this presence, it is well-prepared for the opening of the single internal market in 1993. Sweden's anticipated future membership can

### Equity ratio, %



Equity ratio continued to rise in 1990, increasing from 37.8% to 39.3%.

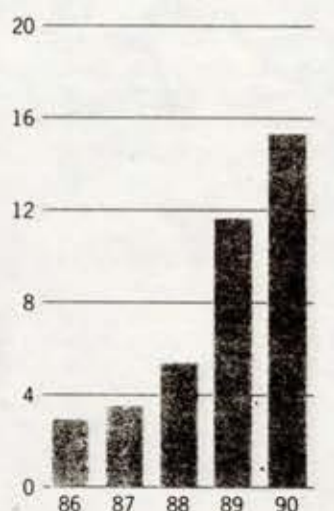
### Income before taxes, SEKm.



Pretax income gained heavily in 1990, reaching 4,855 MSEK, an increase of 31% compared with 1989.

further strengthen Ericsson's position. Ericsson will continue to have a strong role in European research projects, most notably in RACE (Research in Advanced Communications for Europe),

### Adjusted net income per share after actual taxes, SEK.



Net income per share rose partly as a result of improved profits, partly as a result of the continued reduction in relative tax payments.

which is focused on the development of broadband communications.

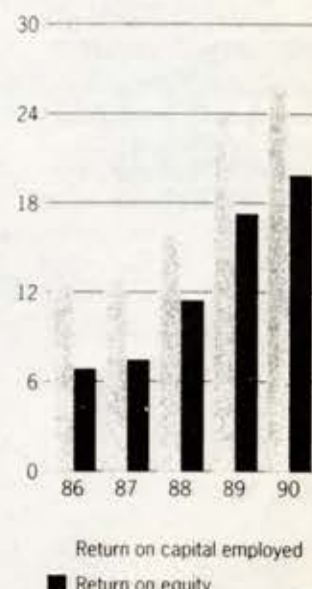
### North America

The joint adventure with General Electric has developed favorably and has created improved prospects for mobile telephone and mobile radio systems operations.

It has provided supplementary technology, an industrial base that permits production for both the U.S. and export markets, and an enhanced market presence in the U.S. In 1990, Ericsson's market share for mobile telephones increased notably.

Ericsson was also highly successful in the public telecommunications field in the States. Orders on hand constitute a good base for gaining the 10 percent share of the market for local exchanges that was established as an initial goal.

### Return on equity and capital employed, %



The yield on fixed capital increased from 17.5% in 1989 to 20.4% in 1990. The yield on operating capital rose from 23.7% to 25.9% during the same period.

# Boundless collaboration when the world equips for broadband

Among the world's telecom companies there is a gearing up before the introduction of the future broadband system.

It means being prepared when the big moment comes. Ericsson is well ahead internationally. Developments in opto technology are moving fast and competition on the world market is tough.

The future is built on opto technology. It is opto technology that will determine tomorrow's integrated broadband, the so-called B-ISDN, Broadband Integrated Services Digital Network.

In a few decades we will have a single cable at home for TV/video, computer, music equipment and telephone. The fiber optic will be able to transmit text, voice, data and images simultaneously and at unimaginable speeds.

The broadband network is popularly called the electronic highway of the future. The highway is made up of fiber optic cables. In the future, it will be all about fiber optics.

## New infrastructure

The optical broadband network will build the world's new infrastructure, dramatically develop communications possibilities and bring people closer to each other.

All over the world there is a race on to see who will be the first and the best in the development of broadband networks. Giants like NEC, Fujitsu, Alcatel, Northern Telecom and Siemens are in the running. Ericsson has many challengers.

## Standards

In the future broadband network all types of information can be channeled, voice, image, data in the form of ones and zeros. For there will be standardized interfacing that makes it possible for different types of equipment and connections to meet and make transfer of all types of information possible.

It is the standardization commissions like CCITT, the International Telegraph Consultative Committee, and ETSI, the European Telecommunication Standard Institute that determine the standard for the future European network. As far as we can see today it will be a matter of three standards in the world—for the Far East, for Europe and for the U.S. A single world standard seems distant.

A research center for fiber optics has been established in Kungens Kurva in the area of transmission. Here, Ericsson cuts out its path into the broadband jungle.

A new generation of opto components is needed for fiber optics. The research center in Kungens Kurva works closely with Ericsson Components in Kista for today's and tomorrow's components solutions. There is a constant transfer of know-how between them.

At Cable and Network in Sundbyberg, a Research Center has been set up for long-term strategic development of fiber and fiber-based network material.

## Unlimited capacity

In itself fiber, practically speaking, has unlimited capacity. Electronics is the limit and that is accomplished when light impulses should be rapidly produced.

The trend is to connect the light (switching) to reduce the conversion between light and electric signals. Much higher bit speeds can be switched without the signals being distorted.

Complexity in the system increases. It is then up to the self monitoring intelligent system, which repairs itself. A certain number of problems could linger in the system without traffic being obstructed.

If, for example, a component is damaged, a reserve card is connected. If a pneumatic shovel plows into a cable there is an extra connection ready to be taken up.

The biggest obstacle in the development of infrastructure is perhaps not a technological but a political one.

Telecom administrations, for example, do not readily welcome video companies, and vide companies do not give telecom administrations the right to send out video signals. It takes time to change cables and similarly it is expensive to build an infrastructure.

Text: Inger Bengtsson



## 'Nothing is better than optic fiber'

Close collaboration is going on between Ericsson Telecom and Ericsson Components to secure development of opto technology for tomorrow's broadband network. One does not think much of business area limits at this point.

Ericsson's fiber optic transmission system for tomorrow is being developed at the Kungens Kurva research center. A number of components and end equipment will be connected to optofiber to make the broadband network possible.

"There is nothing that can be better than optofiber as a transfer medium. We already know that now," says Hans Eklund, head of the Fiber Optics Research Center in Kungens Kurva. Practically speaking it has endless capacity and will never be obsolete.

## A bit of history

Ericsson began with opto for transmission purposes back in 1974.

"It was a little playpen at the beginning, as it should be," says Hans.

Things began in serious in 1980, at the same time that Hans Eklund went over to the newly started transmission division. Several field tests were conducted with the Swedish Televerket authorities in, among other places, Saudi Arabia for 34 Mbit systems. At the same time product development was started. At IM, the Microwave Institute, fiber development had already begun, back in the '70s.

The technology was transferred at an early stage to the materials lab at Ericsson and later to Siebert's Kabelverk, currently Ericsson Cables. At IM they were studying laser components and detectors for 34 Mbit systems

for a number of years then. The technology was then shifted to RIFA, currently Ericsson Components.

The following year product development was begun on the 565 Mbit/s single mode system.

## Bold proposal

It was Components' president Bert Jeppson, then head of technology development in the transmission division, who proposed that we should conduct a field test with Televerket with the new single mode technology. The technology was difficult and rare.

An inquiry even came from the U.S. about development of the 565 Mbit single mode system. We invested and development was on the way.

"That was the start," says Hans. "When we supplied the equipment we were the first in the world with the system."

The Fiber Optics Research Center in Kungens Kurva today conducts applied research - design and evaluation of components for fiber optic systems. In Kista, under division manager, Tsviatko Ganev, they manufacture and develop opto components, laser modules for transmitters and receivers.

"It is important to distinguish between research and pure product development," says Hans. "It has to do with different time perspectives and different priorities."

## Fiber technology in new research center

Cable and Network Business Area is building a research center for fiber optics in Sundbyberg. There they will take charge of the long-term strategic development of fiber and fiber-based network material.

Ever since 1982 there has been a unit for the development of fiber and fiber cable in Sundbyberg. But one never foresaw that developments could move so fast.

In 1986, we were the main supplier of optic cable for Televerket. This necessitated moving cable manufacture to Hudiksvall because of the tremendous growth.

"We have continued to work with a process for fiber production together with the Institute for Microelectronics, IM, in Kista. That collaboration ended in 1990," says Per-Erik Jonsson, division manager for Network Products in Sundbyberg.

## New direction

"What we accomplished with IM provided the base for the new research center that we are setting up now in Sundbyberg. We will administer and develop our fiber know-

how with a new direction." The new research center is being built on the site of the old high-voltage lab. It will be ready in the fall of 1991.

"Manufacture of single mode fiber has been put aside. There are now standard single mode fibers on the market and we do not need to use our resources to manufacture that."

## Fiber network expansion

New application areas for fiber are, for example, reinforcement fiber. There is also network material within the business area and as such we foresee an expansion for fiber network.

The focus was previously put on long-distance networks. Now, fiber networks will be closer to the subscriber. How do we resolve the network structure in offices, schools, universities and smaller groups, etc.? We need new network solutions for that as well as new fibers and fiber components.

"It is crucial for Ericsson to be part of the rapid development also in the fiber area. New players are popping up and we know for sure that we won't be working unchallenged."

At Ericsson Cable's new research center they are investing in research and development in the future glass technology for the production of optofibers. Photo: Thord Andersson



Hans Eklund, head of the Fiber Optics Research Center in Kungens Kurva, together with Per Andersson in one of the labs in Kungens Kurva. Photo: Anders Anjou.



Patrik von Matern, Ericsson Telecom in Kungens Kurva, and Anders Wästerd, Ericsson Components in Kista, work together on the modern opto technology. Photo: Maria Petersson

## About opto and fiber technology

Fiber optics is the new technology that opens up enormous possibilities when it comes to transferring information.

## What is fiber optics?

We know about optics, in combination with light and light beams, the old technology of sending messages with light beams and reflections of the sun.

Instead of transferring phone calls with electric signals via a copper conductor in a cable, the call can now be transferred via a light signal through a thin thread of glass - glass fiber or opto fiber.

This has become technologically and economically possible thanks to the fact that LASER has good enough properties to function as an optic transmitter. We

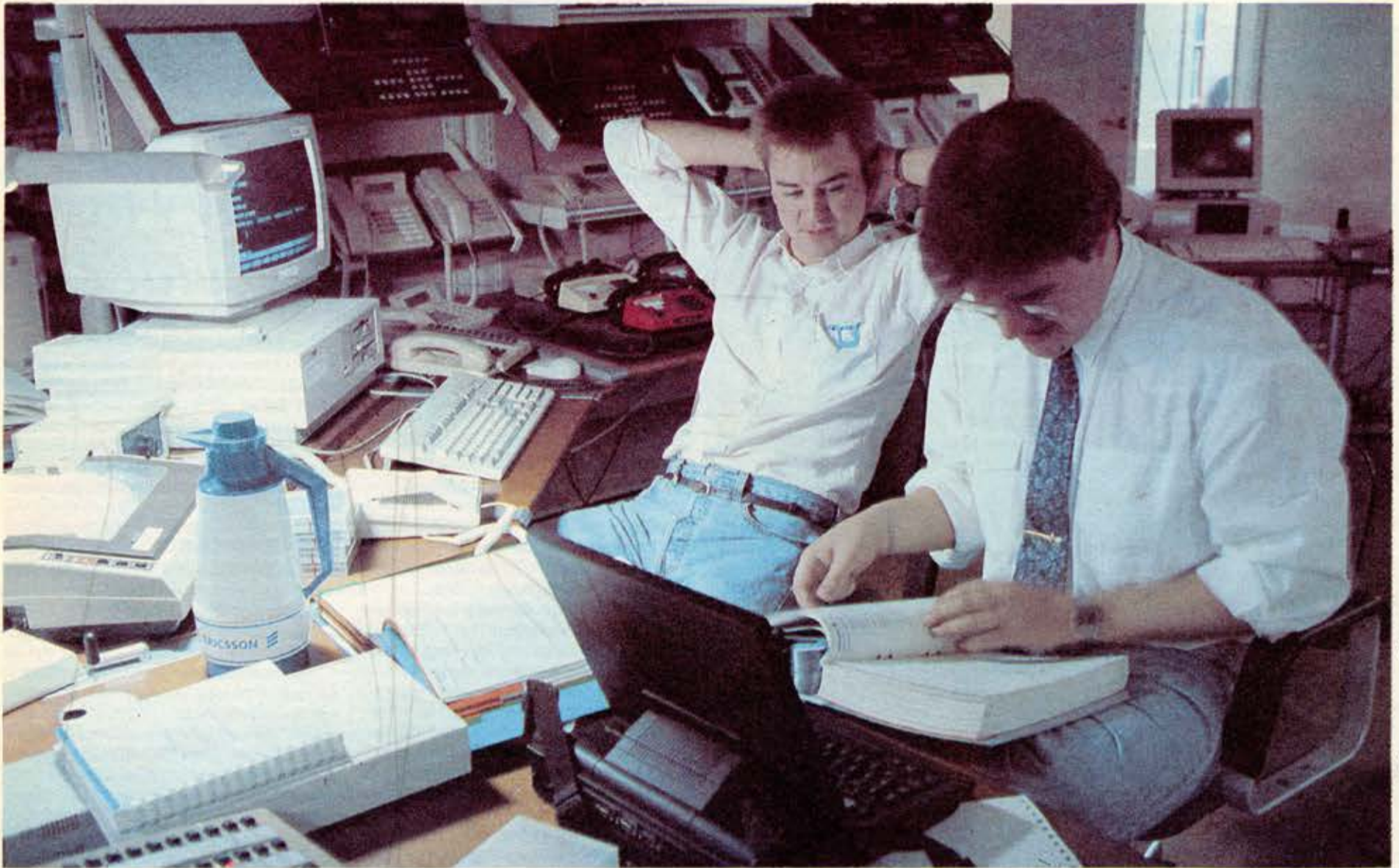
produce optic fiber with such clean glass that light is not blurred very much. An opto cable on the surface looks like an ordinary cable but it has conductors of glassfiber instead of copper.

## Why opto?

Opto technology provides the possibility for much larger transferring capacity than what copper cable can offer.

Even with the opto systems today capacity is about 100 times compared with ordinary paired cable and 10-100 times larger than coaxial cable. Moreover, optofiber is not sensitive to electrical signals.





Many are the nights that workers at MIPSC are called in to track down problems and correct them so that malfunctioning switches can function as they should next day. A feeling for service is a must, as well as an analytic approach in combination with a high stress threshold and, naturally, product knowledge.

## Always ready – night and day

Always prepared, this is an aspect that scouts and firemen share with systems specialists at Ericsson Business Communications in Sundbyberg.

The systems specialists work in what is known in daily parlance as "MIPSC," the business area's international support unit. It is the systems specialists' knowledge and experience that subsidiaries the world over offer their customers as a conclusive guarantee for instant repairs if there should be a breakdown in their telecommunications system.

MIPSC stands for Maintenance Installation Production Support Center.

"This is a built-in concept in the Ericsson world," says Anders Bylund, head of MIPSC for the business switch MD110. But when we speak with new customers we refer to ourselves as the International Support Center, he adds.

That says more about our activities – to track down and correct software problems in the MD110 and the different support systems. Ericsson subsidiaries turn to this unit for fast help with the most difficult technical problems in customers' systems. The subsidiaries handle simpler problems themselves in their Field Support Centers, FSC.

### Most experienced

Systems specialists should also be – and also are – the most experienced and advanced MD110 problem solvers within the business area. On average, a total of nine systems specialists have been working with the system for seven years, almost as long as it has been on the market.

"We always work through the Field Centers," says Anders. "We have support agreements with the subsidiaries, which in turn have service agreements with customers. The agreement allows for round the clock service.

### Guaranteed answer

All calls during office hours are guaranteed to be answered.

After office hours the systems specialists take turns in doing emergency duty, two persons every week. They always have a mobile phone with them so they can always be reachable.

"The field centers call our emergency number, which then goes through a monitoring company. In turn, they call up the person on emergency duty. We guarantee to return the call within an hour and that someone will be at MIPSC within two hours," Anders continues.

The agreement also calls for a systems specialist to be sent to the customer within 24 hours if the problem with their system is really serious.

"As of now, we do not have to

make too many calls. At most it amounts to about ten times a year. But when it happens, it goes real fast."

"The last time we got a call around 12.15. At 3, a man was aboard a plane bound for Portugal," Anders recounts.

He himself worked as a systems specialist when MD110 was an entirely new product and he remembers how there was always someone out there ready to handle repairs.

"The fact that there are so few emergency calls is because MD110 is such a stable product and that the competence of the field centers has improved," says Anders.

Nevertheless, MIPSC participates to a great extent in planned assignments out in the field.

### Solving problems

System specialists solve the bulk of the problems from Sundbyberg.

"When a problem reaches us, we give it priority working in hand with the subsidiary in question," says Anders. When we determine the priority it is important for us to know the commercial consequences of the problem, for the customer and for us."

"Besides the systems experts there are three additional persons in the unit, Problem Managers, whose task is to see that the problem is tackled in the right way. It is not always the case that the most technically problematic situation has the highest priority," Anders points out.

Highest priority means that a temporary solution will be provided within 24 hours.



Anders Bylund manages the shift work at MIPSCen.

"We ask questions – the right questions – and we go into the customer's plant via modem and gather more information, different alarms etc.

"Since as a rule the system is in operation, the systems specialists cannot test various solutions in the actual system. Instead, they use a reference system – at MIPSC there is every hardware and software found on the market – to simulate the traffic in the affected system.

Half of all the problems that are reported reveal, however, that customers were not handling the system properly.

### No common problem

What is the most common problem?

"The problem is that there is no common problem," says Anders, with a laugh. "In that case we could easily replace MIPSC with a computer-based expert system.

"On the contrary, the problems that cause the malfunction for the

user appear to be similar, for example, a call from a certain connection is cut off," says Anders.

When the specialists find a problem, they apply a temporary solution, "a problem isolating measure," as Anders puts it.

MIPSC reports the problem to the administration department for MD110. They make a permanent correction, which is later included in a correction release.

The amount of work MIPSC has varies. Every time a new release is issued on the market there is a flood of work.

In order to be prepared when the release is issued the system experts all participate in the final phases of the field tests.

### Prevention

"We try to work on a prevention basis," Anders says. "If we get word on a specific problem from a market, it is certain that the same problems will arise in other markets also."

MIPSC informs the field centers about the problem and the solutions.

An important function for MIPSC is precisely to spread information, knowledge and experience that is accumulated there.

At the same time this means a challenge for the team at MIPSC. They must also continuously raise the level of their competence to carry out their function as the most advanced problem solvers. And that is a challenge they are ready to take on.

Text: Maria Rudell  
Photos: Maria Pettersson

# Spare parts to eighty countries

Would you buy a car that cannot be repaired and for which you cannot get spare parts? Presumably not.

In the same way, buyers of telecommunications equipment insure themselves for the very same things.

For Ericsson Business Communications, reserve parts and repair is handled from Karlskrona. The Service Parts & Repair department is located there.

Service Parts & Repair has existed in its present form since 1988. However, there have always been operations like this. The department deals with spare parts and repairs for products in the area of business communications.

"We work with all Ericsson Business Communications products, both new and old, stretching back even to the electro-mechanical switches," says Kenneth Michaelsson, head of the department, which today employs 11 persons.

The department works with end customers, through the local companies, distributors and agents in 80 markets.

It is extremely important for the department to work rapidly and to maintain a high degree of service. By giving fast and good service when something goes wrong a company raises its good will.

"Today we have five to ten days' delivery time for spare parts and repairs. Our target is to bring it down to three," says Kenneth.

However, it is also important for everyone to know about Service Parts & Repair so that people would know where to turn for help.

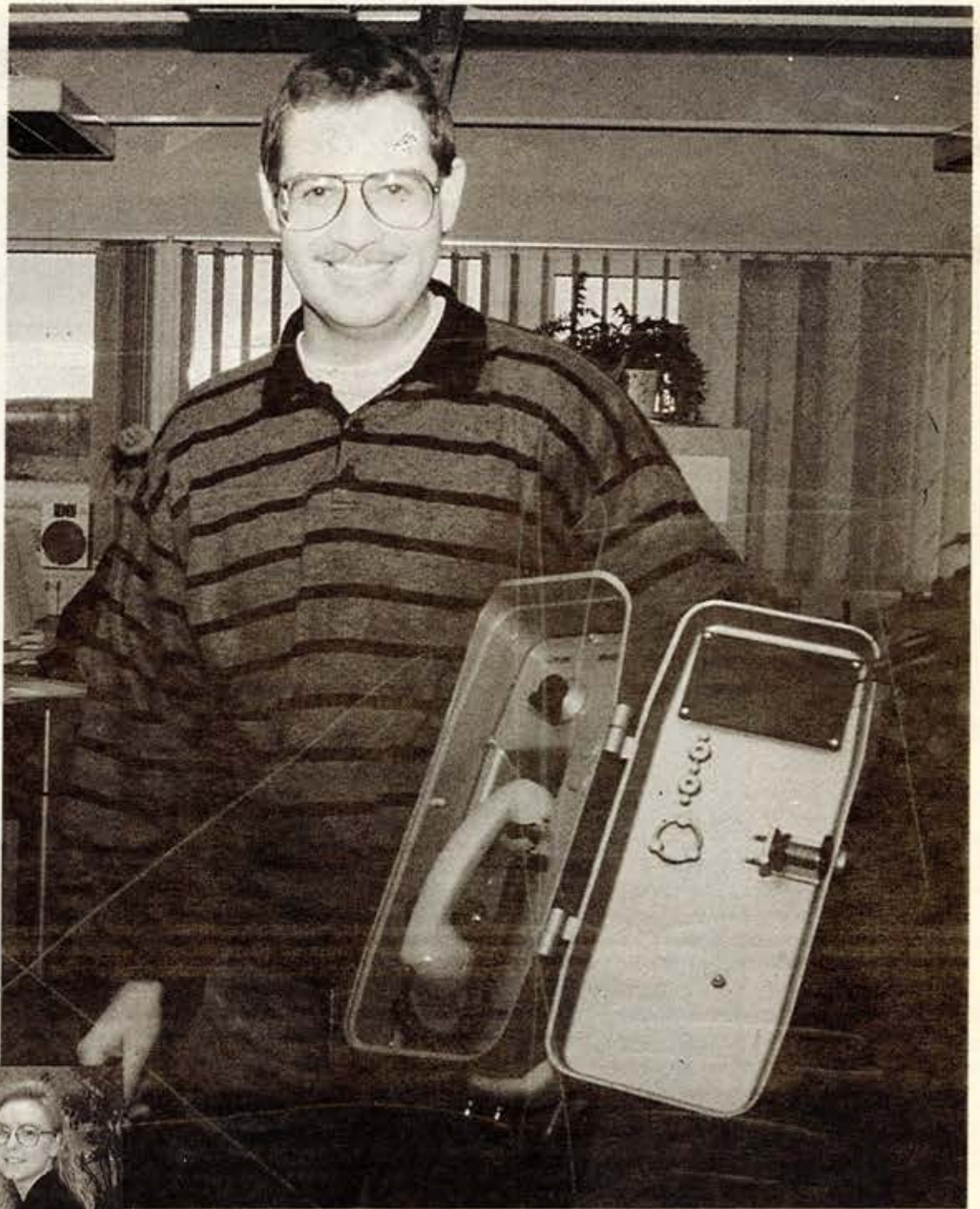
## Parts in operations

Kenneth divides the operations in Service Parts & Repair into two distinct areas, repairs and spare parts.

## *Service Parts & Repair - customers' future insurance*

"In order to meet short delivery times for repairs we have built up a B warehouse," Kenneth explains.

In the B warehouse are the repaired parts. When a customer sends in a part for repairs the department reaches for a corresponding part from the B warehouse and sends it immediately to him. The customer thus very rapidly also gets back an exchange unit. The incoming defective part is sent on by Service Parts & Repair for repairs in the factory where it was originally manufactured, and when the repairs have been made it is put in the B warehouse. What mostly comes in for repairs are



Every product that Ericsson has ever manufactured in the area of business communications must be backed up with spare parts by Service Parts & Repair. Kenneth Michaelsson, head of the department, shows one of the older products that was brought in for repairs.



Diana Svensson is one of the eleven employees at Service Parts & Repair.

telephone sets and individual printed circuit boards. In the event that it cannot be repaired or is not worth repairing, Service Parts & Repair turns instead to the spare parts.

## Spare parts

"We have in the warehouse most of what goes into a product," Kenneth says, "everything from components to finished articles."

Everything in the spare parts warehouse is new and unused, even if the parts belong to products that have long gone out of production. Despite this, Ericsson still has an obligation to customers to be able to provide spare parts for its products.

"When a product is discontinued, we figure out how many spare parts we want to keep in the warehouse," says Kenneth.

Sometimes, this can be a difficult decision. It should not be too few, and at the same time it is terribly expensive to have large quantities lying around. Warehouse inventory and disposal of pieces is carried out regularly.

"The older the product, the fewer the spare parts we keep in store," Kenneth notes.

Some really old products are not covered any longer in the spare parts warehouse. If a customer needs a part for such a product, Service Parts & Repair see to it that it is manufactured for him.

"Every time we need parts for old electro-mechanical switches we have to draw on production in one of Ericsson's factories in Brazil. We are lucky that it does not happen very often," says Kenneth, with a smile. "When it comes to such switches, we can mostly get by with a hammer and chisel."

## Contributes to quality

Service Parts & Repair is a part of EBC's quality control. When a part is sent in for repairs the department

feeds the cause of the problem into a computer system. Claims and the reasons for them are also fed in.

"We look at the collective input once a quarter, which we monitor for the technical department, product department and eventually the subsidiary," says Kenneth.

Dealing with guarantee matters is also part of the department's tasks. For new EBC products, the guarantee is valid for 18 months as a rule. Service Parts & Repair determines whether a defect is covered by the guarantee or not. The guarantee does not apply if the customer washed his phone in a bucket of water or if he pours a cup of coffee with sugar into his terminal. In that case - which is not at all unusual - the customer must either pay for repairs or buy a new one from the spare parts warehouse.

Earlier the department used to get in, for example, printed circuit boards for repair where no problems ever showed up. This problem has reduced now since the subsidiaries' competence in the subsidiary service departments has increased now that they have better equipment for diagnosing faulty parts.

Service Parts & Repair is an important unit, both before and after sales. It often deals with huge investments when a customer buys a communications system. Service Parts & Repair is a part of his insurance for the future.

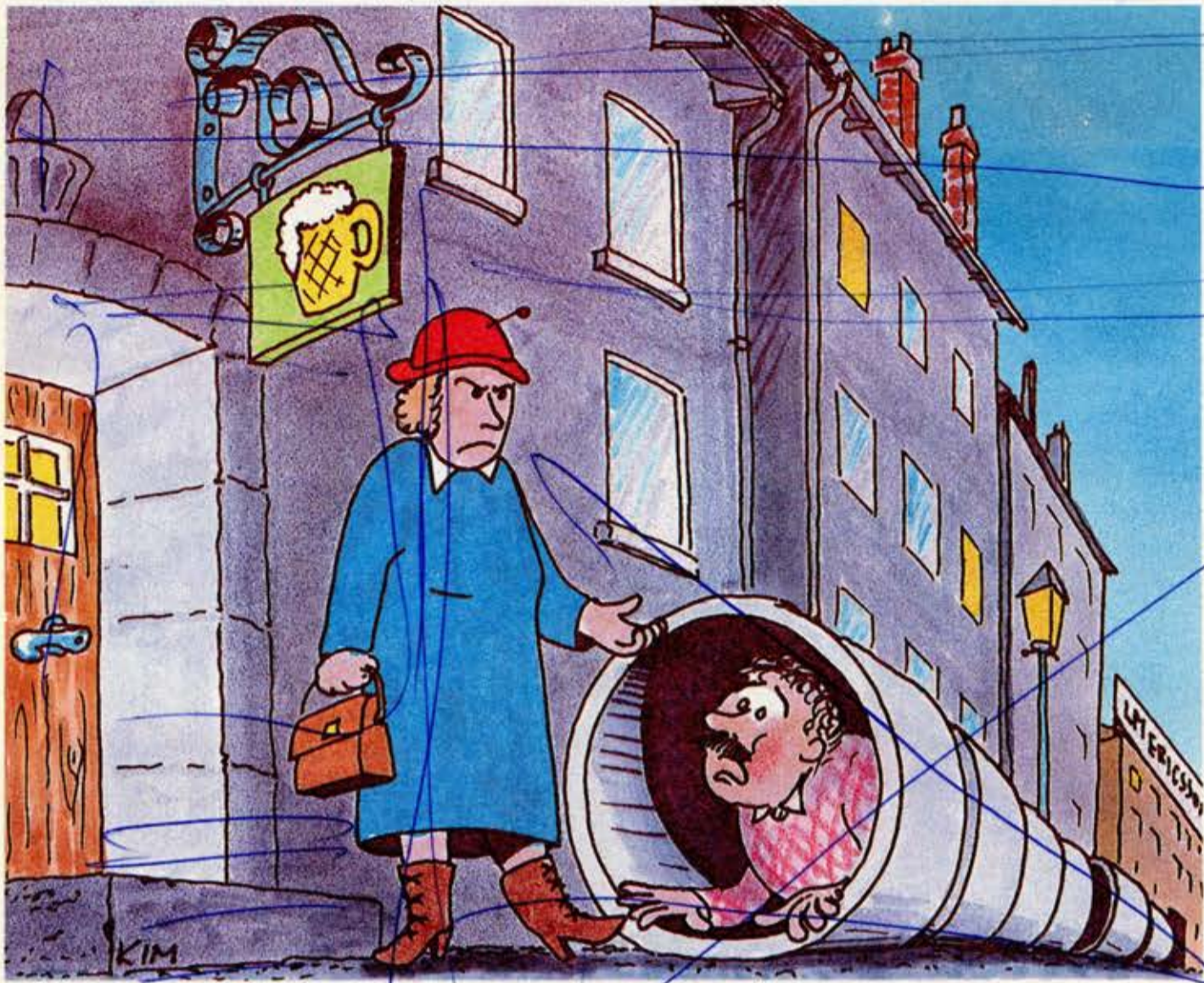
Text and photos: Maria Rudell



Half a year ago Service Parts & Repair moved to the same building with EBC's logistics center in Verkö, outside of Karlskrona. A closer link to distribution is important to achieving short delivery times. Lars-Ove Hansson, Fred Olsson and Arne Gummesson run the new warehouse.

Return address:

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## A sofa at CeBIT?

**L**ast month, the CeBIT fair came off at Hannover as usual. It is an exhibition of computer and telecommunication technology so large that no visitor could really cover all the ground and exhibits there. In a couple halls, each and every one the size of a football field, tele equipment was on display. It is an old truth that no-one likes a fair but few dare to be out of them. Can one think of any weaker argument for a company like Ericsson to invest tons of money in fairs like CeBIT or Telecom, which is now the second

**STOP PRESS**  
 BY LARS-GÖRAN HEDIN



largest exhibition of its kind. How many of the 45,000 visitors in Hannover were eventually customers, or even potential customers, to begin with? How many tele lines or MD110s were eventually sold?

Naturally, the answer to the last question varies considerably, depending on whom you speak with. Beyond any doubt, MD110 is precisely an example of the kind of product which, despite everything, can be sold through exhibiting at a fair. There is also evidence to support this. Understandably, at CeBIT the significant representation from Ericsson-Business Communications German company was clear proof of this.

But how is it with tele lines? How many of those who are involved with decision-making for tele lines visited Ericsson at CeBIT? And what impressed them most there? Isn't it really the case with the most important decision-makers that if they come to a fair like this it is their meeting with those who are most important that matters, not just showing the systems.

A really dedicated fair aficionado with whom I spoke recently made just that point. His clever suggestion is worth pondering over for a moment: Set up some sofas in a pleasant and attractive ambiance, have knowledgeable people available to inform and top Ericsson representatives there to receive – this would just as well provide for valuable exchange. This way the really initiated visitor would be spared all the exhibition glitter and instead can get the information he wants directly from the source. And Ericsson can cultivate the personal contacts that are usually the most important outcome of its participation in these fairs.

Combine the "sofa setting" with a smaller exhibition of products that are geared to the more common fair visitors – telephone sets, HotLine, MD110 in some form, etc. This way the exhibition area can be reduced by half or even to one-third and personnel costs could be shrunk correspondingly. A somewhat controversial idea, but nevertheless a cost-cutting tip in these times.

## Happenings on Tule Street

From the Swedish Kontakten No. 4 in 1946, we clipped this good story that already back then was an interesting anecdote. It was recounted by an old LM-er, Johan Linder, who was foreman in the old workshop on Tulegatan (Tule Street) and who retired in the mid-'30s.

“ At the turn of the century at LM there was an original Dalecarlian by the name of Johan Eriksson. At the time he was nicknamed "Dal-Jersker." He was a chubby and genial fellow, rough and ready

but good-hearted. At the corner of the then Badstugatan and Tegnégatan there used to be a restaurant. Dal-Jersker used to go there a lot, in particular on Saturdays, which in those times was pay day. But every Saturday Dal-Jersker lived with an element of despair. This stemmed from the circumstance of his wife customarily waiting for him outside of the workshop to control his weekly paycheck.

### Dal-Jersker's idea

One Saturday, Dal-Jersker decided to deceive his wife and pull himself away from her control. On this very day a row of large concrete pipes were placed beyond the

edge of the sidewalk on Döbelnsgatan all the way from Badstugatan to Tulegatan. This gave Dal-Jersker an idea.

When he came out from the workshop at midday on Saturday, he hid by creeping through the concrete pipes and then headed off gleefully on his stroll to Tulegatan. However, his joy ended there. His wife had taken up her position at the entrance to the tunnel. She had observed his maneuver and now she wanted to know how much he had earned during the week.

However, Dal-Jersker retained so much of his weekly pay that there was enough for him to drown his sorrows at the pub afterwards. ”

## A real 'hat-trick'

In the Swedish Kontakten No. 2 of 1949, S. Fröderberg recounted this story from an era when the century was still young.

“ Earlier at LM there was an adjuster who went by the name of Kalle. Once he bought a new hat, about which he was very proud. However, there was something wrong with the hat; it was too tight. The hat maker, though, had told Kalle that it would eventually stretch with wear. But to Kalle's misfortune, the very opposite occurred.

Every time Kalle hung up his hat on the rack there was some prankster in the department who put a layer of paper around the sweat band. And, of course, the hat shrank every time.

In the end, it sat on his head in such a way that Kalle actually had to hold it down every time he punched his card so that it would not fall off. It never occurred to him to suspect one of his colleagues as being behind the defect in his nice hat. How long the shrinking continued, however, the story does not say. ”

