


# contact

ERICSSON  PUBLICATION FOR EMPLOYEES WORLDWIDE

No.3 • 20 MARCH 1997



**Hedfors on the scene.** Bo Hedfors, President of Ericsson operations in the U.S., was obviously satisfied with Ericsson's exhibition stand at Wireless '97 in San Francisco. Kathy Egan, Vice President, Communications, in the U.S., agreed with Bo Hedfors that the exhibition concept, tested for the first time at Wireless '96, was a success.

Photo: LARS ÅSTRÖM

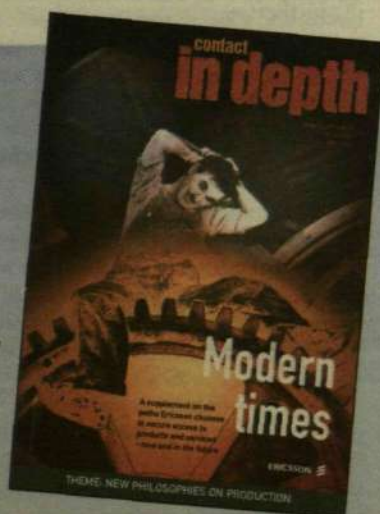
## Show Time in San Francisco

A major event in the American mobile telephone industry is CTIA's annual convention and exhibition, held this year in San Francisco, as "Wireless '97." CTIA is an industrial association of cellular telecommunications operators and suppliers in the U.S. Ericsson was a major participant at this year's convention in the City by the Bay, and its exhibition stands attracted large numbers of visitors.

Pages 8-9

### In Depth: Modern times

New philosophies in production are the focus of this Contact theme supplement. Read all about outsourcing, contract manufacturing and new concepts in purchasing and in-house production.



### Ericsson in Mexico

Mexico is showing signs of recovery from monetary crisis, and Ericsson is of course prepared to make investments in anticipation of a big-time "telefiesta" in Mexico.

Pages 12-13

### Wireless office access

Ericsson introduced a new solution for wireless office access, GSM Intranet Access, at the GSM World Congress held recently in Cannes, on the French Riviera.

Page 6



Timing and a joint approach are essential factors for being competitive on the market," says Giuseppe Spinelli, Technical Director of TMI, Tele Media International in Rome.

## A joint approach

**- to stay ahead of the competition**

**t**o further develop their business through a global offer, TMI has set up an international virtual private network. Ericsson got the assignment to support with new technologies, transfer of know-how and a range of services.

Establishing operation rapidly, with the right end-user services and with the aim to stay ahead of competitors, required a turnkey solution, based on vast experience and high-tech knowledge.

Mr Spinelli: "Ericsson was chosen as the supplier, being able to meet those needs. Strong worldwide support was also required. In a complex project like this, it was not of course all that easy to connect all nodes to get the first traffic through. Issues had to be solved between the different countries, companies and cultures. Gradually the TMI project was put together."

Mr Spinelli emphasizes the strengths of a joint approach.

Tele Media International (TMI), a subsidiary of Telecom Italia, has built an international virtual private network (IVPN) with nodes in fourteen cities worldwide.

### Six AXE switches

A network management center, located in Rome, is managed by Ericsson, who also planned, designed and built the network. The task was to get the network up and running in six months, providing the end-users with voice services. Simple structure and billing, efficient customer care are cornerstones in the TMI offering.

The network consists of six AXE switches and fourteen BMX nodes, connecting major cities in Europe, the US and Asia.

"A key issue in the IVPN project is timing. That turned out right due to the approach we followed with Ericsson. In my opinion, this way of working is more and more to be considered as a sort of partnership."

"We have avoided any particular customization of the project. The Ericsson platform gives us an advantage compared to larger operators also working on the domestic side. Our offer is purely international. And should we decide to adopt some special solutions, we can do that, because we do not have to integrate our network with others."

"We have taken the decision jointly

with Ericsson, to place the network management center at the TMI headquarter in Italy, where we have a lot of expertise, as well as having Ericsson here. This strongly supports the idea of a centralised management center."

### More traffic through the network

The center in Rome is now in operation and TMI is gradually passing more and more traffic through the network.

Mr Spinelli emphasizes the advantages of having all AXEs modelled after the same software. Different switches and softwares in different countries are a nuisance, hindering the operation.

"With remote methods we will save even more money."

"Another factor for success in the future is the two-layer architecture that has been chosen. That means we do not have to touch the switch once more when customizing the interface with the PABX customer network. Instead, we channel any problems that may occur to the BMX access layer. That is where we envisage around 90% of the customer problems. The BMX is interfacing all types of customers, and can cope with any type of configuration. Summing up, these are the most important reasons why we are going with Ericsson."

### Higher up the value chain

Today we talk a lot about working 'higher up the value chain', all of which will enable you as an operator to focus on your core business. What's your view on that?

"I foresee more co-operation in the future. Since we are a service provider, we should concentrate all our resources on customer care, from a technical point of view, and providing competitive services in the telecommunications arena."

"TMI was a company devoted to messaging and data services - not at all in the voice services, therefore lacking the proper skills in this area. In order to succeed to set up a network in six months, we needed a turnkey solution. Today Ericsson is managing the network as well as the voice services we are providing. In let's say, a couple of years, TMI resources should replace those being provided by Ericsson. Why is that? I still believe that for a longer time, in terms of partnership, we can consolidate with Ericsson which will play a fundamental role in that field."



Giuseppe Spinelli, Technical Director of TMI, Tele Media International in Rome.

TMI has set up an international virtual private network, allowing them to further develop their business through a global offer. Ericsson got the assignment to support with new technologies, transfer of know-how and a range of services.

To join forces when it comes to the marketing of services?

"Joint marketing means that we together can develop a lot of initiatives. In particular capitalizing on the general experience that Ericsson has working with many different operators. Consequently, without violating any privacy or confidential information of other companies, I think that all the experience that you collect from the various operators in terms of human experience is reflected in the manner you work. We feel we need to market our international services better than we do today. This is another important area of working together with Ericsson."

"This is an evolution mentality. In my view, a service provider has to have this mentality already from the beginning. The suppliers still tend to focus too much on the products, and in some cases, this has caused a lot of mistakes."

"The most important factor we see today is the time! If the timing is wrong, you will never succeed."

### • Why should the customers choose TMI?

"The winning factors, which means real seamless services, are competitive prices, a simple tariff structure, and a flat rate for all on-net calls, regardless of destination. Of course, with the possibility of getting a better price on the basis of the volume."

"TMI is offering voice services as a unique platform, in a unique organisation, with a unique contact point. And this is really something that provides differentiation in the marketplace."

### • Where do you see TMI in the year 2000?

"Up to now we are purely internationally oriented, which will of course change in the years to come. There are a couple of factors that will greatly modify the TMI life and its objectives. First, potential alliances with new partners."

"The second point, that also depends on the potential partner, is focus on the domestic market. There will be another phase where TMI will pick up some domestic market in which we intend to market our services."

"We are now developing our presence in some countries more consistently. The two major areas will be countries in Europe and South America. When our owners invest, we will immediately follow them. The international virtual private network makes that possible."

You are foreseeing a bright future ...  
"I think Telecom Italia has the capacity to attract a good partner in the business in terms of other carriers and service providers. Telecom Italia will play an important role in the year 2000, as a part of an alliance. I am convinced that there will be very few global operators in the world at the turn of the century. And I can assure you that Telecom Italia will play a major role in this market."

The IVPN will allow TMI to develop its business through a global offer, thus entering the competition among major new operators. Forming a business alliance, Ericsson supports TMI with new technologies, know-how transfer and high quality of services.

MY SPANGENBERG



**“Internal communications at Ericsson could be better, and the need is greater than ever. The status of internal communicators at Ericsson must be enhanced, and greater importance attached to their work,” says Johan Ljungqvist who has recently been appointed manager, Ericsson Internal Relations. He thinks that at Ericsson we should not only be world class in terms of products but also in our internal communications.**

# The key word is communications

**t**he need for internal communications is greater than ever, and this is why this area should be tackled in a professional manner. It is not only our products that need to be world class. My vision is that Ericsson should also be world class in internal communications. We're not there yet, but with the talented people we have at our disposal, it's only a question of time.

In itself, the establishment of a special post for this area is confirmation that senior corporate management are giving priority to internal communications. Obviously, as Manager of Ericsson Internal Relations, I cannot perform miracles on my own, but I sincerely hope that my presence will inspire Ericsson's skilled communicators all over the world. If we succeed in working towards the same goals, we will have made considerable progress.

The new "Communications Excellence Award" for fruitful communications initiatives is another way of showing the importance Ericsson attaches to this area.

Why are internal communications particularly important today? There are several reasons.

Ericsson is facing a completely new kind of reality – a real paradigm shift. Our competitors are no longer a limited number of familiar, traditional telecom corporations, and this means we have to adapt to new conditions. We are the market leader in telecommunications, and this gives us certain advantages if we play

are important. We have never had as many employees as we have today. More than 90,000 people are working for Ericsson, and that makes great demands on all of us who are working with internal communications, if we are to succeed in building a sense of participation and affinity.

In addition, we have a higher proportion of new employees than ever before. That means a large number of people who need to discover what Ericsson stands for. And our new recruits are more demanding than ever. The average age of our staff is going down, but their educational level is rising. More than 40% of all our employees have a least one university degree to their credit these days, and almost half our employees are under 30.

Today, all our employees expect to receive a great deal of information – and they are absolutely right. This means that effective internal communications represent a competitive advantage, since this is one way of enabling us to retain competent, well-trained personnel.

## 2005 must start at the top

There is a high rate of change today, and this situation is likely to continue. This makes it particularly important for everyone at Ericsson to know what is going on and what the company's policy is. Virtually every day people ask me how the 2005 project is going to be implemented and what is the best way of giving people a sense of commitment and participation. On the whole, my response is to say that this initiative must start at the top. If management does not play its part, employees are hardly likely to feel a sense of

our cards properly. If we take initiatives and show our strength, we will be able to lead our industry. But this means that we have to get the entire company apparatus to move in the same direction.

Ericsson's personnel structure is another reason why internal communications

participation. In other words, communications are not just something which concerns a limited number of professional communicators at Ericsson. A manager who is a good communicator and who gives priority to communications will have a committed and enthusiastic staff

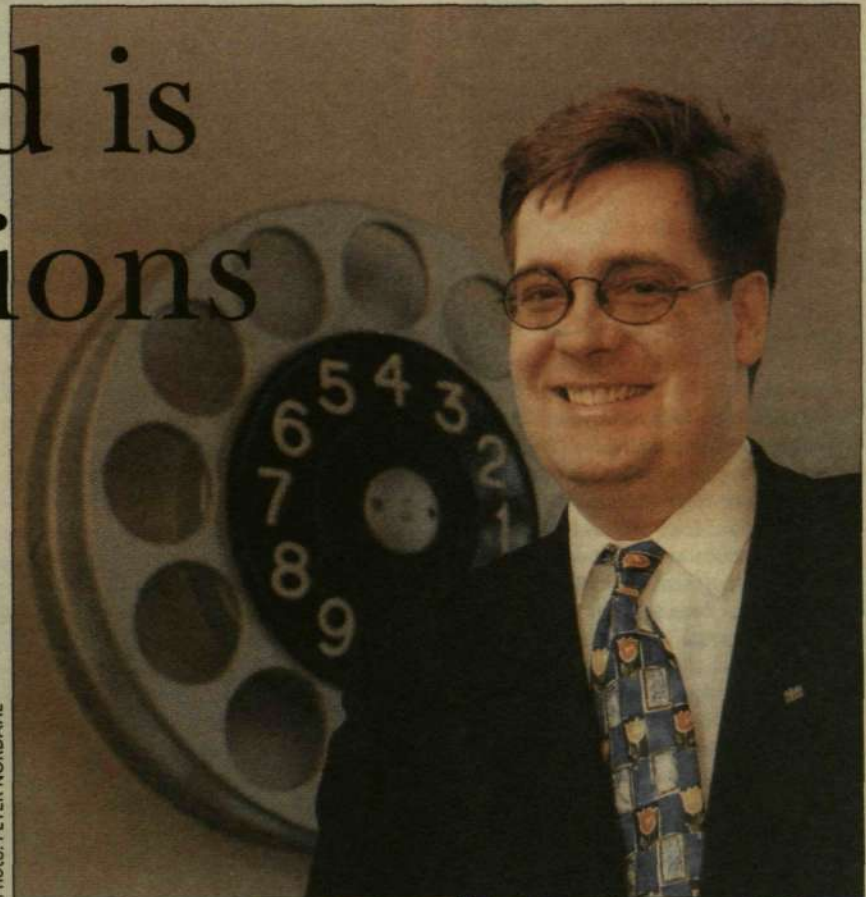


Photo: PETER NORDAHL

who will work more efficiently. In turn, participation leads to a sense of responsibility, and they are both essential prerequisites if Ericsson is to achieve its objectives.

Internet and intranet technologies allow us to seek information actively, not merely receive it passively. And the communicator's job is to ensure that Ericsson employees have access to good information.

## The importance of networks

One way of improving the quality of information is to make better use of networks and to utilize the good work that is already being done. Communicators in different Ericsson companies. It is of the utmost importance that we get to know each other better and see what others are doing. If we want outsiders to see us as one single company, we have to work as one single company at the internally.

There are networks at several different levels, but we must not be afraid of contacting colleagues at Ericsson who are working in the same area, but in another company or another country. It is always best to go straight to the source.

At the corporate level, I will be doing my best to provide good examples of internal communication activities or structure. There is no cause to reinvent the wheel in several different locations. Let us learn from each other and work together, without letting personal prestige mar our efforts.

We have several tools at our disposal. At the moment, Internet and intranet applications are somewhat uncoordinated at Ericsson. But there is infinite poten-

Johan Ljungqvist was appointed Manager, Ericsson Internal Relations on February 1. Johan comes from the Mobile Systems Business Area where he worked with market communications for the European standard mobile telephony business unit.

tial, and this means that we have to use these tools in a clever manner. It is very important that the intranet does not become a playground for people who know how to program html pages. That would be like confining authorship to printers.

In other words, both human networks and the intranet are important instruments. Another corporate tool is Contact, the magazine you are reading at the moment. It is particularly gratifying to note that Contact is notching up several new achievements this year – probably the most tangible is the introduction of our theme supplements.

There is a great deal of successful internal communications going on at Ericsson today, and there are managers who have developed effective ways of disseminating know-how and passing on information to their staff, inspiring them and imparting a sense of commitment. But I think we can do even better. I would also like to particularly commend our hundreds of professional communicators who are doing a great job, even if it is sometimes uphill work.

Let us work together to ensure that Ericsson achieves world class in internal communications.

**JOHAN LUNGVIST**

Manager, Ericsson Internal Relations

## contact

Publication for Ericsson employees worldwide

**Publisher:** Lars A. Stålberg, phone: +46 8 719 31 62

**Corporate Editor:** Lars-Göran Hedin, phone: +46 8 719 9868, memo LME.LMELGH.

**Editorial assistant:** Pia Rehnberg, phone: +46 8 719 7869, memo LME.LMEPRG. **Reporters:** Thord Andersson, phone: +46 8 422 0316, memo EBC.EBCTKAN; Inger Björklind Bengtsson, phone: +46 8 757 4454, memo EKA.EKAIBE; Anneli Krantz, phone: +46 8 764 1596, memo ECS.ECSANKR; Patrik Lindén, phone: +46 8 719 1801, memo LME.LMEPAL; Gunilla Tamm, phone: +46 8 757 2038, memo ERA.ERAGT; Lena Widegren, phone: +46 8 719 6943, memo ETX.ETXLAWN; Britt-Marie Wihdén, phone: +46 31 747 3662, memo EMW.EMWBMW.

**Address:** Telefonaktiebolaget LM Ericsson, HF/LME/1, S-126 25 Stockholm, Sweden **Fax:** +46 8 681 27 10 **Distribution:** Inger Bergman, phone: +46 8 719 00 69, memo: LMEBING

**Layout:** Paues Media AB, phone: +46 8 665 80 72. **Printed at:** Nerikes Allehanda Tryck, Örebro 1997 **Advertising:** Information and booking: Display AB phone: +46 90 17 79 50



## news briefs

### Total Internet solution for Telia in the U.S.

Ericsson will be shipping a total Internet and telecom services package across the Atlantic to Telia North America Inc., Telia's subsidiary in Manhattan in New York. This solution covers AXE exchanges for international telecom services, routers which support Internet traffic and Synchronous Digital Hierarchy networks.

"Telia aims to have its own capacity in the U.S. so that it can capture a major share of the international traffic," says Håkan Jansson, President of Telia North America Inc.

This system will enable Telia to steer Internet traffic from the United States directly into Telia's network in the Nordic and Baltic countries. Similar solutions have already been sold to Telia in Denmark, Norway and the UK.

In London, Ericsson has installed an AXE-TransLocal exchange which is now coming into operation for Telia UK Ltd. This enables Telia to offer telecom services to companies and private customers – including national and international services. The exchange combines all the functions required for local, transit and international traffic.

### Large order for global mobile satellite system

ICO Global Communications has signed a contract with a consortium consisting of Ericsson, Hughes Network Systems Inc and the NEC Corporation for delivery of the infrastructure for ICO's worldwide mobile satellite network. The consortium is headed by the NEC Corporation.

The first contract is worth around SEK 4.5 billion, of which Ericsson's share is SEK 600 million. As the network is extended to provide greater capacity and functionality, it is expected that the contract will expand to SEK 7.5 billion over a ten-year period, making Ericsson's share SEK 1.1 billion. Under the agreement signed in Tokyo, the consortium will be responsible for design, development, manufacture, installation and testing of ICO's base network (ICONET), which consists of 12 satellite access nodes (SAN for global coverage, two network monitoring centers and other equipment).

The package includes advanced antenna systems for space-earth communications. Each satellite access node is connected to the public network or the relevant country mobile networks. The 12 nodes are interconnected via digital high-speed lines.

### GSM to India

Ericsson and Motorola have won a joint order for GSM mobile telecom systems in India. The buyer is Reliance Telecom, a joint-venture company comprising the Indian Reliance Industries and the American Nynex corporation. This project will go into operation in the spring of 1997 and will cover seven areas in various parts of India. The contract is for delivery, installation and other services over a five-year period.

## Unique cooperation with the higher education sector

The rapidly expanding mobile telephone industry needs more engineers. The world's leading companies in the mobile telephony industry have now agreed to form a consortium in the United States which will arrange tailor-made university programs.

The Global Wireless Education Consortium (GWEC) is a non-profit organization which will help well-known universities and colleges to renew their educational programs in step with changes in the industry.

The aim is to increase the quality of university programs and to give the entire wireless communications industry access to more engineers. "Our mission is to increase the quality and the quantity of wireless technicians and engineers. We found we could do that more efficiently and effectively, to everyone's benefit by working together rather than individually," says GWEC's executive director, Misty Baker.

The consortium's founders include Ericsson, AT&T Wireless Services, Lucent Technologies and Motorola, along with Mankato State University, the South Central Technical College of Minnesota and the University of Texas in Dallas (UTD).

### Greater demands

Additional companies, colleges and mobile telephony operators are expected to join in this unique partnership which will benefit the entire industry.

Sprint, Pacific Bell, Nortel and Qualcomm have shown considerable interest, for example.

The steady increase in the number of users of mobile telephones, pagers and other types of wireless communications equipment all over the world is paralleled by new demands made on the engineers required by the industry. In the U.S. alone, several thousand well-trained technicians are needed every year.

### Rapid development

"Everything is happening so fast in mobile telephony today that the universities cannot keep pace. We have to retrain people when they come to us," says Per Nygren, who heads Ericsson's E-TEC training center in Dallas. "Cooperation in GWEC is an excellent way of improving the expertise of students – and our future employees."

Per Nygren initiated the consortium a year ago, together with Jerry Dotson of AT&T. Per has now been appointed as GWEC's Chairman.

"We know that many companies and universities all over the world are already cooperating closely. We want to help spread these sound ideas by providing a focus – and we are starting in the United States," Per Nygren says. "The idea of these training programs is that students always have access to the latest information and developments, although this doesn't mean that we will be giving away business secrets about our products or services."

The programs which GWEC members will be supporting are expected to



Per Nygren, who heads Ericsson's E-TEC training center in Dallas, is one of the founders of the recently formed U.S. consortium which will link industry and the universities.

Photo: BJÖRN SEGER

prove highly attractive. At the same time, this initiative enhances Ericsson's reputation as a good corporate citizen.

"Our aim is to get the universities to create entire programs under the wireless heading, that is to say graduate engineering programs focusing on mobile telecommunications and cell planning. It normally takes several years to get a program of this nature into operation at the university level, but we have already started up the first independent course units at the University of Texas. And we'll be continuing in the summer and autumn," Per Nygren says.

NILS SUNDRÖM



## Ericsson's biggest campaign ever

"So small that it changes your world" is the theme used to launch Ericsson's new GF 788 mobile telephone in Europe. European consumers will become familiar with the 788, Ericsson's latest miniature marvel, in TV commercials, billboard advertising, and press campaigns. Maybe you have already seen the first TV spots shown this week.

This campaign is the first visible result of Ericsson's collaboration with the Hall & Cederquist/Y&R advertising agency. The 788 campaign was preceded by the most intensive market investigation ever conducted by Ericsson. The ads started to appear in the Swedish press on Monday, in publications with target groups ranging from young adult women, parents and young men with a technical/sports profile. The European campaign starts at the end of the month.

## Better anti-theft solutions for GSM telephones

GSM telephones which are reported stolen can now be disconnected, making them unusable. The three Swedish mobile telephone operators have agreed on a joint theft-protection strategy which is to be introduced in cooperation with the National Police Board and the CEIR computer register in Dublin.

Mobile telephones are attractive items for thieves, and there is an extensive black market in stolen handsets. Most of the 100,000 mobile telephones stolen in Sweden last year were GSM phones. Even if the subscription can be terminated immediately, the actual telephone can be used again on another number.

The theft-protection system which is being introduced in March makes it possible to cut off the actual mobile handset from the network. The first step is for subscribers to register their GSM telephone's IMEI code with the police. The IMEI code, which is a 15 digit ID number, is then entered on a computer and au-

tomatically registered both with the Swedish National Police Board and the CEIR, the European equipment database in Dublin.

When the theft of a GSM telephone is reported, the IMEI code is blocked and the handset cannot be used. By the end of the year, this technique will apply to virtually the whole of Europe and most other GSM countries. This thief-proof system is already used in countries such as Finland, Denmark and Germany.

"I am pleased that several operators are latching onto this," says Jan Ahrenbrink, Marketing Manager for the Mobile Telephones and Terminals Business Area. "There has tended to be a great deal of theft in the industry, and GSM telephones are small and easy to get rid of in a number of countries. If the industry signals that better protection is available, it will become difficult to sell stolen telephones."

In point of fact, the GSM telephones which turned up in Belgium last year after being stolen from an Ericsson shipment in Sweden could be disconnected by making use of their IMEI codes.

NILS SUNDRÖM



# France – first with the MD90 private exchange

The MD90 is a package version of the MD110, with a capacity of up to 700 extensions and specially adapted for sales by independent authorized distributors. Bo Dimert, who heads the business unit Enterprise Networks, says that one of the reasons for making France the first market for the MD90 is that it has a well-established network of independent distributors who are already selling Ericsson's small PBX systems successfully.

Ericsson is now actively developing new indirect sales channels and reinforcing the existing distribution network. This will reduce sales overheads and provide broader market coverage. The MD90 will soon be launched in other European markets, the United States and Asia.

## Simple installation

It is very simple to install the MD90. When we tested this aspect in connection with the launch in Stockholm, the French technicians installed the equipment in less than two hours. In principle, it is just a question of plugging it in and starting up the system. Despite its simplicity, the MD90 offers several advanced facilities which can be activated in accordance with the customer's requirements – for example computer-supported solutions and a wireless telephony solution based on DECT standards and automatic call distribution (ACD).

The lead-times have been cut dramatically, which means that delivery to a customer anywhere in France can be made within three weeks of placing the order.

"By focusing actively on our indirect channels, we will have more resources to devote ourselves wholeheartedly to the more complex task of selling solutions within the Consono framework," says Gilles Pichon, S.A. Ericsson's President in Paris. "Our network of highly experienced distributors is operating in practically all the major urban and industrial centers in France. There are some 15 dealers in the Parisian region alone."

## Rapid success

S.A. Ericsson is the new name for Eritelcom. The change of name was made



France is the initial market for sales of the new MD90 private exchange. About 100 representatives of some 30 French distributors helped to launch the MD90 in Stockholm.

when Eritelcom became a wholly owned Ericsson company. In a very short time, this subsidiary has established a strong

position in the corporate communications sector, with a market share of more than 15%.

## New records

New records were broken last year with sales of 230,000 lines. In terms of lines, France is Ericsson's largest PBX market, apart from China. One reason for heavy sales in France was the introduction of a new ten-digit dialing system which meant that a substantial number of private exchanges had to be replaced or upgraded.

Since sales were higher than market growth, Ericsson gained market shares from competitors.

In wireless telephony based on DECT standards, S.A. Ericsson is clearly in the lead with a market share of approximately 80% last year. The DECT sector is continuing to expand rapidly, which indicates that further successes may be anticipated. But the current priority is to ensure that the new MD90 succeeds in the market place. Judging by the initial interest shown by customers, this expectation is likely to be realized.

THORD ANDERSSON



No one was saving their (gun)powder at the launch of the MD90. Smoke effects were employed to enhance the festivities. From the left: Philippe Mauquest, Hervé Lapierre, Gilles Pichon, Jean Audran and Lars Ekström. Photo: THORD ANDERSSON

## hello there!

How's it going in Lynchburg?



Einar Lindquist, the new President of the Private Radio Systems business unit, Lynchburg, USA.

• How does it feel to move to Lynchburg?

"It feels fine, thanks. This is a much quieter place than Dallas, where I was previously located, when I worked a couple of years for Allgon, which is a Swedish company. But before that, I worked for Ericsson from 1989 to 1995. My first job at Ericsson was with Radio Access in Kista, and then I went to the Ericsson subsidiary in Hungary where I started up operations for the former Radio Communications unit."

• How many people are working with Private Radio Systems at Ericsson in Lynchburg?

"About 1,500 people out of a total of 2,600 employees. Operations are divided into three areas: Private Radio Systems, the manufacture of base stations for mobile systems and production of mobile telephones. Ericsson Inc. is Lynchburg's largest private-sector employer. Lynchburg is the "headquarters" for Private Radio Systems' development, marketing and production. The most important product is EDACS, a digital radio system for police and emergency rescue services, for example. This system has been sold in many countries outside the US. At the beginning of the year, we received a large order from Korea worth 40 million dollars."

• What do you think is the most important assignment this year?

"Improving profitability and integrating operations even more closely with the rest of Ericsson. We have to communicate our objectives in a clear manner if we want to utilize the enthusiasm and energy we have here in Lynchburg in the right way. Everyone should be able to feel that he or she is doing an important job which ultimately affects our customers. It is also essential to find out what kind of skills we need, and work out the best way of achieving them. There is going to be a clear focus on skills and know-how development for employees at Private Radio Systems in Lynchburg."

• You have been working outside Ericsson for a time. What did you learn?

"Allgon, where I was working, puts the focus on its customers. Customers are the reason for our existence, and we must never forget it!"

GUNILLA TAMM



## Industry news

### Alcatel to start satellite telephony

Alcatel has applied for a license to launch 64 satellites and operate a satellite network scheduled to open by 2001.

The network, to be called SkyBridge, will handle high-speed broadband communication for both business and private users. In addition to Internet traffic, the system will handle other data at speeds up to 60 megabits/s. Estimated cost for the project is USD 3.5 billion. Alcatel is currently negotiating with interested parties for financing.

### PC-based line sharing

Lucent Technologies is now launching a system for private users and small businesses that allows a single subscriber line to be used for four telephone lines for fax, Internet access, etc.

The product will be called Partner. The system can be expanded so that four external and five internal calls can be handled in parallel.

### Nokia has developed a CDMA chip

Nokia has developed its own CDMA (Code-Division Multiple Access) chip which will be used in Nokia products to be delivered starting in summer 1997.

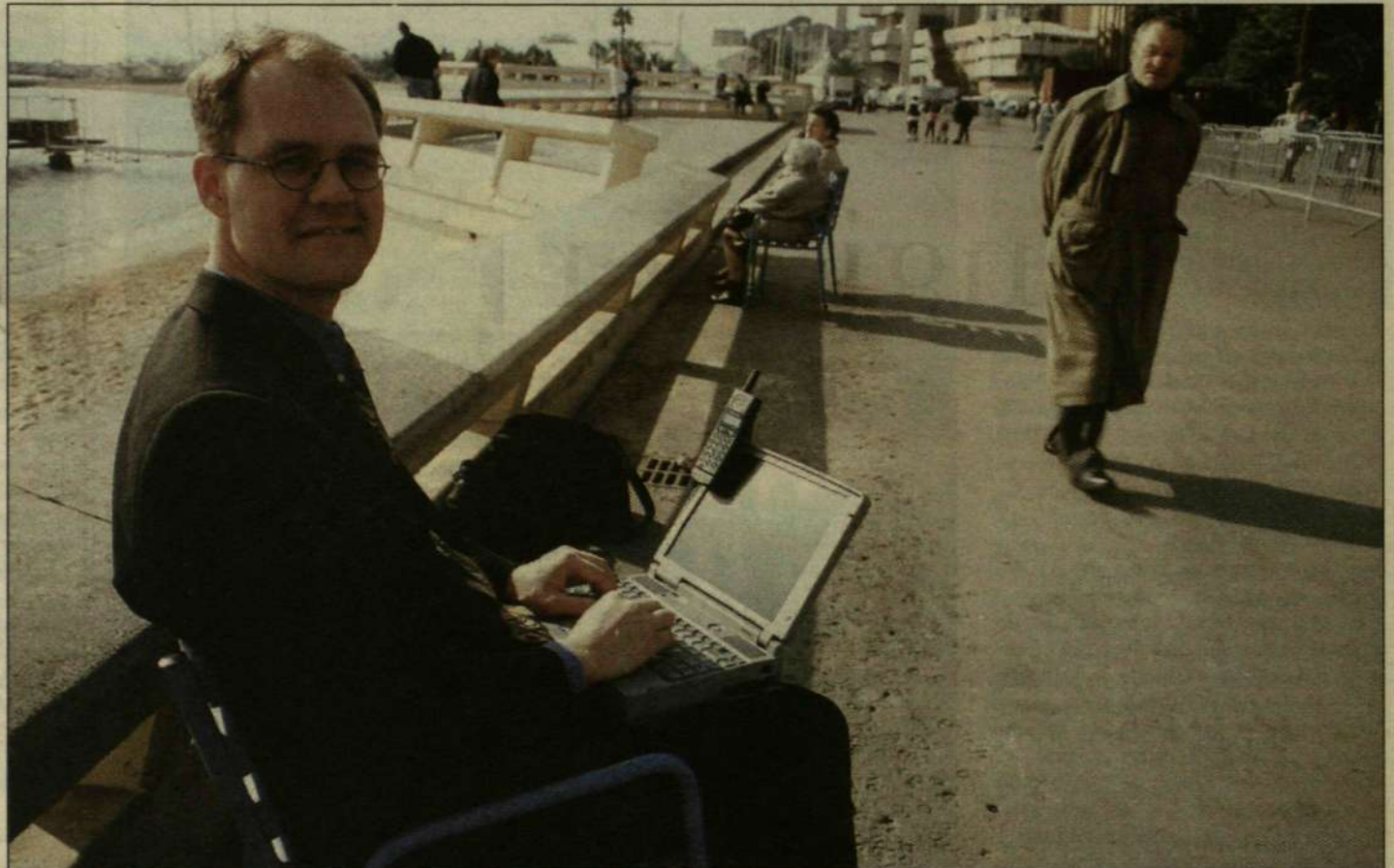
Nokia will build its first dual-mode CDMA phone based on the 2110 series. Nokia has been conducting CDMA research since 1991, when a research center for this purpose was set up.

### GSM to Mozambique

Alcatel has received an order from the Mozambique network operator TDM to supply a GSM network with a capacity of 10,000 subscribers, which is scheduled to be operational at the end of June. The order value is USD 9.6 million.

The network will provide coverage in the area around capital Maputo and along highways to South Africa and Swaziland.

# New concept for the wireless office



Olle Källström, who is responsible for the new application GSM intranet access, demonstrates how the technology is used in the new business package for the GSM system.

Photo: NILS SUNDSTRÖM

**Mobile telephony for everything – both voice and data, with coverage both indoors and eventually around the globe. This is the implication of Ericsson's new business solution for GSM, which was launched at the GSM World Congress in Cannes.**

The Business Mobile Advantage concept contains a number of services that can be customized for companies with a mobile workforce. Among other features, the system provides the same functions for the mobile phone as for fixed office phones, including short numbers that can be used throughout the network and call restriction so that the user can select the calls to be received.

The GSM user can also send and receive e-mail, as well as encrypted information from the company's own intranet via the Internet. The system reduces a company's overall telephone costs, while increasing availability as more workers become mobile.

"You should be able to use your mobile phone in the office or on a business trip and always have the quality and capacity you need from the network," says Patrik Svensson,



Patrik Svensson, project manager for the new Business Mobile Advantage from the GSM, NMT and TACS business unit, made the presentation at Cannes.

product manager for Business Mobile Advantage at the unit for GSM, NMT and TACS.

In addition to indoor radio coverage and intranet access, the new business solution supports virtual private networks (VPNs) that span both mobile and fixed phones. This reduces telephone costs and allows control over usage.

"We are targeting

the entire business communications market, both service companies and manufacturing companies," says Patrik. "In principle, this means that companies in all sectors with mobile employees can benefit from our solution."

"Even in many sectors where mobile telephony has not been a priority, people are beginning to see the benefits of being able to communicate wherever you are. In municipal organizations, for example, mobile communications can be used by people providing services in homes or to increase safety at child care centers."

### New product portfolio

Numerous market surveys and studies on how end users want to use mobile telephones underlie the new product portfolio for GSM. As the number of mobile workers increases and new demands are placed on business communications, operators will have to adapt their business.

"A process has now started that in two or three years' time will change operators, their distribution channels and support. To succeed in the business market, operators must become more focused," asserts Patrik.

"This is a total solution that shows that we are at the forefront in understanding the market and its needs and that we are helping operators to make the necessary changes."

Will indoor coverage for mobile telephone systems compete with DECT?

"No," replies Patrik. "It's a question of two different solutions that we offer to different customers, although there are areas in which both alternatives are equally good solutions. The important factor is how many people in the company work outside the office. We do not believe that any one solution will dominate. However, it is clear that the two will become more comparable in terms of price," predicts Patrik.

The Business Mobile concept's intranet solution allows a GSM user with a portable



This year's GSM World Congress was the largest-ever, with a total of more than 2,400 delegates. The congress has grown steadily each year and attracts industry professionals and representatives from GSM operators. Ericsson's Business Mobile Advantage concept was demonstrated in a stand in the Palais des Festivals conference center, which also hosts the Cannes Film Festival.

PC to connect to the company's intranet. The connection is routed over the Internet directly into the company's network and uses encryption and the so-called Point-to-Point Tunneling Protocol (PPTP). Swedish truck manufacturer Scania is now testing the technology in a pilot project being conducted jointly by Ericsson and Swedish network operator Telia.

### Multislot technology

Olle Källström, product manager for GSM data applications in the Cellular systems – European Standards business unit, demonstrated the technology in Cannes.

"The data speed is 9.6 kilobits per second, which is fully acceptable for e-mail or reading text on an intranet. In 1998, new network services based on multislot technology will provide speeds up to 38 kilobits per second. This is something the entire GSM industry is working on, and Ericsson is very far advanced in enhancing its various systems," says Olle.

NILS SUNDSTRÖM



**Raised in Cuba and post-graduate student in St Petersburg and Uppsala. Now working in an international team at Ericsson Radio Access in Kista. Engineer Alina Oramas is an excellent example of how international competence can be leveraged if the employer is interested and receptive.**

# International engineer in Kista

started here as a trainee. I was then offered permanent employment in November 1996, which I naturally accepted gladly and with interest," says Alina Oramas, an engineer with Active RF Products, a competence center within Ericsson Radio Access AB. Alina and her husband Andres

came to Sweden about two and a half years ago. They spent their first months in Gävle, where Alina studied Swedish. As Alina describes her job, it is very evident that she succeeded in these studies.

Now Swedish can be added to the two languages that Alina knew previously, Russian and her native tongue Spanish.

"I can read English and have previously studied the language, but I wouldn't say I speak it yet," says Alina, who is therefore studying English in her spare time.

## Learning about radio

Apart from her normal work assignments, Alina also studies during working hours. Approximately one day a week she participates in an internal Ericsson course on radio.

"Thus far, I have learned a lot about radio from my colleagues and from Thorsten Nygren, who is an expert on radio and works here," says Alina.

When she began at Active RF Products, Alina did not know very much about radio – a gap in her knowledge that is quickly being filled.

"During my studies, I focused on technical physics, including material and semiconductor physics. When I came to Sweden, my degree needed to be 'translated' to Swedish conditions. I also completed a course in telecommunications technology for foreign engineers in Uppsala," relates Alina.

When the labor exchange arranged Alina's first trainee position, it was at Ericsson Radio Access. Her husband Andres,

who is also an engineer, obtained his first position at Ericsson, as well, and is now employed by Ericsson Radio Systems.

"I think that it is important to take advantage of the considerable expertise possessed by immigrants and refugees who for various reasons come to Sweden," says Active RF Products manager Bengt K H Nilsson.

"We have more female engineers, as well as more employees of foreign origin, than many other technology companies. This creates a better working environment and a broader base of experience that is an asset for the company in many respects," says Bengt.

Alina believes that it is easier for foreigners with a technical background to find employment than it is for persons with other types of training.

## Global language

"Technical language is global," notes Alina. "Basic technical principles are the same everywhere, although technical knowledge must obviously be supplemented by language skills."

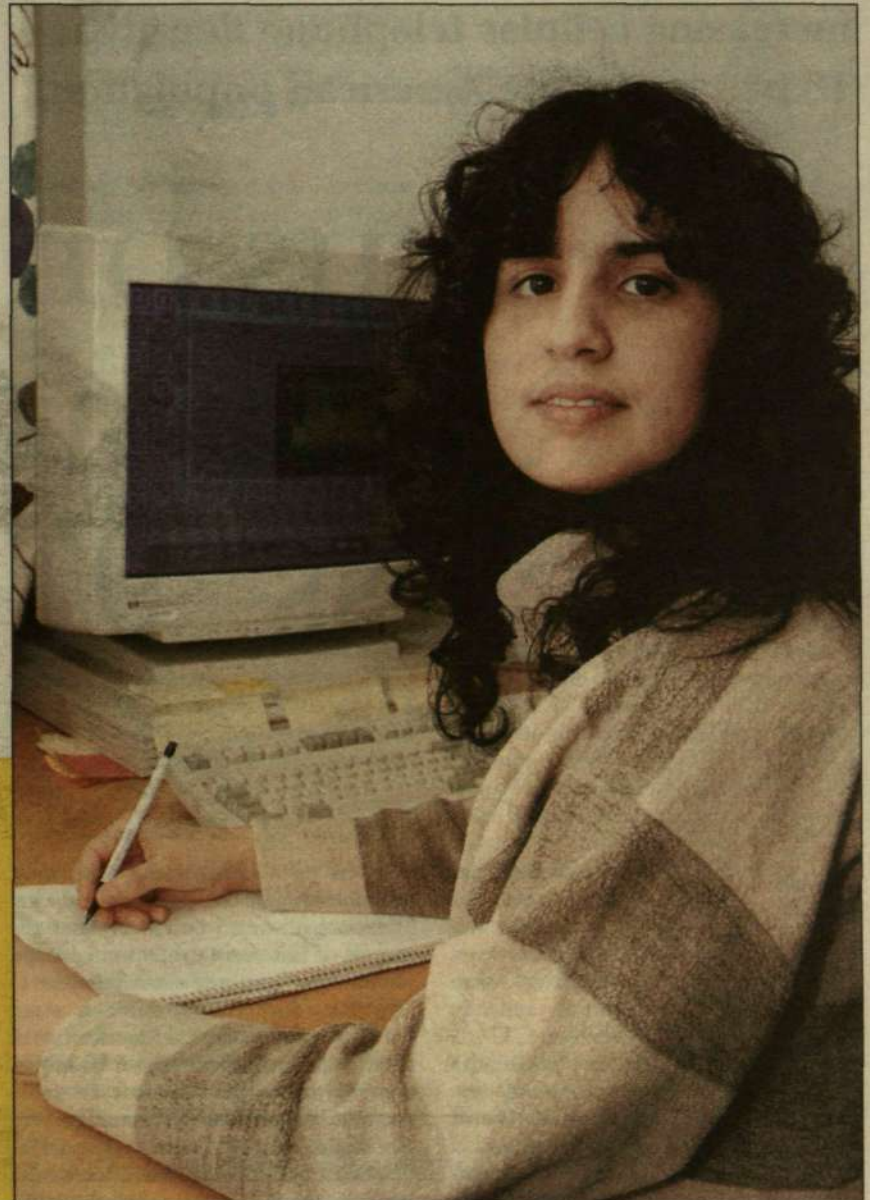
In her daily work, Alina mainly uses a powerful PC for what is called mathematical simulations. In simple terms, this means that she works with enhancing the power transistors for radio base stations developed and manufactured by her department.

"The simulation models that I work with were developed here in the department by my colleagues," says Alina. "This means that we can work with models on the computer instead of producing a lot of prototypes."

In her work to enhance the Multi Car-

**Alina Oramas is an engineer who was born in Cuba and did post-graduate work in St Petersburg and Uppsala. She now works in an international team at Ericsson Radio Systems in Kista.**

Photo: ANDERS ANJOU



rier Power Amplifier (MCPA), Alina encounters many new and interesting technical challenges. As part of her work, Alina participates in a number of development projects in which this amplifier is an important component.

## Open atmosphere

"The atmosphere in our department is very open, both from a professional and a social perspective, and it's easy to become a member of the team. I've never felt isolated as you might expect a newcomer to feel," says Alina.

During her leisure time, Alina reads, goes to movies and meets her friends. Previously she worked out at a gym, but lately it has been difficult to find time.

"I sometimes go bowling, but my husband and I often come home late," says Alina.

The reason is that they commute between Kista and Uppsala, a distance of about 50 km. So now they are looking for an apartment closer to their colleagues in Kista. If you have a suggestion, don't phone the editor. Phone Alina.

LARS BÄCK



## Looking back

### RIFA and Svenska Radioaktiebolaget – among the first in Kista

Ericsson subsidiary SRA (Svenska Radioaktiebolaget) and RIFA were among the pioneers in the newly opened industrial estate in Kista in spring 1976. SRA's head office, as seen in this photo, was ready for occupancy in May.



Mobile telephony has rebounded strong in the American market. After a few years of stagnation, cellular systems are again showing signs of serious growth. More than 10 million new subscribers were added to the U.S. market last year, increasing cellular telephone density to 18 percent of the American population.

## Focus on Ericsson at Wireless '97

Never before has the annual CTIA convention and exhibition attracted so many visitors and exhibitors. CTIA is the industrial association of cellular telecommunications operators and suppliers in the U.S. Current market trends clearly reflect growing interest in an industrial sector that reported total revenues of USD 23.6 billion in 1996.

Wireless '97, the theme of this year's CTIA convention and exhibition, was held in San Francisco, not far from Silicon Valley, the American IT industry's Mecca. More than 20,000 visitors came to the City by the Bay for a look at the very latest in wireless technologies and listen to presentations and panel discussions featuring many of the telecommunications industry's most distinguished leaders.

Ericsson, the largest supplier of telecom equipment in the American market, had one of the largest exhibition stands at

Wireless '97. And certainly the most prominently situated, right inside the exhibition hall's main entrance. After the success of last year's exhibition concept, visitors were attracted again this year to "Ericsson Town," an exhibition stand built in the form of a typical American small town, with various stores and boutiques presenting Ericsson solutions for radio communications in the U.S. market.

A multimedia show was featured at "The Ericsson Theater," with particular targeting the CDMA technologies. The battle rages on between TDMA, the digital technology with which Ericsson is affiliated, and IS-95 CDMA. During 1996, several CDMA systems were placed in operation by various PCS operators in the U.S., and the entire industry is now waiting anxiously to see how the systems function as the total number of number of subscribers continues to increase. CDMA advocates are adamant in their conviction that their technology is superior to TDMA in terms of capacity, quality and other features. The moment of truth



Wireless '97 attracted a very large number of visitors. CTIA estimated that 20,000 people would visit the exhibition before the doors were finally closed on March 5th, a high attendance figure by American standards. Photo: LARS ÅSTRÖM

### Ericsson - the largest telecom supplier in the U.S. market - had the largest exhibition stand at Wireless '97

may come in 1997, when Ericsson hopes to prove that IS-95 CDMA does not offer customers anything that cannot be matched by TDMA, at lower total costs.

#### New pocket telephones

Qualcomm, the company that developed IS-95 CDMA, has been very aggressive in marketing the system, with considerable success so far. Its technology has captured 50 percent of the market for PCS systems. Motorola, Nortel, and Lucent are other suppliers, in addition to Qualcomm, that market the CDMA technology. Nokia, Sony and some smaller U.S. companies offer telephones for CDMA.

One of the arguments against IS-95 CDMA - the lack of telephones with suitable format designs - has now been eliminated. Motorola and Qualcomm displayed CDMA telephones at Wireless '97 that are not as small as the latest D-AMPS and GSM models, but are still much smaller and handier than products showed at last year's CTIA exhibition.

#### Broader range

Ericsson's new range of pocket telephones, of course, are more esthetically attractive. The world's smallest PCS telephone, CF788, was shown at Wireless '97. The new cellular telephone is intended for the GSM-based PCS 1900 standard. Its total weight of 135 grams makes it the smallest phone on the market today. Available in four different colors, commercial sales of the new CF788 telephone will start in June.

New radio base stations for IS-136, the latest AMPS standard, were included among other novelties introduced by Ericsson at the exhibition. The four models in Ericsson's new RBS 884 series - Macro High Power, Macro Quad, Micro Outdoor and Pico - supplement Ericsson's range of radio base stations for the American system. The new radio base stations can be used to build systems with hierarchical cell structures, a technique employed to increase the capacity of TDMA systems. RBS 884 Macro High Power for 800 MHz systems is designed for large cells used in sparsely populated areas, which take maximum advantage of its high coverage capacity. The RBS 884 Macro Quad was designed primarily for 1900 MHz. The RBS 884 Micro Outdoor and RBS 884 Pico models were designed for small cells with high capacity requirements, with the Pico model intended for indoor applications.

Other new products introduced by Ericsson at Wireless '97 were highlighted by several technical improvements for the new IS-136 standard, including a new speech coder and techniques designed to utilize channel distribution when interference occurs in radio traffic. Active antennas used with small radio base stations comprised another novelty introduced by Ericsson in San Francisco.

LARS-GÖRAN HEDIN

■ The next edition of Contact will contain more news from Wireless '97, including an interview with Bo Hedfors, President & CEO, Ericsson Inc., USA



One of Qualcomm's featured attractions at Wireless '97 was a demonstration that showed how CDMA telephones can be used for data communications - without a modem between the telephone and the PC.

## diary

### A new direction

When this edition of Contact is put in your mailbox, Britt Herneln will have recently left Ericsson. Four months ago, she accepted a new job at what was then the Business Area business networks, immediately before the sweeping structural changes implemented at year-end 1996.



**Monday:** My last meeting as Chairman of the Executive Briefing group (a customer seminar).

I'm surprised that I'm so committed and involved after only four months. This will be the first time Ericsson holds an Executive Briefing outside Sweden. We don't think customers from Southeast Asia will come to Stockholm for a meeting.

Local companies are anxious to attend, and customers are lining for seats at the table. Executive Briefing is a highly successful concept that should be nurtured carefully. Too bad we couldn't get the Stockholm City Hall as the venue for dinner. I hope the situation can be corrected for the autumn meeting. Obviously, it would be an extra treat for customers to say they had dined in the same room where Nobel Prize laureates have dinner in Stockholm every year.

**Tuesday:** Relinquish another job today. This time it's my position as the editor of our Intranet. Our web master works extremely hard, and the job just continues to expand. It's incredible to look at the number of different opinions that pour in every day. We should consider the flow a sign of interest, rather than criticism. Unfortunately, most of it feels like criticism at this time, especially for the web master, who bears the brunt of the steady onslaught. Of course, we can discuss the wisdom of all the structural changes now being implemented.

I'm sure there is room for improvement. But we simply cannot overlook the fact that it's very difficult for an organization "weaned on organizational squares" to think along different lines.

A new control group will take the reins now. Hopefully, it will roll up its proverbial sleeves, become totally committed and assume responsibility for making sure that whatever changes are made will be improvements, and not forms of compromise. I wonder if everybody really understands how the central Internet/Intranet "channel" will function in the future. Everybody must assume his/her responsibility for providing pertinent and accurate information.

**Wednesday:** A day to reflect. The entire concept of resigning from Ericsson is not particularly uplifting. My colleagues are concerned over what will happen when I'm gone. I understand their feelings. Ericsson recruited me to be Information Manager of the Business Networks Business Area and, after three weeks, there was no such business area. We didn't know anything. C'est la vie! My first thought was that Ericsson is so big that there should be many other opportunities. My former colleagues at Telia thought otherwise, and initiated "Operation Persuasion" to get me to return.

I've made up my mind, and I'm excited about going back to Telia, to a new Telia Telecom and a slightly broader area of responsibility. My odyssey to and from Ericsson was short, but highly educational. Hopefully, I'm not the only person who learned something along the way. Perhaps I also made some small contribution to Ericsson. One of the biggest differences I noticed between Telia and Ericsson was the distance between home base and customers: the difference is much greater at Ericsson, not only in geographical terms, but also mentally.

It's my personal belief that many people working for Ericsson need to get closer to reality, and by that I mean customers.

**Thursday:** At first, I thought about staying away from the meeting of information managers in Infocom Systems. Somebody else should plan for the future. But my colleagues thought I should attend and express their feelings. We had a very good discussion, including the frustrations caused by not being able to distinguish between the roles of different business units, the business area and Corporate functions.

At times I wonder how a large company can become before it starts to lose efficiency. Instinctively, you have to believe that smaller, independent units have greater potential for higher efficiency.

**Friday:** My last day at Ericsson. Things were a little confusing at home this morning, before I gathered together all the materials I have to return to the Company. Modem, fax, cellular telephone, charger, etc.

Darn, I forgot the other charger. Did I forget or was it some subconscious choice? Now I have to come back some day to return the cord. Good, I won't have to say all my good-byes today. I don't like leaving a job, especially when I leave all the extremely pleasant and kind people I worked with here in Nacka Strand. And what a nice office I'm leaving behind, with its beautiful view of over the water and the magnificent Carl Milles statue. Next time I bring guests to see the Milles sculpture, I'll point toward my old window and say: I used to have an office up there when I worked for Ericsson, what a fantastic view I had!



One of Ericsson's main arguments for TDMA is the system's track record as a tried and tested technology used in all parts of the world. To illustrate this point, the clock tower on Ericsson's exhibition stand was equipped with a meter showing up-to-the-minute figures on the number of GSM, D-AMPS and PDS subscribers around the world. The three standards are all based on TDMA.



Smaller versions of CDMA telephones are finally being introduced on the market. Qualcomm and Motorola presented new cellular phone models that are beginning to approach the dimensions of TDMA telephones, but they are still about 10 grams heavier than Ericsson's GSM telephone, for example.



# Expertise, words and action

Erik Nordling started working for Ericsson twenty years ago. In 1980, he went to another company, but returned in 1996 and joined Ericsson Business Networks in Nacka Strand. His job was to create a sales and service team – Professional Services. The team is part of and subcontractor for Consono Solutions, concentrating on sales of complex, customer-adapted solutions for business communications.

"We offer customers something new and different, and that something is Ericsson expertise and skills, independent of Ericsson products," explains Erik Nordling. "Our mode of operations enables us to offer total responsibility for customer-adapted solutions. The Professional Services Team also operates as a separate and independent profit center."

## Customers are first

Erik Nordling quickly reviews the major forces in his team's operations. Customers are first and foremost, customers who expect more than a product. They also demand expertise, words and action in close cooperation with suppliers.

Ericsson's own personnel comprise the second element.

"We live and operate in a deregulated industry. To attract, educate and keep qualified personnel, we have to offer them challenging and exciting job assignments.

## Market growth

The third major force in Professional Services is profitability. A general objective in all Ericsson operations, in this case profitability is dependent on solid and close relations with customers as well as motivated and highly qualified personnel. Business generates business. And services are becoming "big business."

Annual growth in the services market is estimated at about 20–30 percent. The playing field covers a full range, from packaged services to full-scale outsourcing, whereby customers contract out op-



Anders Söderkvist and Erik Nordling are key members of the Professional Services team, a subcontractor that serves Consono Solutions, concentrating on complex, customer-adapted solutions for business communications. Photo: THORD ANDERSSON

erations and maintenance of telecom networks and, in some cases, even ownership. So-called facilities management is just below outsourcing in the services hierarchy, whereby a company retains network ownership but contracts a service company for operations and maintenance.

Ericsson has strong potential as a supplier of marketable services and already has several reference customers. The UK, for example, Ericsson Ltd. has been

commissioned by the BBC to supply telecom services in the form of a fixed monthly fee plus call charges. The network is owned, operated and maintained by Ericsson.

## Everybody meets customers

Erik Nordling thinks customer contacts are the most enjoyable part of his job. He has worked in "the field" for 19 of his 20 years in the telecom industry, taking care of customers, large and small. Before returning to Ericsson, he worked for IBM, where his responsibilities included global liaisons with Ericsson as a customer.

In the team now being put together, everybody works on customer projects.

"Nobody is just a boss or just support personnel, everybody bills hours. An organization like this doesn't have room for excess luggage," Erik Nordling says, and continues:

"I want to meet customers, mainly because I enjoy working with them."

## Starts with a "workshop"

A large part of services is provided when customers upgrade and expand existing communications solutions or buy completely new solutions. The process usually starts with a "workshop," whereby Ericsson and the customer meet to review possible solutions based on the customer's commercial needs. Ericsson then formulates what it considers to be the best solution.

"Customers have traditions, a history, that merits special consideration. It may include Ericsson products, products purchased from other suppliers as well as services provided by Ericsson and other

companies. One of our main responsibilities is to combine everything to create a single unit, or solution."

## Customized services

Investments in communications have become more of a strategic issue for commercial customers. Companies know what they want to support their own business activities, their own users and their customers. Their goals can be achieved in many different ways, but they need help in selecting the optimal solution.

"Large, global companies invest billions annually in telecom services. If the investment object was a machine, naturally they would base their choice on meticulous calculations and measuring systems under the supervision of one person," says Erik Nordling.

## Customer can choose

Until recently, these rules did not apply to telephony, but it can be affected more strongly today. For example, customers can now choose slightly lower service levels to reduce operating costs or invest more heavily in resources for operations that simply cannot go awry. With all these variables, no customer solution is the same as any other. And services naturally comprise a greater percentage of all customized solutions.

During an hour spent talking with Erik Nordling, he never mentioned a single product by name. Time and time again, however, he referred to the subject of customers. In the service sector, customer relations are the primary focal point. And a business transaction is never concluded with a thank you, a handshake and an invoice, but with follow-up, reviews and continued contacts.

KARI MALMSTRÖM

## 'We offer customers Ericsson skills and expertise independent of our products'



When employees of BBC pick up the telephone, Ericsson's network takes care of their calls. Photo: VICTOR BROTT



# Infocom outsourcing drawing to a close

The outsourcing project within business area Infocom Systems has made considerable progress. The aim of the project is to sell all component manufacturing operations in Sweden. Thus far everything has gone according to plan.

"One of the largest units, which manufactured connectors, plastic and mechanical components, was transferred to new owners on January 1. This completed the major share of the outsourcing project," relates project manager Johan Brundell.

## According to plan

"Still remaining are the circuit board plant in Norrköping and the unit for surface finishing at the main plant at Telefonplan in the south of Stockholm," continues Johan. "We have contacts with several circuit board companies and are actively seeking a buyer who can continue operations. A solution for surface finishing, on the other hand, has not yet been chosen, in part due to the fire at the main plant in January."

Johan relates that the project is proceeding according to plan and that appropriate solutions from both an industrial

and a commercial perspective have been found for the operations to be divested.

"Outsourcing at any cost has never been a priority. Our assignment was to investigate the possibilities of finding buyers who will benefit all parties, and I think we have accomplished that," says Johan.

## Foreign investors

It is particularly gratifying that four large international companies have established production in Sweden. These companies also have the capacity to invest in the operations that they have acquired, which can mean the creation of more jobs over time.

"We willingly admit that there were some practical problems at the outset in several cases. Segerström and Svensson, for example, had a difficult start for various reasons," Johan reveals.

Mauritz Larson, who is process and logistics manager at Segerström's, relates that there were delivery problems caused by new routines and order flows between Ericsson and the Segerström group.

"The fire added to our problems by delaying deliveries and creating unnecessary problems. But everything is running smoothly now, and we are almost com-

pletely caught up," says Mauritz.

The task now remaining is to find suitable purchasers for the last two operations, surface finishing and circuit boards. When this is accomplished, the assignment will be completed. The outsourcing project is the largest of its kind in Ericsson's history and has involved many people. In less than 18 months, solutions have been found for the lion's share of all objects.

LENA WIDEGREN

Outsourcing has been a recurring theme for some time in Contact and in the business area newsletters. The Infocom outsourcing project is now nearing completion. Read more about it in the theme supplement of Contact: Modern Times.



## Component units divested to date

- Mechanical engineering in Stockholm (550 employees) to Swedish Segerström and Svensson
- Plastic components in Kristianstad (600 employees) to Swedish Nolato
- Cables and backplanes in Katrineholm (230 employees) to US-based Amex
- Connectors in Katrineholm (300 employees) to US-based Berg
- Relays in Stockholm (70 employees) to Japan's Anitsu
- Shear processing in Stockholm (30 employees) to Swedish Arkivator
- Transformers in Karlskrona and Östersund (225 employees) to Tamura of Japan.

## Units remaining to be sold

- Surface finishing in Stockholm (30 employees)
- Circuit board in Norrköping (400 employees)

# Production problem solvers

If a stoppage occurs in MiniLink production, an alarm is sent to the technical unit in Borås.

The engineers from this unit act as problem solvers but also work together with Ericsson Microwave designers in Mölndal on key aspects of the next generation of the MiniLink system.

Ericsson Microwave System's plant in Borås was reorganized in February 1995, and a new technology unit was formed through a merger of two existing departments.

Ingmar Andersson, manager for the technology unit at Borås, was given the task of implementing the organizational changes.

"Everything went smoothly, and now everyone is comfortable with the new organization," says Ingmar.

The number of employees has gradually increased over the past year to a total of some 70 persons working in units for design and product maintenance, testing methods, production technology, test instrument service, production and process development and project management.



For Ingmar Andersson, manager of the technical unit at Borås, advances in technology are liberating and make his job more exciting.

In addition, there are about 20 employees in the units for data and industrial automation.

"During 1997, a new production line will be installed for Monolithic Microwave Integrated Circuits (MMIC), which will be ready for volume production in early

1998. This line is primarily intended for MiniLink production. We will need to invest in further competence development and some new recruits will be needed.

"We are all looking forward to working with this new and exciting technology," says Ingmar.

## MiniLink takes 70 percent

Working in the technology unit requires extensive knowledge. About 70 percent of operations relate to MiniLink, while the remaining time is devoted to production of other types of links.

"Our work cuts across the entire organization to provide support for all units at the Borås plant," relates Inge Törpås, who is the manager for design and production maintenance.

"Sometimes we have to respond to emergencies when problems occur in production. A faulty component on a circuit board, for example, can cause considerable problems," notes Inge.

When new products are introduced, there is a close cooperation between the technical unit in Borås and the designers in Mölndal, which entails a giving and taking among specialists.

"Because we are involved in the design process from the beginning, we can give our opinion about the feasibility of volume production of the product," says Inge.

## Mistakes led to improvements

"We are also responsible for continuous technical support, and if a new supplier enters the market with components that differ significantly from previous supplies, our job includes watching for potential problems and fixing them as soon as they occur," says Ingmar.

This type of problem occurred recently. Stocks of a particular microwave component were running low. The supplier



Inge Törpås, Maija Svensson and Tomas Bergsten work with circuit board CAD.

Photo: BO HÅKANSSON/KAMERAREPORTAGE



Per Wenander and Elisabeth Hed in test instrument service work with automated test systems for calibration of machinery at the Borås plant.

was experiencing problems and could not promise a fixed date for new deliveries. The situation was acute.

The technical unit in Borås and the design and purchasing functions in Mölndal were scouring all sources for an equivalent component. Finally one was found that met the technical but not the mechanical specifications.



Test engineers Mikael Svensson and Håkan Brolin are busy verifying the test rig for the wave guide filter for the new MiniLink.

"We simply had to find a solution," relates Ingmar.

"The contract with the previous supplier was not renewed. Instead we began using the new component with a re-designed circuit board. The result of this innovation was an improved product at lower cost."

CATHERINE ANDERSSON



Even as the flight begins its approach into Mexico City, the Ericsson name is seen emblazoned on the roof of the large industrial building. Ericsson has conducted business operations in Mexico for more

than 90 years, and is firmly established in the Mexican market. Ericsson has more than 2,000 employees in Mexico today, with only 40 percent directly involved in production. After the difficult years

that followed in the wake of Mexico's monetary crisis, the country is showing signs of recovery. And, once again, Ericsson is prepared to make investments in anticipation of a big-time "telefiesta" in Mexico.

# Mexico is preparing for "telefiesta"

For many years, the Mexican market consisted of one customer, Telmex, the country's main operator. Starting next year, however, Mexico's telecom market will be opened wide to all competitors, and many companies are waiting to get in the door. Ericsson is already involved in negotiations with several prospective new players. Mexico suffered considerable financial hardships from the "peso crisis" of 1994. Even now, the nation's economy is only starting to show signs of stabilization. Ericsson emerged relatively unscathed from the crisis, mainly through increased exports to other Caribbean nations and Central American countries. Nafta, the North American free trade agreement, also came at a highly opportune time for Ericsson, shortly before the peso totally lost its foothold in money markets.

Domestic demand came to a screeching stop, and many companies went bankrupt because of the crisis. Today, the economy is showing slow but steady signs of recovery and growth.

"We learned a valuable lesson during Mexico's monetary crisis: never become dependent on one market and/or one customer. Prior to the country's virtual financial meltdown, Telmex, the government-owned operator, accounted for about 90 percent of our invoicing. Today, based on higher exports and new operators, we have a more mixed customer base," says Antonio Reus, Head of Information and Quality Control at Ericsson Mexico.

With its long traditions and extensive knowledge of the Mexican market, Ericsson will be able to play an active role in shaping Mexico's new telecom market.

"We take an active part in proposing business opportunities for new and established operators, completely different from former marketing activities. We have also helped new operators coordinate excavation operations, for example, in construction of their new networks," explains Gerhard Skladal, President of Ericsson Mexico.

## Demands are high

World class equipment and quality are basic requirements for consideration as an operator in today's Mexican market. Ericsson is competing with total solutions and customer financing.

"There is a new philosophy in our industry worldwide. One of the absolute top priorities is to take an active part in helping to arrange customer financing. All our competitors today offer various forms of credit. The market has become more competitive within just a few years. There are no more five-year agreements. Over-the-counter transactions are much more common today. The telecommunications industry may be likened to the automotive industry or other staple products industries," says Gerhard Skladal. His opinions are backed clearly by current telecom market trends in Mexico.

Ericsson will have to review its position when the monopoly is absolved and new players enter the arena. The new challenge will be to recognize and meet growing customer demands.

"We are conducting negotiations with all new operators. Actually, the outlook is quite promising. However, it is naturally difficult to foresee future market development. Which operators will survive and which will emerge as market leaders."

## No longer a developing nation

Mexico has progressed beyond its former status as a developing nation. Quality demands are as stringent and sophisticated as anywhere else in the world. Ericsson's factory in Mexico is quality certified and supplies complete AXE equipment, not just shells as in the past. And Mexico is no longer a country used purely for inexpensive labor.

"We are developing into more of a knowledge, or expertise, company," Antonio Reus says. "We now have a technical center with more than 200 people working exclusively on software development and design."

Telephone density in Mexico today corresponds to about one telephone per 10 inhabitants. Current forecasts indicate the country will have 15 lines per 100 inhabitants by the turn of the century. Gerhard Skladal is optimistic and believes 40 percent of the country will have telephone coverage in 10 years.

"Classic wired telephone traffic will not see any appreciable growth," says Luiz Martinez, the man in charge of public telecommunications at Ericsson Mexico. "New operators will concentrate on some sort of hybrid solution with wireless access systems. Ericsson has a broad range of products with significant potential in this area."

As growth in the traditional market for wired telephony gradually begins to taper off, Luiz Martinez says, Ericsson will focus on helping established operators increase revenues



Gerhard Skladal is President of Ericsson's subsidiary in Mexico. He believes in rapid growth for telephony in the Mexican market.



Antonio Reus, Head of Information and Quality Control for Grupo Ericsson Mexico, says Ericsson's personnel policies have given the Company a good name in Mexico.



Roberto Rosales is responsible for dealing with all new operators in Mexico. Tremendous change will follow in the wake of market deregulation.



Telecom investments are beginning to pick up in Mexico after the country's monetary crisis. Today, telephone density corresponds to one telephone per 10 inhabitants, while mobile telephony has been characterized by sluggish growth. There is tremendous potential, and most signs today point toward a telephone boom in the wake of market deregulation.

from existing copper wire networks. In parallel, the Company will supply modern solutions for new operators.

"The entire world is talking about mobile telephony, while all large operators have huge amounts of money invested in wired networks," Luiz Martinez continues, "a phenomenon that cannot be overlooked."

"We have considerable growth potential in the services sector. Telmex, for example, already has a large customer base and expanded network facilities. One of Ericsson's largest contracts for intelligent network services was signed with Telmex."

Ericsson is also prepared to assume increased responsibility for customer maintenance and repairs, for example, to increase values of a stable market.

## Weak mobile market surging with Plan Amigo

Despite a promising start for mobile telephony in Mexico, market penetration remains relatively low at less than one percent. And, it should be pointed out, the mobile network was installed in the late 1980s.

"Mobile telephony was hit hard by the country's monetary crisis. Many companies cut back on mobile telephone and many have been afraid to accept new assignments. Things have been tough, but we now see signs of recovery and renewed confidence," says Per Fredén, Head of Radio Communications at Ericsson Mexico.

Ericsson has nearly 60 percent of the mobile telephone market through Telcel, a major operator and subsidiary of Telmex. During recent months, some growth has been noted in the number of subscribers as the result of a new program called Plan Amigo.

"Plan Amigo is a completely new subscription form," explains Per Fredén. "Customers buy and pay for conversation time in advance, and the system alerts them when their time is about to expire. It works like a normal telephone card, with no surprising telephone bills. Large numbers of young people and students have signed on as new subscribers. During the month of June alone, Plan Amigo attracted 7,000 new subscribers. The plan has created a new sales channel to regular consumers."

During recent years, Ericsson has implemented a number of rationalization programs in Mexico, including the sale of its former cable factory. Since 1994, the labor force has been reduced 25 percent. Today, Ericsson is prepared to embark on another growth period in parallel with increased market demand. Ericsson also has excellent prospects of recruiting the labor force it needs for future expansion.



Mobile telephony in Mexico has still not penetrated to the grass roots level. New forms of subscriptions, such as Plan Amigo, are paving the way for greater sales growth.

"Various surveys of college and university students have shown we are an attractive employer," says Antonio Reus.

In addition to offering stimulating jobs and career opportunities, Ericsson's personnel policies have also attracted attention in the labor market. Free medical and health care benefits and subsidized lunches are not common practice in Mexico. Policies such as these have given Ericsson a solid reputation in the labor market. In terms of employer safety, the Company also has an excellent record. Mexican health authorities regularly send doctors and medical staff personnel to Ericsson to study what can be done to prevent industrial accidents and personal injury.

PATRIK LINDÉN

## Telmex dominates telecom market

■ Telefonos de Mexico, Telmex, is the dominant operator in Mexico. The company was privatized in 1990, but the Mexican government retained 20 percent that will be sold at some point in the future. Cooperation with Ericsson is strong, based on years of success.

Telmex has implemented strong investment and rationalization programs to meet the surge of free competition next year. Grupo Carso, the largest owner of Telmex since privatization, has invested nearly USD 10 billion. Nearly 90 percent of the Mexican network is digitized today, and about 33,000 kilometers of fiberoptic cable have been installed.

None of the company's 50,000 will be made redundant because of deregulation and abolishment of its former monopoly status, according to spokespersons for Telmex, which has been a highly profitable company. Revenues in 1995 amounted to 9.3 billion Mexican pesos, and profits corresponded to more than 20 percent of revenues (one peso is valued about the same as one Swedish krona). Telmex is the largest company on Mexico's stock exchange.

Telmex is well-prepared to meet the competition. Its image has also been improved, although some critics claim a great deal of work remains in terms of customer relations and other soft sectors.

Grupo Carso, a large Mexican industrial conglomerate, controls Telmex but Southwestern Bell and France Telecom also have significant ownership interests in Telmex.

Through its subsidiary Telcel, the company dominates Mexico's mobile telephone market, a sector characterized by weak growth. The Carso Group has also acquired a cable TV company. As a result, Ericsson works with a complete customer that has operations in all areas of Ericsson expertise and system/product solutions.

Telmex has signed a letter of intent designating Ericsson as its main supplier. There is also an agreement in place whereby Telmex has first refusal on new technologies before Ericsson offers them to other operators.



Telefonos de Mexico, Telmex, is the dominant operator in Mexico. The company was privatized in 1990.

## Ericsson active in Mexico since 1904

■ Mexico is about four times the size of Sweden. The country's coastline spans 10,000 kilometers along both the Pacific and Atlantic Oceans. Mexico City, the capital, is situated 2,500 meters above sea level between two mountain ranges. With a population of 15-20 million people, Mexico City is the world's most densely populated urban area. The population of Mexico is about 94 million.

The country is a republic under current President Ernesto Zedillo. The value of its currency, Nuevo Peso, is the same as the Swedish krona. During 1995, inflation rate soared to more than 50 percent. This year, analysts believe inflation will be limited to 25 percent.

Ericsson has conducted business operations in Mexico since 1904, when it first crossed swords in competition with American ITT for leadership among telecom operators. ITT established operations in Mexico in 1882. In those days, customers needed two separate telephones to gain access to the country's entire network. The two companies merged in 1946 to form Telmex. Ericsson did not relinquish all of its former interests in Telmex until 1958, however, when a decision was made to concentrate exclusively on supplier operations.







Annika Bergbom from the Human Resources department of Ericsson Microwave Systems distributed information about Ericsson during Labor Market Days at the Chalmers Institute of Technology in Gothenburg. The meetings are arranged to provide opportunities for companies and engineering students to meet and get to know each other.

## Hectic days at Chalmers for establish new contacts

The labor market for engineering graduates is strong. Like many other engineering companies, **gothenburg** Ericsson has a considerable need for qualified technical personnel, and it's difficult to detect any decline in the number of vacancies in Ericsson companies. To provide prospective employers and engineering graduates a chance to meet and get to know each other, a series of Labor Market Days are held every year at the Chalmers Institute of Technology.

During a hectic two-day session, companies try to market themselves to technicians and engineering students, providing information about resources and opportunities for practical training and future employment.

"The Labor Market Days this year were very enjoyable," says Annika Bergbom, from the Human Resources department of Ericsson Microwave Systems. We met a very large number of people, and many of them expressed genuine interest in Ericsson."

### Attractive employer

Annika Bergbom and her colleagues met and talked with Chalmers students who are looking for permanent jobs, practical training and graduate work studies. Many of them want to stay in the Gothenburg area, which makes Ericsson Microwave

Systems a particularly attractive prospective employer.

Have graduate technicians and engineers become more difficult to recruit because of strong labor market conditions?

"Many of them are aware of their market value," Annika replies to our question. "They have opinions on wages and salaries, but as recent graduates, they also realize it's not easy for them to dictate terms of employment."

### Higher base salaries

Base salaries paid by Ericsson Microwave Systems were increased recently and first-year graduate engineers can expect a starting monthly salary of about SEK 16,500. The starting salary is high compared with many other large corporations, but slightly lower than salaries offered by smaller companies and consulting firms. But, as Annika Bergbom points out, Ericsson also offers a number of benefits and advantages that increase its employment leverage.

"Many students are attracted to Ericsson because of the development potential we offer. They want to improve their professional skills, not just aspiring to management jobs or positions as technical specialists, focusing instead on opportunities to broaden their horizons and change jobs internally. Many are also lured by the prospect of working outside Sweden," Annika Bergbom summarizes.

NICLAS HENNINGSSON

## Morgan Hill celebrated

■ Spirits were high at a recent social gathering of the employees of Ericsson Components microelectronics operations for RF power transistors in Morgan Hill, California. Barbecue parties and other social activities are common occurrences in the pleasant California climate. One good reason for a party in 1996 was a milestone reached last year when

Morgan Hill manufactured its one millionth power transistor, an all-time record in a rapidly expansive company that wants to become the world's leading manufacturer of power transistors. The Morgan Hill company was established in 1991, originally comprising only two persons, Tom Moller and Dagmar Rudiger, who together produced 5,000 transistors.

Photo: LARS ÅSTRÖM

## Expansion of Iran network

■ Ericsson has received an order for 51,000 DRX lines from TCI, the telecommunication authority of Iran. DRX is a down-scaled version of the MD110 telephone exchange used for public traffic in several markets.

The order is valued at SEK 40 million. It will expand Iran's existing 54,000-line DRX exchange, making Iran one of the largest markets for DRX systems from Ericsson Business Networks.

More than 30 communities throughout Iran will be connected by a unified telecom network based on DRX equipment. A large percentage of the materials will be produced in Sweden. The remaining portion will be made in Iran by ICI, a local telecom equipment supplier that has also been contracted for installation and start-up at customer sites.

China is Ericsson's largest market for DRX systems, with more than 330,000 lines. Another growth market is Pakistan, where Ericsson is now installing 31,000 new lines.

THORD ANDERSSON

## Ericsson UK supports cancer treatment

■ Ericsson in the UK has raised more than GBP 50,000 for the MacMillan Fund, a special foundation for cancer

**middleton gate** treatment. The money will be used to build a day-care center in Guildford, situated in southern England.

For the past two years, employees of Ericsson in the UK have collected money in a campaign that culminated recently with a presentation by Ericsson Ltd. of a check in the amount of GBP 50,000.

Representatives of the MacMillan Fund expressed their gratitude for the contribution, reminding the audience that one of every three persons develop some form of cancer, and that most people prefer not to think about the disease until it afflicts a family member or close friend.

The Fund was especially grateful, therefore, to Ericsson's employees for their donation.

## Record year for Ericsson Canada

■ Ericsson's subsidiary in Canada reported its best year ever in 1996, both in terms of commercial success and R&D results. Reported revenues increased 220 percent, and the number of employees working in sales operations rose from 245 to 355 persons. Most of the strong increase was attributable to sales of mobile telephones for AMPS and GSM standards.

Employees working in research and development activities rose from 719 to 832 persons.

### Highlights in 1996

- Ericsson became the fourth largest R&D company in Canada.
- Ericsson established a million-dollar scholarship fund at Waterloo University for a wireless telecommunication center, the first of its kind in Canada.
- A number of measures implemented during the year reduced downtime on telephone exchanges by 65 percent.
- Sales of cellular telephones increased 50 percent.
- Several new contracts were signed for private radio systems, including an installation at Canada's largest sports arena.

Ericsson has approximately 1,200 employees in Canada.

## Props becomes academic pursuit

■ This autumn it will be possible to gain university credits for Ericsson Infocom's Props training course. A project is now being assembled whereby 10 credits will be awarded for completion of the course by the Karlstad College.

The program will consist of Ericsson Infocom's Props training courses and two series of lectures. The course will be offered to Ericsson employees starting in the autumn of 1997.







## History of a telephone

In Contact 1/97, we asked if any of our readers recognized the telephone seen pictured to the right. A colleague

### Michigan

in Mölndal had been asked by an American relative to help date the telephone. There were a number of replies from which we gleaned the following information.

The telephone is probably a 1901 model designated an AC 400-440. It was most probably included in the 1911 catalogue.

The dial is not original, but was probably added in the 1930s when many telephones were modified in this fashion. The red color and the gilded metallic parts are also not original. Thanks mainly to Henrik Lundin from the Swedish Tele-Historical Collectors Club for the information.



## Carol Yu Saufong – Ericsson's Employee of the Year in Hong Kong

Ericsson's subsidiary in Hong Kong recently named Carol Yu Saufong its "Employee of the Year" at the company's annual dinner for employees. Carol Yu Saufong joined Ericsson 12 years ago, and has followed the company's rapid expansion in parallel with growth in the Chinese market. Carol started working with Ericsson as an office clerk and is now employed in logistics management in the wired and mobile network division. As "Employee of the Year," Carol Yu Saufong received a trophy, certificate of recognition and a vacation trip.

## New customer center opened in Hong Kong

Ericsson opened a customer center recently at Quarry Bay in Hong Kong. The new facility will be used primarily to serve customers and operators in Hong Kong and Macao. The first of its kind in Hong Kong, the center was built to accommodate customers from all parts of the region.

Several training programs will be conducted in the new center, with an estimated 3,000 student-days per year. The center will also offer opportunities to test various Ericsson products and equipment. An intelligent network will also be on display at the new Hong Kong customer center.

## 1996 job proposal winner named at Mölndal plant

Bengt Söderlind works with circuit board production for military defense applications at Ericsson Microwave Systems in Mölndal. He was also named recently as the winner of Ericsson's job proposal award, which includes a cash reward of SEK 25,000.

Bengt Söderlind's winning proposal was the original source of a new "Flexi-

ble BIC Solution," whereby a number of so-called micro-wire boards can be recycled and used again. He also proposed changes that allow disrupted test operations to be restarted and continued without any disturbances. His suggestions will lead to costs savings of approximately SEK 450,000.

## First telephone from new Brazilian plant

Initial planning and project engineering on a new production plant for AMPS/D-AMPS telephones in Brazil was started in September 1996. In February 1997, the first telephone produced in Brazil left the new factory.

"We have about 200 employees today, but the labor force will probably be increased in the near future," says Mats Lindskog, Operations Manager at the new factory.

Customs regulations in Brazil make it much more advantageous to conduct domestic production operations, compared with imports. The new factory will concentrate on telephone supplies for the Brazilian market, but management is also looking to large parts of Latin America as prospective future markets.

The new factory in Brazil is a prime example of technology transfers from Ericsson Lynchburg, in the U.S.

# Prize for excellence in communications

When Ericsson says that it's about communication between people, it's also about communication within Ericsson. To emphasize the increased importance of communication, a prize called the Communications Excellence Award is being established.

The purpose of the prize to recognize and encourage

outstanding communications work in internal communications, as well as external and market communications.

Projects in these three categories will be judged on the basis of several parameters: strategy, creativity, professional skill and results achieved. Projects with limited budgets will be given special attention. In order to be

eligible, the project must have been started after January 1, 1996 and be submitted before April 15, 1997.

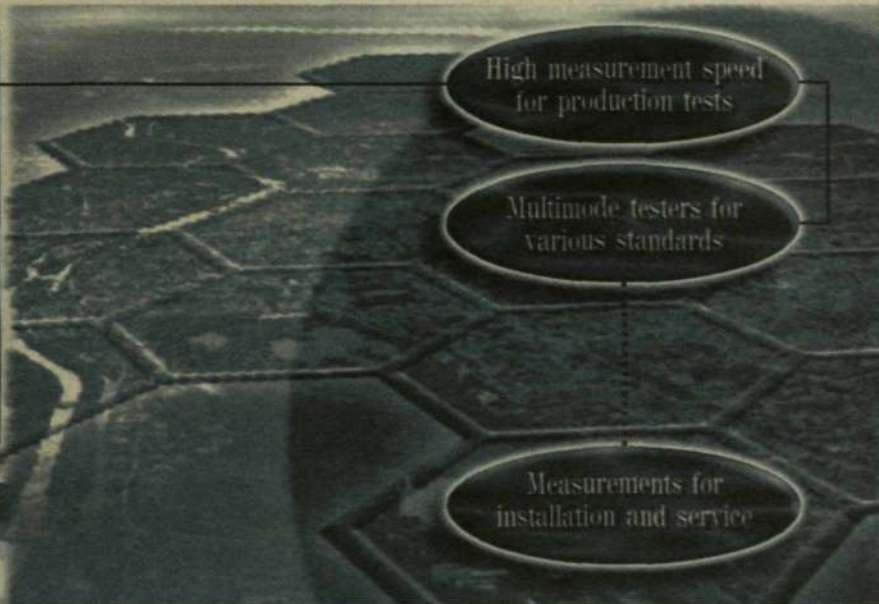
More information will be available shortly on the intranet on the corporate home page:

(<http://www.lme.ericsson.se/LMEDI/>).

The winning projects will be announced in May.

## Mobile Radio Measurement

- Application
- ✓ Analog and digital communication
  - ✓ Mobile and base stations
  - ✓ Module, single and extended tests



Standards GSM · GSM North America · PCN · DECT · CDMA Cellular · CDMA PCS 1900 · PDC



**ROHDE & SCHWARZ**

ROHDE & SCHWARZ GmbH & Co. KG  
Mühlhofstraße 15 · D-81671 München  
Telefon +49 89 4129-0 · Fax +49 89 4129-3777  
Internet: <http://www.rsd.de>



# Ericsson sets sail at Boat Show

"The Boat Show," Sweden's largest annual boat exhibition, was held recently at the Älvsjö Fair Grounds just outside Stockholm. This year's exhibition covered a surface area of 22,000 square meters accommodating 470 exhibitions.

More than 20,000 persons visit the Boat Show in Stockholm every year. This year, Ericsson was featured prominently as a major sponsor of Rib Cat, the fastest rubber boat in the world, and exclusive sponsor of Sweden's national sailing team. Ericsson signed its sponsorship agreement in the spring of 1996,

and the contract extends through year-end 1997. Ericsson's name was displayed prominently at all sailing events during the Olympic Games in Atlanta, and Ericsson regards the sport of sailing as a natural extension of its business operations as a major supplier of communications equipment. In the motorboat section of this year's Boat Show in Stockholm, Ericsson also played a dominant role as the sponsor of Rib Cat. The boat was on display throughout the summer of 1996 on Sweden's east coast and a major attraction at last summer's Water Festival. The Rib Cat has reached a top speed of 101.8 knots.



## ISDN upgrade

sweden

■ Ericsson Telecom Sweden and Telia signed an agreement recently to upgrade all 17 ISDN switching stations in Sweden. The work has already been started

and is expected to be completed early in 1998. A completely new package of services, including several new functions, has also been developed.

## Ericsson Components wins "best improvement" award

The prize for this year's "Best Improvement" quality contest, conducted by Ericsson Components was awarded recently to the "Shorter Through-Time" project submitted by the integrated silicon circuit board production team of the Microelectronics business unit,

The jury motivated its choice based "on long-term and sustained work focused on systematic efforts to shorten through-times, involving contributions from all production units, including the implementation of shift work."

Two other projects qualified for the final round of selections. The Power Modules unit of Energy Systems submitted a project concentrated on increasing the number of approved power modules in production, called yield improvements. Opto-components, a part of Microelectronics, took part with a development project focused on silicon chips based on the Props model.



Winners of this year's "Best Improvement Project" were this team from Ericsson Components: (l-r) Jan Olsson, Reza Fartachi-Naini, Diana Ståhl, Roland Prinze, the Project Manager, Johnny Österlund and Mikael Brorsson.

## World Class Supply process

■ In Australia there is a group of Ericsson employees who are keen to tell the world about the commercial advantage that can be gained through a tool known as MRPII. The more Ericsson companies that join the process, the greater the potential return for the entire Group.

Ericsson Australia is part of an elite group of companies world-wide that has achieved Manufacturing Resource Planning (MRPII) Class A status. MRPII is a company-wide management system that delivers significant efficiency improvements for businesses which manufacture and supply products.

Originally an American concept, MRPII has provided the tools for Ericsson Australia to benchmark against world class manufacturing standards, and achieve operational excellence. Melanie Steward, MRPII Project Co-ordinator for Ericsson Australia, explains the benefits of MRPII and how the process have been implemented.

"MRPII" is all about taking control of your supply business and shifting the focus back onto the real issues... issues like inventory control, customer satisfaction and cost control. It's all about working smarter.

"It is also important to differentiate MRPII from Quality Certification because there is often confusion surrounding the two concepts. MRPII will work along QA to improve processes but it places no extra work-load demands. Essentially, it helps develop a new way of working which becomes ingrained and transparent, more like organised common-sense," explains Melanie.

Michael Furey, MRPII Remote Project Leader, reinforces the cultural impact of the MRPII process.

"MRPII is really all about change management. It provides a proven framework that allows companies to 'cut the chase' and implement a clean, simple customer supply process which gives them a competitive advantage in terms of performance consistency, ability to improve, and people skills", says Michael.

Since implementing MRPII, Ericsson Australia has demonstrated the bottom-line benefits of the program which include inventory record accuracy, inventory reductions, improved control over supply channels, customer service improvements, increased productivity, and enhanced communication both with suppliers and internally.

Adrian Jenson, Director of the Supply Business Unit with Ericsson Australia, is a strong advocate of MRPII.

"Our progress toward MRPII has increased our knowledge of processes and driven significant process improvements that are yielding benefits to our customers through improved delivery performance and shorter lead times, and to our company through improved utilisation of resources and capital," according to Adrian.

### Company-wide education

Implementing MRPII into Ericsson Australia has involved a number of different steps. Initially, a company-wide education program was undertaken to explain the benefits of the system and provide an overview of the program's objectives. After an initial assessment of work practices and how they could be improved through MRPII, company-wide task forces were established to introduce the new concepts.

The final strategy to roll-out the program involved vertical quick-slices within the manufacturing areas, and sub-project groups within the customer business units.

Part of the challenge of implementing MRPII has been to integrate the relationship with external suppliers, including other Ericsson companies, when those suppliers are not using the same mode of operation.

### Tangible benefits

"MRPII delivers tangible benefits. As more companies within Ericsson worldwide adopt the concept there will be a common base of business knowledge and greater consistencies in the way we manage our supply processes. At the end of the day, this will help us run our businesses with greater levels of customer service and improved productivity, at a lower operating cost", emphasises Michael Furey.

## Strategies for growth

■ Infocom Systems recently produced a new document entitled "Strategies for Growth." The document comprises an analysis of future options for Infocom Systems, including the new business area's objectives and overall vision. It reviews various departments of constituent business units, as well as personnel issues, IT strategies and other focal questions. The document may be accessed on the Internet at the following web site: <http://bn.ericsson.se/strategies/index-strat.html>. Printed copies of the document may be ordered through memo ID: ETX.ETXSJAA.





# vacancies

## AT ERICSSON

■ This is a selection of vacancies within the Ericsson corporation. They are published in the electronic News system, which is being updated once a week.

For further information about advertising here, send a memo to LME.LMEJOB.

Contact no. 3 1997

Updated March 10

### international

Ericsson Intracom Ltd., Leicester, UK

Ericsson Intracom provides data access products to Ericsson worldwide. The Engineering group of approximately 30 engineers work in small but focussed teams of mixed discipline engineers to develop the next generation of products with ever-increasing functionality. We operate in an open, relaxed and friendly environment.

Our new product development programme has led to the need to recruit additional engineers who can work with little supervision, learn quickly and show ingenuity. We are looking for people who have good inter-personal skills for interfacing with their peer group.

To find out more about the company and its products check out our Web site: <http://terminus/Welcom.htm>

#### ABOUT LEICESTER

Situated at the very centre of the country, Leicester is ideally placed for exploring England. Among the city's own attractions are several large shopping centres, both in the city centre and on the outskirts, the largest outdoor market in Europe, theatre, Roman remains, museum, all in a rich, multi-cultural atmosphere which brings its own added interest. In the county we have beautiful countryside with many places of interest such as Bradgate Park, Rutland Water and Bosworth Park.

#### SOFTWARE ENGINEERS

● The software engineering group consists of approximately 12 people involved in the complete software cycle, from specification and analysis to final code and test. We are looking for graduates with approximately 4 years experience of software development in a real-time structured environment using 'C', ideally with data comms or network management experience.

#### HARDWARE ENGINEERS

● We are looking for degree qualified people with 3-5 years design experience in digital and embedded 16/32 bit microprocessors, FPGAs and high speed digital circuits, to design and develop a range of complex 32 bit microprocessor multi-function systems. These encompass high speed digital and FPGA/FP LD circuits, utilising the latest processor architectures.

#### SYSTEM TEST ENGINEERS

● We need people to be involved at the very outset of projects to contribute to product definition as well as formulating and implementing functional and system level tests. An understanding of systems and applications from the end-user's point of view is important. Qualifications/experience required are a relevant degree with 3 years communications experience, including any of the following: ATM, Frame Relay, ISDN, X25, CISCO, Protocol analysis.

Contact: Christine Hickman, phone: +44 116 2537534, e-mail: [chris...terminus.ericsson.se](mailto:chris...terminus.ericsson.se)

Dalian Ericsson Communication Company Ltd (DEC)

Is a joint-venture between Ericsson and Hua Lu, working in the field as a service provider in the Liaoning province, in the North of China. The company is mainly working with operation activities for both the BN and BR business areas, such as installation engineering, DT, construction, testing, service etc. DEC is located in the coastal city of Dalian, a city with 4 million citizen, which is developing rapidly. 120 employees are working in the company today.

Our finance division is looking for a

#### FINANCE DIRECTOR

● The main scope of responsibility for the position is as following: To ensure that there is a competent

Finance division. Provide guidelines and policies within the finance area. Prepare actual result, budget and estimate. Report both internal (management and Board of Directors) and external (Ericsson, Chinese authorities etc). Supervise the purchasing. Management of the IS/IT unit, together with an experienced expatriate.

The division is also working with matters as: Sales contract, travel agency, export and import handling.

Qualification: University degree in business Science. Five years experience in the field as finance manager. Familiar with Ericsson reporting system (FIRE). Good knowledge in spoken and written English. Ability to understand cultural differences. Interested?

Contact: Karl-Henrik Sundström, Memoid: ETX.ETXKHSU, Telephone: 08/7195159, Claes Engvall, Memoid: ERA.ERAENG, Telephone: 08/7572903, Magnus Ask, Memoid: ETX.ETXMSAK, Telephone: 08/7197481 or Kjell Larsen, Memoid: ETC.DECKLAR. Internet address: <http://www.dlut.edu.cn/eindex.html>

Ericsson Components, Swindon Advanced Telecommunications

#### RF, ANALOG & VLSI DESIGN

The Microelectronic Division of Ericsson Components is dedicated to the development and application of microelectronics to Ericsson advanced systems and products. The division continues to recruit talented designers, both for our Design Centre in Swindon and Headquarters in Stockholm. These locations provide a complete range of services to support the design and production of analog, digital and mixed-signal ASICs for advanced telecommunications, using the latest technologies.

● In line with an ongoing strategy to strengthen our leadership position in international telecommunications, we are looking for designers with relevant experience in one or more of the following areas: DIGITAL VLSI DESIGN RF IC DESIGN DIGITAL VLSI DESIGN: ISDN, ATM, GSM, PCN, VHDL, Verilog, C. Design for test. Logic synthesis. High complexity ASICs.

RF IC DESIGN: RF circuit integration. Filters, mixers, synthesizers. Low noise amplifiers. IF amplifiers. Mobile comms applications.

ANALOG IC DESIGN: High performance. Integrated filters. High level analog modelling. Mixed analog/digital circuits. Bipolar, CMOS, BiCMOS.

This is an excellent opportunity to join a high-calibre team working on leading edge technology, where you can be assured of an environment that recognises your professional engineering status. International liaison with colleagues and the opportunity for international travel from an integral part of these positions. Salary will be commensurate with experience, and a competitive benefits package is offered.

Contact: Lise-Lotte Bergenholm, Personnel Dept, Stockholm, +46 8 7574720, memo EKALLBE or Erik Bjernul, +46 8 7574184, memo EKAERBJ. Application: The Personnel Dept. Ericsson Components, Pagoda House, Westmead Drive, Westlea, Swindon SN5 7UN.

Ericsson Toshiba Telecommunication Systems K.K., Japan

#### GENERAL MANAGER

ERJ Project Office, Shin-Yokohama

● The General Manager shall report to the President of ERJ and be a member of the ERJ management team.

The General Manager shall in addition to his responsibility as Line Manager act as Project Manager.

The overall responsibility for the project office is: be responsible for all MSF FOA and roll-out project (major development phases as well as various small projects), establish together with other line organization proper procedures and forums for project planning, ordering and control, prepare depart-

ment as well as project budgets, follow up and report financial issues related to the projects, monthly report on a consolidated basis of the different projects, be a member of RMOJ forums such as PMSG, AS Board, ASM meetings, OSG and P5G. education of the organization in project management, establish good working methods towards the main projects, ensure a good supply of project managers.

Contact: Tomas Hillås, +81 45 475 0005, Thomas Axelsson, +46 8 7570887 or Göran Henriksson, +46 8 7570705. Application: Michael Regner (Memoid: NRJ.ERJMR), Ericsson Toshiba Telecommunication Systems K.K. Shin-Yokohama Office, Shin-Yokohama Hayama Dai-4 Building, 2-1, Shin-Yokohama 1-chome, Kohoku-ku, Yokohama 222, Japan.

Ericsson Ltd, UK

#### SYSTEM TEST PLANT SUPERVISOR - LOCAL CONTRACT

● Located at Ericsson Guildford, England, we are looking for a System Test Plant Supervisor to provide maintenance and customer support on test plants and test equipment for all ETL/G Design STP activities.

You will be responsible for making a direct contribution to the development and successful operation of the department and take a key role in decision making. You will work with colleagues to develop and implement product support strategy, objectives and improvement processes.

You will have the responsibility of Line management, technical support and project management. You will take responsibility and accountability for the day-to-day line management of a group and its effective performance and delivery of results.

Qualifications, Experience: Minimum HNC/HND or equivalent in Electrical Engineering, Telecommunications, Computing. Minimum 5 years relevant experience in the Telecommunications industry. Minimum of 3 years AXE10 experience in a maintenance, installation or support capacity.

Contact: Jim Newell - ETL.ETLJIM or Jo Howat - HR Officer - ETL.ETLJOHT.

Ericsson AS, Oslo, Norway

#### SOFTWARE DESIGNERS

Our Datacom Design department develops and maintains datacom products and services for Ericsson's digital mobile systems for GSM, D-AMPS, PCS1900 and PDC. The department is a resource and competence centre for mobile datacommunication within Ericsson.

● We are looking for software designers with experience from and interest in on or more of the following areas: Data communication. Internet protocols (e.g. TCP/IP, SLIP, PPP). Design and programming of real-time systems, based on C/C++ and SDL methodology. HW oriented programming. AXE10 System Design.

We are offering you: Challenging tasks within an exciting and fast growing area. Excellent opportunities for personal development.

Qualifications: Experience with telecommunications. Good spoken and written English. Preferably ability to understand Norwegian. B.Sc. or equivalent.

#### QUALITY

● We are looking for a person with experience from and interest in quality work. One task will be to increase the awareness of quality aspects within the organisation by informing and educating the personnel. Another task will be to find and evaluate new methods and activities to increase the quality in our design projects.

We are offering you: Challenging tasks. Excellent opportunities for personal development.

Qualifications: Experience with quality work. Knowledge of ISO 9000, TQM and CMM. Good spoken and written English. Preferably ability to understand Norwegian. B.Sc. or equivalent.

## Times change...

Ten years ago, external provisioning was an unknown concept. Today, it's a part of Ericsson's everyday life.

To keep our competitive edge sharp, we must focus our internal resources on core operations and complement these with external products and partnerships.

To help us, we have developed our own External Technology Provisioning (ETP) method. A strategic and practical guide to help us to see the bigger picture and to collect the information required to make the right commercial decisions.

Not just for the present, but for the entire life cycle of a product.



a step in the right direction!

Facts: The ETP method team in Karlstad organises courses, seminars and implementation support for external technology provisioning. During the spring we will be arranging international and Swedish courses in Stockholm for everyone involved in external provisioning, whether they work in marketing, product management, provisioning, purchasing, operations, or any other field.

ERICSSON

Ericsson Infocom AB  
Box 1038, 651 15 Karlstad  
<http://etpweb.ericsson.se/home.htm>  
memo lme.lmetpp

If you are interested in a course, please call Anna Kihlén at +46 54 29 41 34.



## PROJECT MANAGERS

● We need project and subproject managers and to manage our design projects of 40,000-80,000 manhours. We are part of an international organisation, and coordination between different Ericsson companies in different countries will be one of the tasks. Thus, some travelling is required.

We are offering you: Challenging tasks within an exciting and fast growing area. Excellent opportunities for personal development.

Qualifications: Experience as project manager. Good interpersonal skills. Good spoken and written English. Preferably ability to understand Norwegian. B.Sc. or equivalent.

## FUNCTION TEST LEADER

● We need function test leaders to plan and manage function test in our design projects. We are part of an international organisation, and coordination between different Ericsson companies in different countries will be one of the tasks. Thus, some travelling is required.

We are offering you: Challenging tasks within an exciting and fast growing area. Excellent opportunities for personal development.

Qualifications: Experience with function test. Good interpersonal skills. Good spoken and written English. Preferably ability to understand Norwegian. B.Sc. or equivalent.

## INTERNATIONAL STANDARDISATION WORK

● We are looking for persons with experience from and interest in standardisation work. Main tasks will be participation in standardisation committees (e.g. ETSI), technical support towards design projects and technical market support. Some travelling is required.

We are offering you: Challenging tasks within an exciting and fast growing area. Excellent opportunities for personal development.

Qualifications: Experience with standardisation work. Good spoken and written English. Preferably ability to understand Norwegian. B.Sc. or equivalent.

**Contact:** Inger Nordgard, tel. +47 66 84 16 27, email: etoin@eto.ericsson.se, MEMO: ETO.ETOIN or Espen Thorsen, tel. +47 66 84 13 54, email: etoet@eto.ericsson.se, MEMO: ETO.ETOET. Application not later than 970404: Ericsson AS, Human Resources, P.O.Box 34, N-1361 Billingstad. Mark application "TX/D"

Ericsson Ltd, Surrey, UK

## PRINCIPLE PRODUCT ENGINEER BSS

● Located in Guildford, Surrey, England, We are looking for a Principle Product Engineer responsible for BSS product management toward Vodafone UK. This role requires customer contact and co-operation with many parts of Ericsson to ensure that our BSS/RBS products fit to Vodafone's demanding future needs.

You should have a degree or equivalent in Engineering/ Communications. Have at least 5 years Radio/telecom experience in Cellular Communications field. Good people management skills. Excellent Interpersonal/Communications skills.

**Contact:** Stewart Lacey - ETL.ETLSTLY

## SENIOR/PRODUCT ENGINEER - BTS

● Located in Guildford, Surrey, England, We are looking for a Product Engineer with a good technical background in Ericsson Cellular Base Station Products who will be responsible for local product management of base station products towards Vodafone UK. Duties will include handling customer requirements, technical discussions and presentations, supporting local organisations with product information and working with contacts throughout Ericsson to ensure that our Base Station products remain competitive in our market.

You will need to have a degree or equivalent in Electronic/ Communication Engineering 2 years radio/cellular base station products, including knowledge of hardware and software issues. Market/commercial awareness Strong interpersonal/communications skills

**Contact:** Stewart Lacey - ETL.ETLSTLY

## SENIOR/PRODUCT ENGINEER - BSS

● Located in Guildford, Surrey, England, we are looking for a Senior/Product Engineer to work with base station subsystem and radio network. Duties will include: specifying product requirements, making product presentations internally and externally, providing support in radio network investigations, handling product questions from the customer.

You will need a degree or equivalent in Electronic/Communications Engineering. 2 years technical/product experience with cellular radio networks in one or more of the following: Radio Network functionality, GSM standards, Cell

Planning, Radio Network techniques, radio network supervision/performance management.

**Contact:** Stewart Lacey - ETL.ETLSTLY

Ericsson Ltd, Surrey, UK

## SENIOR ACCOUNT MANAGER

● Located at Ericsson Guildford, in England, we are looking for a Senior Account Manager to take responsibility for non AXE products such as MXE, OSS, Minilink.

You will also deal with offers, negotiations and commercial contract maintenance, contract and marketing of new releases. Dealing frequently with customer - relationships.

You should have a degree or equivalent ideally in Engineering or other appropriate discipline. Minimum 4 years recent experience in a business/project team situation, handling commercial, marketing or planning work. Previous marketing experience in a business to business environment. Knowledge of telecoms networks in the UK.

**Contact:** Iris Freeman - Senior HR Officer, ETL.ETLISFN

Radio Systems Division, Ericsson Communications Ltd, Wellington, New Zealand.

## CUSTOMER SUPPORT ENGINEER - Short Term

● DESCRIPTION & REQUIREMENTS: We are looking 2 people with experience in CMS88 to start as soon as possible to work for a short term of up to 6 months in our support team. Our support team provide system support services to our customer such as TR handling, Correction Package Handling, Consultation and 24hr Support. You would focus primarily on AXE support. It would be an added bonus if you had RBS884 knowledge.

Your customer's network consists of 1 iHLR, and 5 MSCs, 1 MXE for Messaging, and SMAS for Wireless IN and we have just implemented a Cellular Digital Packet Data (CDPD) network.

**Contact:** Brent Wildbore, +64 4 4601054, ENZ.ENZBCW

Ericsson Ltd, UK

## PRODUCT DEVELOPMENT MANAGER

Department: MARKET DESIGN, UK SPEECH AND SWITCHING SOLUTIONS. (ETLIXSIED)

● As a member of the Market Design Department Management team, the Product Development Manager is responsible for making a direct contribution to the development and successful operation of the department. The Manager works with his/her colleagues to assist in developing and implementing department strategy, objectives and improvement processes and is part of the management of Public Systems.

The Manager of the product development section is responsible and accountable for the line management of the section in order to enable the effective implementation of product strategy in line with the business need and customer expectations.

The Manager is responsible for ensuring personnel understand and focus on the organisation's business objectives and for encouraging appropriate behaviour, such as cross functional team work, in order to achieve those objectives. He/she manages and facilitates the development of the product area's close working relationships with other Ericsson groups as appropriate.

The Manager leads, motivates and develops personnel to undertake technical work to meet specification, quality, time and budget objectives and to enhance their skills to meet the future needs of business.

ESSENTIAL SKILLS: Educated to degree level in a technical subject. Proven ability in managing people. At least three years experience in a development environment. Some project related responsible role.

**Contact/Application:** Pritesh Patel, Telecommunications Centre, Burgess Hill, West Sussex.

Ericsson Telecommunications Sdn.Bhd, Malaysia

## SYSTEM INTEGRATION MANAGER

● Reporting to: Project and Implementation Manager

Responsibility: Responsible for the implementation of all switching nodes in the network. He/She is the interface to the performing line organisation and the customer, specifies the required resources and controls the progress in compliance with the project schedule and budget.

Requirements: 3-5 years of experience in testing/installation of AXE with at least one in a GSM environment. The candidate should be flexible, organised, customer and result oriented. Good English communication skills is essential.

**Contact:** Jayasimhan Ashok, Project and Implementation Manager, Customer Division Mutiara Telecom, Ericsson Telecommunications Sdn.Bhd, 15/3 Jalan Sepana, 40906, Shah Alam Selangor, Malaysia, Memoid:ECM.ECMJA.

Ericsson GmbH, Duesseldorf/Germany

## COMPETENT EMPLOYEES FOR APZ/IOG / BSC / MSC

Ericsson GmbH (EDD) is the major local company of Ericsson in Germany and is located in Duesseldorf. EDD is responsible for all Telecom activities on the German market. In the area of GSM our main customer Mannesmann Mobilfunk is operating the largest private GSM Telephony network in the world.

● The business unit Mobile Telephone and Data Systems is a key supplier in its local market and will continue to grow during 1997. To service our customers we are looking for additional competent employees in the following areas: APZ/IOG, BSC, MSC.

RESPONSIBILITIES: to assist in building up the expertise and to transfer knowledge within the department. Problems have to be analysed and possibly solved by means of software corrections.

MAIN TASK: to carry out AS testing and handling procedures for software update packages and to demonstrate them to the customer thru the local customer support center. Further to maintain and develop market adaptations and corrections as well as to train our local employees in above matters.

REQUIREMENTS: It is essential that candidates have good system knowledge of AXE 10 with at least 5 experience preferably in CME 20 GSM systems. Skills are required in the areas of mobile switching, traffic concepts, and telecommunication networks. Personal skills as a thorough and methodical approach to work, be able to work as a team member, be flexible and responsive to changing work patterns and demands. Very good knowledge of English is required.

The work place for above mentioned positions are located at Ericsson office in Duesseldorf. Contracts will be offered on a short term or long term basis.

**Contact:** Bertil Karlsson, + 49 211 534 2322, memo EDD.EDBEKA.

Ericsson Radio Access AB, Kista

## TECHNICAL SALES SUPPORT TO SINGAPORE

● We are looking for an experienced sales support willing to work in Singapore for 1-2 years. You will support the local staff as regards a newly established business unit, the Public Indoor Coverage, which means that you will give technical advice, be a sales support and be responsible for the contacts with Sweden in this respect.

You have a good technical education, experience in running projects and broad technical skills and hopefully RF skills.

You have good written and verbal skills in English and it is an advantage if you have previous knowledge of Ericsson.

You have power of initiative, high motivation and you have good ability to co-operate.

**Contact:** Ulric Brandt, phone +46 8 757 5703 or Lars-Åke Eriksson, personnel, phone +46 8 404 3865. Application: Ericsson Radio Access AB, KI/RSA/HPS Pia Bolmgren, Box 11, S-164 93 STOCKHOLM, Sweden

Ericsson Eurolab Deutschland GmbH

The department EEDILU and the AXE Mobile Core organisation (AMC) is looking for a

## PROCESS ENGINEER

● The main responsibility is the improvement of the work processes in EED/LU and AMC according to the TQM plan at EED/LU. The position reports to EED/LU/QC.

The main tasks are: Support the AMC Process Manager. Co-ordination of process management (PM) activities, such as maintenance and improvements of processes. Supporting and being the driving force on process management methods. Support the organisation with specific knowledge within the current work area.

As a suitable candidate, you have a very good knowledge in how to maintain and improve processes.

You should be familiar with the Ericsson-way-of-working and the existing processes in your current work area. Knowledge of different methodologies used in software engineering is a definite plus. Since you work as a moderator and consultant we require a structured way of thinking, good communication skills, perseverance and the ability to be the driving force behind PM. Overall you should see this job as a challenge in improving our existing way of working.

**Contact:** Andreas Bleeke, EED/LU/QC, dial:+49-2407-575-394, memo:EED.EEDANB or Doerte Kaulard, EED/H/R, dial:+49-2407-575-163, memo:EED.EEDDKA.

Ericsson Toshiba Telecommunication Systems K.K. - ERJ

## IN GOES CELLULAR IN JAPAN

Business Area Radio will during summer 1997 launch a new cellular IN system, based on AM AXE Technology, for mobile subscribers on the Japanese market.

We are expanding very rapidly with our cellular mobile system and have now established operations in six different regions in Japan. Our headquarters are located in Tokyo.

We have vacant positions, long term and short term, in both Japan and Sweden. Employment in Sweden includes possibilities for future assignments in Japan. We are looking for people from all over Ericsson to support us in this challenge.

## FIELD SUPPORT ENGINEERS/ SYSTEM EXPERTS

● The responsibilities include on-site troubleshooting, problem analysis, technical support of software implementation, participation in emergency support, technical consultation and communication with customers.

We require previous testing experience of AXE and working experience within Ericsson.

Starting date: 1997-03 Location: Japan

**Contact:** Akira Kawada, phone +81 45 475 0435, memoid: NRJ.ERJKAW, Ulf Sundberg, phone +81 45 475 0077, memoid: NRJ.ERJUFSG, Anders Birkedal, phone +81 52 586 1676, memoid: NRJ.ERJBIRK, Gullic Fahlgren, phone +46 8 757 1728, memoid: ERA.ERAFAH or Anna Lindvall, phone +46 8 404 7662, memoid: ERA.ERALIAN, email: anna.lindvall@eraj.ericsson.se

## TEST AND SUPPORT ENGINEER CMS 30

● You will work with installation testing, AS Rollouts and other software implementation with in CMS 30 networks including IN.

We require previous experience from the telecommunication industry and working experience within Ericsson.

Starting date: 1997-03 Location: Japan

**Contact:** Per Jansson, phone +81 45 475 0084, memoid: NRJ.ERJPEJA, Ulf Sundberg, phone +81 45 475 0077, memoid: NRJ.ERJUFSG, Anders Birkedal, phone +81 52 586 1676, memoid: NRJ.ERJBIRK, Gullic Fahlgren, phone +46 8 757 1728, memoid: ERA.ERAFAH or Anna Lindvall, phone +46 8 404 7662, memoid: ERA.ERALIAN, email: anna.lindvall@eraj.ericsson.se

## IN IMPLEMENTATION AND TROUBLE SHOOTING

● You will work with integration, testing, software rollout and/or trouble shooting during the introduction of IN in Japan.

This introduction will take place in the April-October timeframe. Both short and long term applications are welcome.

Starting date: As soon as possible Location: Japan

**Contact:** Ulf Sundberg, phone +81 45 475 0077, memoid: NRJ.ERJUFSG, Anders Birkedal, phone +81 52 586 1676, memoid: NRJ.ERJBIRK, Gullic Fahlgren, phone +46 8 757 1728, memoid: ERA.ERAFAH or Anna Lindvall, phone +46 8 404 7662, memoid: ERA.ERALIAN, email: anna.lindvall@eraj.ericsson.se. Application: Ericsson Radio Systems AB, JHS Ann Beer 164 80 STOCKHOLM

Ericsson Montreal (Canada) LMC

## CMS 8800 MAINTENANCE PROJECT LEADER

● If you are looking for a new challenge, new responsibilities, in a good work environment, read carefully the following:

Ericsson in Montreal is seeking a Maintenance Project Leader for the Monitoring and Management of hardware and software maintenance activities for CMS 8800 Mobile Telephony System.

This will be an excellent opportunity for the chosen candidate to enter into the project management for telecom field and /or build on previous telecom experience.

Responsibilities: Issue annual maintenance assignments (totaling over 600 kilo man hours) to the organizations directly involved in CMS 8800 development - spanning over 7 + countries. Plan, control and follow-up as well as act upon deviations from the plan. Ensure and coordinate dedicated resources to provide the best use of those resources. Ensure quick turnaround and shortest possible life-cycle from customer to solution. Facilitate process



and procedure improvements. Administrative support to be provided.

Requirements: Bachelor in engineering / Science or equivalent experience. A minimum of four (4) years in project/process management (concentration on SW development). Strong networking, planning and facilitating skills.

**Contact/Application:** Mr. David Kunz (LMC.LM-CDKU2) Phone #514 345 7900 X2725 or Human Resources Dominique Roy (LMC.LMCDORO)

PT Ericsson Indonesia, Jakarta, Indonesia

### TECHNICAL SUPPORT SPECIALIST FOR DRA1900 (WLL)

Ericsson in Indonesia needs a Technical Support specialist for DRA1900(WLL/DECT) to support all our customers. In Indonesia we have several customers who have installed DRA1900. One of our customers have signed a service agreement with Ericsson for technical support.

We are looking for somebody with good experience and knowledge of DRA1900 or other WLL products. The task for the technical support specialist is to help EID build up a support organization for DRA1900 and support our customers. This means both giving technical guidance and help to our customers as well as start up all the support routines. Today within the technical support group we have knowledge and competence about support routines but lacks knowledge about DRA1900.

Appropriate experience and qualification is: minimum 1-2 year of DRA1900 or other WLL products, suitable applicants are installation testers or support engineers, good knowledge in English is a must.

**Contact:** Charlotte Johnson, Technical Support Manager, Memo: EID.EIDCJ, Phone +62 21 769 2222.

PT Ericsson Indonesia, Jakarta, Indonesia

### IMPLEMENTATION MANAGER

Passive Optical Networks (Customer Access Network Optical Fiber, Can-Of)

We are a fully owned Ericsson subsidiary involved in major Access Network Projects. We recently signed a multimillion dollar contract for the

supply of 264,000 Lines of Access Network equipment based on Passive Optical Network standard for a major customer in Jakarta area. The project involves SDH, LOC3,IRIDES and associated equipment summarized such as, 12 exchanges, 340 ONUs, duct work, OF cables and splitters. The project is turn key.

We are in the process of building up the Implementation department within the Operations Division and are looking for an enthusiastic, energetic and experienced person to build up the Implementation organization.

**Essential Functions:** To form the Implementation department by recruiting and training the personnel to fulfill the requirements from the Project in terms of deliverables, quality, timeliness and budget. Work directly with the customer and other departments within Ericsson to investigate, track and resolve Implementation issues. To set objectives, and structure, and to plan the activities.

**Job Requirements:** The candidate must have previous Management experience from Implementation Projects of similar nature. He/She must be well versed in the Ericsson SDH technology and must possess excellent knowledge of Installation/Testing techniques.

**Job Duration:** One year Long term expat status, commencing April 7, 1997.

**Application:** Krikor Tashadian, General Manager, Operation, PT Ericsson Indonesia via MEMO : EID-KAT or FAX to +6221 769 7279

Ericsson Eurolab Deutschland, System & Product Management, Aachen, Germany

### CME20/CMS40 PRODUCT AREA SWITCHING

If you enjoy demanding work and can respond well to significant challenges and responsibilities, why not become a member of our team? Here at EED we have the overall Product Area Switching co-ordination responsibility for CME20 & CMS40 and we are looking for people to work in system management & operative product management. Please refer to the EED/X/D home page in the EED home page on the www for further information about the department's activities.

We are working with the following mobile applications & study areas: GSM systems, DCS1800 sys-

tems. PCS1900 systems. New satellite network applications. Studies about future MSC evolution.

Suitable candidates possess a relevant engineering degree (e.g. telecommunications, electrical, or software engineering) with a minimum of 4-5 years of AXE development or testing experience and preferably at least 2-3 years of experience in system-level technical development or testing. Experience with GSM or other mobile telephony development is advantageous, but not absolutely necessary. Good analytical skills are essential. Ability to meet LPMs and customers from time to time is advantageous.

Within the System & Product Management department we are looking for system engineers in the following areas:

### SYSTEM MANAGEMENT

System Management focuses on a range of system level tasks which are necessary to ensure progressive and continuous development of Ericsson's CME20 & CMS40 switching nodes in an orderly and evolutionary manner. This work involves a broad range of activities including RS writing and system investigations.

We are particularly interested to talk to people who can provide significant competence in one or more of the following areas: Data communications, ISDN development, IN development, Application Modularity development.

Other assets would include good knowledge of the ETSI GSM/INAP or ITU-T ISDN specifications/recommendations or any other competence area which you think may be relevant for CME20 and CMS40 system management work within product area switching.

**Contact:** Leo Garon EED/X/DEC, via phone +49 2407 575 242, memo EED.EEDLEO or Doerte Kaulard EED/H/R via phone +49 2407 575 163, memo EED.EEDDKA.

### OPERATIVE PRODUCT MANAGEMENT

Operative Product Management has the following responsibilities and main tasks and in the area of product area switching: technical support to LPMs and SP M world-wide, RS writing and co-ordination, and active participation in ETSI G SM standardisation.

We are looking for people who have significant telecommunications experience in either develop-

ment, testing, standardisation or product management. Experience in GSM, another mobile telephony area or ISDN is highly valued but not indispensable. IN competence would be especially appreciated.

**Contact:** Stefan Blomqvist EED/X/DOC via phone +49 2407 575 238, memo EED.EEDSTB or Doerte Kaulard EED/H/R via phone +49 2407 575 163, memo EED.EEDDKA.

### TOOLS, METHODS AND PROCESS DEVELOPER

X/D department requires a tools, methods and process (TMP) developer to work with PAX early phase design (including pre-pre-study and pre-study). In addition the person shall work with "system level" design TMP aspects, according to AXE10 design model, for PAX development.

This includes the System Modelling process (during feasibility study phase) and the System Co-ordination process (during execution phase). The X/D TMP developer shall work closely with complementary developers in AMC and later phase TMP developers in PAX to ensure that PAX has a set of tools, methods and processes for early phase design which is well co-ordinated with our key development partners.

Suitable candidates should have significant level of experience in development (especially early phase design) and ideally some experience in tools and methods and/or process development. Nevertheless anyone who is interested in this sort of work and who believes that he/she can make a valuable contribution in this area will be considered. This position will be located in the PAX system management group.

**Contact:** Ari Peltonen, EED/X/DC, via phone:+49-2407-575-222, memo:EED.EEDATP or Doerte Kaulard, EED/H/R, via phone:+49-2407-575-163, memo:EED.EEDDKA.

### EARLY DESIGN PHASE PROJECT LEADER, CME20/CMS40

The System and Product Management Department at EED has the responsibility to organise and run PAX (RMOG DSA Product Area Switching) projects before TG1. This includes the development phases Pre-pre-study and Pre-study. We are currently

## INNOVATIONS

### for reduced distribution costs

The Nefab packaging concept was developed to meet the demanding requirements of the telecom industry. Today most major players in this market utilize our export and reusable packaging.

Our products play a vital role in reducing costs throughout the supply chain. They are used for protecting goods sent to all corners of the world.

But we do not stop there. Together with Ericsson we continuously develop new innovative solutions to simplify handling and distribution. Boxing clever - square ideas that make the world a little rounder.



The packaging company Nefab, established in 1949 in Hälsingland, is market leader in Europe in the area of transport packaging from sheet material and steel. Nefab has subsidiaries in twelve countries of which six have production units.

As of 1997 Nefab has been appointed First Tier Supplier of hard packaging to Ericsson Telecom AB.

# NEFAB

Nefab Emballage AB, Nordgrens väg 5, SE-822 92 Alfva, Sweden. Phone +46 271 590 00, Fax +46 271 590 60. Internet: WWW.nefab.se



looking for a project leader for these Early Design Phases (EDP).

The suitable candidate will be someone who has good experience as a project leader and, if possible, experience in EDP development (especially requirement definition phase).

The nature of Pre-Prestudy and to a lesser degree Prestudy is that the project content is changing regularly. In addition some aspects of the methodology during these early phases are not yet as well developed and clear as in later phases.

We require a project leader who can gain a reasonably good grasp of the technical content and who understands the technical issues. Finally, we in PAX have strong requirements to reduce EDP lead-times, which will require efficient and reliable project management skills.

All these factors make for a very challenging position.

**Contact:** Leo Garon EED/X/DEC, phone:+49-2407-575-242, memo EED.EEDLEO or Doerte Kaulard EED/H/R via phone:+49-2407-575-163, memo: EED.EEDDKA

Ericsson A/S, Norway

## SW DESIGNERS FOR SDH PROJECT IN NORWAY

● We are working with the Feasibility Phase in a project developing software for SDH termination in AXE-10. We need more employees to participate in the next phases of the project, which are Function Design, Block Design, Unit Design and Function Test.

We are looking for SW Designers with at least 2-3 years of experience within design and solid MEDAX knowledge. We want you to start as soon as possible and the assignment period is 1 year.

If you are interested in joining a young an international team on the south of Norway please send your resume via mail or memo to:

**Contact:** Merethe Konningen, (ETOML), +47 37 05 17 07, email etoml@eto.ericsson.se or Alf Fredvik, (ETOALFR) +47 37 05 15 36, email etoalfr@eto.ericsson.se

Ericsson Toshiba Telecommunication System K.K., Japan

## FIELD SUPPORT MANAGER

● We are now looking for a Field Support Manager that can meet our coming challenges in Japan and make our support organization the best support organization in Ericsson.

We are handling the support to six PDC-CMS 30 customers in six different regions with nearly two million subscribers in service.

This position require a wide and long background from AXE testing, O&M or Field Support. The job will carry a large responsibility and involves frequent communication with customer's management on site.

We also require experience from management. As the manager You are responsible for leading and motivating your team, as well as develop their competence.

We think You have a University degree in engineering sciences. The jobholder needs to have strong leadership skills and be able to make decisions under pressure. Good English, both written and spoken, is essential. We presume You are open-minded, sociable and adaptable to a mixed culture working environment.

**Contact:** Christer Elmqvist, phone +81 45 475 0010, memoid: NRJ.ERJCELM, Gullic: Fahlgren, phone +46 8 757 17 28, memoid: ERA.ERAFH or Anna Lindvall, phone: +46 8 404 76 62, memoid: ERA.ER-ALIAN. Application: Ericsson Radio Systems AB, J/HIS Ann Beer, 164 80 STOCKHOLM.

Nippon Ericsson K.K., Japan

## MANAGER FOR OVERSEAS PROJECTS AND FINANCE

● GENERAL: Nippon Ericsson is presently expanding its operation. We need a Manager on a long term assignment being responsible for co-ordination of Ericsson activities for Japanese overseas investments within the Telecom Area.

TASKS Develop Ericsson activities for Japanese overseas investments within the Telecom Area and establish a good understanding of the projects at hand from a telecommunication network and finance point of view. Interface Trading Houses & Telecom Operators. Interface OECF and Japanese banks. Liaison with Ericsson local companies in third countries and with Ericsson, Stockholm. Liaison with the other parts of the Ericsson organisation in Japan for technical and other support.

REQUIREMENTS: Telecom experience, both fixed and mobile and also transport networks. Knowledge about the Ericsson product portfolio. Other areas of interest are Marketing and Finance. Good knowledge about Ericsson and a well established contact network and preferably experience of international assignments. Result orientation, perse-

verance and capability to relate to people and to build a strong relationship with the customer are vital personal capabilities.

**Contact/Application:** Nippon Ericsson K.K. Nils Enstam, Manager Expat admin., Memoid: NRJ.NR-JNREM or Kjell Persson, General Manager, Infocom Systems, Memoid: NRJ.NRJKPN Telephone: +81-3-3221-8203 Telefax: +81-3-3221-8204

Ericsson Ltd, Guildford

## EUROPEAN NETWORK ARCHITECT

*The frontiers of telecommunications have been rolling steadily back since de-regulation, prompting rapid growth in network communications. Ericsson's New public Networks Sector was set up to serve the special needs of emerging telecom operators in the UK. It's main product areas are intelligent networks, transport access systems, switching and operations support systems.*

*In less than 5 years, our New Public Networks team has established a market leading position with new operators and in particular international operators with Global Networks ambitions. Our team is innovative, responsive and highly proficient in finding customised solutions to help our customers succeed.*

● Due to this success, we are currently seeking to fill the position of European Network Architect. This scope of the role is to focus on one of NPN's Global operators from a technical perspective.

The responsibility will be on a European network level and will involve close liaison with the customer in defining the initial product requirements, network solution development, integration into the network, implementation and on to operation. Through this process, the role will involve coordination of all technical activities between the customer and the relevant Ericsson departments.

This position requires: the candidate to be qualified to degree/HND level in a technical discipline. Minimum of 5 years technical experience in the telecoms or computer industry. Have an excellent understanding of the components used in a telecoms networks. Good general knowledge of Ericsson products and networks solutions. Excellent communication, organisation and coordination skills. Flexible approach to work. Ability to be self-motivated

**Contact:** Anthony Housden (etlayhn), Tel: +44 1483 305074, Fax: +44 1483 407249.

Ericsson Eurolab Deutschland GmbH (Germany)

Our Mobile Core Development Department EEDIUJ is looking for

## AXE10 SW DESIGNER WANTED,

● EED in Herzogenrath/Germany, close to the university city of Aachen, offers you as a young and growing company an open working atmosphere with high motivated colleagues.

The AXE Mobile Network Department in EED is looking for experienced AXE software designers to reinforce the TCS design in the AXE Mobile Core (AMC). The AMC consists of the core subsystems that are common to the mobile applications CME20, CMS30, CMS40 and CMS88. More information under <http://www.eed.ericsson.se/services/eed-l-u/Welcome.html>

The main tasks are: Participation in the system and design activities. Coach design teams. Technical responsibility. Quality assurance.

As a suitable candidate, you are an Ericsson employee and should have a minimum of 3 years AXE-10 software design knowledge. You should be familiar in working in projects. Any experience in the traffic control area is a clear advantage.

The position requires initiative, good communication skills and a good ability to work under pressure. A local or expatriate contract is foreseen for this position.

**Contact:** AXE Mobile Network Department EED/UJ, Jan Ronnblad, Memo-id: EED.EEDJDR, Tel.:+49-2407 575 529 or Human Resources, Doerte Kaulard, Memo-id: EED.EEDDKA, Tel.:+49-2407-575-163.

## GROUP MANAGER TCS DESIGN WANTED

● EED in Herzogenrath/Germany, close to the university city of Aachen, offers you as a young and growing company an open working atmosphere with high motivated colleagues.

The AXE Mobile Network Department in EED is looking for a group manager to establish a new group for TCS design in the AXE Mobile Core (AMC). The AMC consists of the core subsystems that are common to the mobile applications CME20, CMS30, CMS40 and CMS88. The AMC responsibility is located in EED/UJ.

The general responsibility of the group manager is to plan, lead and supervise the operations of the design group in EED/UJ. He/she has to guarantee that the required goals are fulfilled, the needs of

the company are satisfied, the group is efficient and competitive.

The main authorities and tasks are: Leadership: Perform appraisals, participate in recruitment and introduce new personnel. Competence development of the staff. Set-up and coach design teams. Design: Participation in the department's design activities. Technical responsibility. Quality assurance.

As a suitable candidate, you are an Ericsson employee and should have a minimum of 5 years AXE-10 software design knowledge. You should be familiar in working in projects.

Any managerial experience (e.g. as group manager, team leader or project manager) or experience in the traffic control area is a clear advantage. The position requires initiative, good communication skills and a good ability to work under pressure. An expatriate contract is foreseen for this position.

**Contact:** AXE Mobile Network Department EED/UJ, Jan Ronnblad, Memo: EED.EEDJDR, Tel.: +49-2407575529. or Human Resources, Doerte Kaulard, Memo: EED.EEDDKA, Tel.:+49-2407-575-163.

## GROUP MANAGER TCS/AMC FUNCTION TEST

● The AXE Mobile Network Department in EED is looking for a group manager to establish a function test group for TCS in the AXE Mobile Core (AMC).

The AMC consists of the core subsystems that are common to the mobile applications CME20, CMS30, CMS40 and CMS88.

The activities of the group will be function test (target and simulated environment) and TCS maintenance test. This group will also include the FT leaders on AMC level.

The general responsibility of the group manager is to plan, lead and supervise the operations of the function test group in EED/UJ. He/she has to guarantee that the required goals are fulfilled, the needs of the company are satisfied, the group is efficient and competitive.

The main authorities and tasks are: Leadership: Perform appraisals, participate in recruitment and introduce new personnel, competence development of the staff.

Testing: Plan, establish and supervise the group's function test activities. Coordinate function test and basic test strategy in TCS. Control and supervise maintenance testing. Quality assurance.

As a suitable candidate, you are an Ericsson employee and should have good function test knowledge. You should be familiar in working in projects. Any managerial experience (e.g. as group manager, team leader or project manager) or experience in the traffic control area is a clear advantage.

The position requires initiative, good communication skills and a good ability to work under pressure.

**Contact:** AXE Mobile Network Department EED /UJ, Jan Ronnblad, Memo-id: EED.EEDJDR, Tel.: +49 2407 575 529 or Human Resources Doerte Kaulard, Memo-id: EED.EEDDKA, Tel.:+49-2407-575-163.

For the new feasibility study and execution project CME20 MSC 8.0 within Product Area Switching (PAX), our Design Management & Support Department EEDIXT is looking for a

## PROJECT MANAGER

● The main tasks are: Run the Feasibility Study project from TG1. Establish the execution project prior to TG2. Control MSC/VR-Design and FT during the execution phase. Initiate and chair monthly project meetings, being held alternately in the different Local Design Centres. Closely cooperate with the related AXE mobile core project. Establish and control a design follow up project during the INDUS phase. Cooperate with product management and system management. Follow up and control progress, costs and quality for all activities. Report in monthly steering group meetings.

The position reports directly to Axel Jeske, Group Manager for the PAX Project Office. As a suitable candidate, you are a local employee and have a good design and/or testing competence. Furthermore you should have previous experience in line or project management.

As human competence you should bring in a lot of initiative, good communication and cooperation skills, good judgement and decision making competence as well as the ability to stand pressure. We require mobility since you will have to travel to the involved local subsidiaries.

**Contact:** Design Management & Support Department, Johnny Aaroe, Memo-id:EED.EED-JOAR, Tel.:+49-2407-575-481 or Axel Jeske, Memo-id:EED.EEDAXJ, Tel.:+49-2407-575-284, or Human Resources Doerte Kaulard, Memo-id:EED.EEDDKA, Tel.:+49-2407-575-163

Nippon Ericsson K.K., Tokyo, Japan

## WIDEBAND CDMA / ATM DEVELOPMENT

Ericsson's Major Local Company in Japan, Nippon Ericsson K.K.(NRJ), has recently made an offer to

deliver Wide-band CDMA (WCDMA)/ATM experiment-system equipment to NTT-DoCoMo, one of the world's largest mobile telephone system operators.

The wideband cellular systems unit at NRJ will have the customer interface responsibility for this experiment system, as well as the responsibility for Ericsson's third generation cellular systems standardisation activities in Japan in general. This unit is now expanding and is therefore seeking new, highly qualified personnel.

This is a unique opportunity to work together with one of Ericsson's largest and most demanding customers in developing the first WCDMA/ATM cellular system in the world.

## BASE STATION ENGINEER

● The main tasks will be local product management and participating in the specification of the Base Station (BS) for the WCDMA/ATM experiment system. This includes BS controller (application program interface), BS-to-switch interface and operation & maintenance functionality. The work will involve close contacts with the customer, NTT-DoCoMo, as well as with the Ericsson organisations responsible for the development of the system.

The position also includes being active in various third generation cellular systems standardisation bodies in Japan.

## NETWORK PROTOCOL ENGINEER

● There is now a position open for an engineer with good knowledge of the network protocols MAP (GSM, PDC or IS-41) and INAP. Additional knowledge of e.g. (B)-ISUP, Q(2)931 and TCP/IP protocols is advantageous. The main task is to specify the network interfaces for the Future Public Land Mobile Telecommunication System, FPLMTS.

You will be the one driving the work forward, although it also involves a lot of co-operation with colleagues. The results will be discussed with our Japanese customers (primarily NTT-DoCoMo) and will also be input to relevant standardisation bodies (mainly TTC in Japan and ITU-T internationally).

REQUIREMENTS: For the above positions, the applicant should have at least five (5) years of experience in working with R&D and/or product management within Ericsson in fields relevant to the position. A very good conduct of the English language, both oral and written, is also an absolute requirement.

It is highly desirable that the applicant has power of initiative, as well as good team-working and communication skills.

**Contact:** Jörgen Lantto, General Manager WCS Prod Management, Phone: +81 3 3222 4337, MEMO: NRJ.NRJJXX, or Nils Enstam, Manager Expat adm, Phone: + 81 3 3221 8291, Mobile: + 81 80 966 11 63, Fax: +81 3 3221 8202, Memo: NRJ.NRJJREM, Application: Nils Enstam via fax, memo or E-mail.

Ericsson Telecommunicatie B.V. Netherlands, (ETM)

## TECHNICAL SUPPORT SPECIALIST AXE

● For placement in Rijen, Netherlands, We are looking for persons to deliver support on AXE (BM3 and FMP4). Contract period: 12 months starting Q2 or Q3 1997.

The work includes e.g. Trouble report handling, writing emergency corrections, on site installation of patches (emergency) corrections and updates. The candidate should have knowledge of Plex (HLplex) and ASA.

Candidates should be customer oriented and be able to work independently.

**Contact/Application:** ETM/OPL Angeline Wijns-Petit, Memoid: ETM.ETMANPE

Ericsson Mobile Communications AB, Tokyo-Japan

## PRODUCT ADMINISTRATOR

Ericsson Mobile Communications AB is currently developing its first generation of PDC cellular hand-held telephones for the Japanese market. We are now starting to build our Product Support department and are looking for a Product Administrator.

● The Product Administrator will coordinate activities and be responsible for the development of the function within the Product Support group.

Functions include: Product Administration; Build and maintain/update product databases. Administer various distributors and operators demands for special requirements on product labels. Create product lists and structures. Assist Product Management with product variations routines. Compile/distribute monthly DPY level and project status reports. Customer Satisfaction and Competitive Analysis. Work with designated partners to determine product research information. Customer Support; Handle various support issues to the marketing groups, sales companies and customers.

**Contact:** Karen Wendt, +81 3 3222 4331, memoid EUS.EUSKAW. Application: Ericsson Mobile Communications AB, ECS/HS Christina Weisner, 164 80 STOCKHOLM



Ericsson Corporatia - ECR

**RMOG MARKETING AND SALES MANAGER IN MOSCOW**

*The Russian cellular market is in an expansive phase where Ericsson has captured a total market share of 50%. In NMT we have already today a solid base and late last year we got our first contracts for GSM.*

● We now need a result-driven manager who can coach and lead our team in Moscow and in close cooperation with the home organisation develop the RMOG business in Russia. An important part of the job will be to build up competence and resources locally for marketing and sales.

You will be responsible for: developing business opportunities, sales as agreed upon with Business Unit, recruiting and developing of personnel resources within the agreed personel budget, to manage and own resources for offer preparation and commercial support.

This position require: Master of Science, Electrical Engineer or similar, a solid foundation in communication systems technology, at least two years related experience, good knowledge in Russian and English, negotiation and management skills.

**Contact:** Ulf Borison, phone +46 8 757 1580 or Eric Franke, phone+7 505 247 6211. Application: Ericsson Radio Systems AB, LP/H Liljana Sundberg, 164 80 STOCKHOLM.

Ericsson Radio Systems AB, Kista

**MANAGER - PROJECT MANAGEMENT**

● We are looking for a manager (Dept. Mgr) to our unit for Project Management.

The Project Management Unit is responsible for executing Customer Projects to all ERA/A Direct Markets, Start-up markets and Demo systems, mainly in CIS, Asia, Latin America and Africa. The unit is also involved in sales and marketing activities according to the core-3 concept.

The Project Management Unit is also overall responsible for processes, methods & tools and competence development programs for Project Management within the global organization for

Cellular Systems, AMPS/D-AMPS, and is also responsible for maintaining a network among Project Managers and conduct regular conferences.

The Unit consists of approx. 15 persons and is located in Kista.

The successful candidate has an academic education with several years of documented management experience from the international telecommunication industry. Excellent written and spoken communication skills in English is required and Spanish an advantage. Ability to establish good relations with customers and Local Companies is also required.

**Contact:** Ulf Malmerberg, +46-8-757 2949, ERA.ER-AUMG, Marianne Molin, +46-8-404 4778, ERA.ER-AMM. Application: Marianne Molin AH, Ericsson Radio Systems AB, 164 80 STOCKHOLM

Ericsson Radio Systems AB, Kista

**OPERATION DEVELOPMENT**

● Supply Management at RMOA is looking for you who want to work with operational development in Supply. We work in a continuous improving area, and need to focus on this both in the processes and in the line-organization. Supply Management is the owner of the TTC processes Supply and Supply Planning. We are redesigning these processes, and globalizing them. Your work will be to implement and ensure the efficiency of the processes as well as to improve our way of working.

You are experienced in operational development and with the process-philosophy. You are fluent in spoken and written English, communicative and have a true interest in people and networking.

**Contact:** ERA/AP Stefan Holmqvist, 08-404 7312. Application: KI/ERA/A/H Britt Bosrup, Ericsson Radio Systems AB, 164 80 STOCKHOLM

Ericsson Telecom Sweden, ETS,

*is acting on one of the most dynamic Telecom markets in the world, where new solutions for speech, data and video communications are tried at an early stage.*

*Our main responsibility is to provide Telia in Sweden and abroad with highly competitive net solutions, systems, products and services within the area of Infocom Systems. ETS has approximately*

*380 employees at sites in Årstadal - Stockholm, Nynäshamn, Gothenburg and Sundsvall.*

**MARKETING - CUSTOMER SERVICES**

● Your task requires both commercial and technical competence. The successful candidate will be able to create service solutions that in a clear and precise way describes the commercial and technical advantages for our customer Telia. For this position are we looking for a candidate with marketing focus who can expand the existing business and who can develop new customer services business for Ericsson Telecom Sverige (ETS).

Your tasks will be to have daily contact with Telia, do service presentations and produce commercial documentation for RFQ, RFI and offers.

The above mentioned position involves cross-functional coordination within business support unit within ETS and toward the customer account teams that are responsible for Telia. It is therefore essential that you are outgoing, independent and self motivated. You should possess strong interpersonal and communications skills. You should have a university degree or similar, with minimum of 2 years of experience in the Telecom industry. Female and male applicants are equally welcome.

**MARKETING - TELECOM MANAGEMENT SYSTEMS**

● Your task requires both commercial and technical competence. The successful candidate will be able to create telecom management systems solutions that in a clear and precise way describes the commercial and technical advantages to our customer Telia. For this position are we looking for a candidate with marketing focus who can develop new telecom management systems business for ETS.

Your tasks will be to have daily contact with Telia, do product presentations and demonstrations, write and produce commercial documentation for RFQ, RFI and offers. It is a requirement that you already have experience from telecom management in general and preferable from working within the TMOS area. The above mentioned position involves crossfunctional coordination within business support unit at ETS and toward the customer account teams that are responsible for Telia. It is therefore essential that you are outgoing, in-

dependent and self motivated. You should possess strong interpersonal and communications skills. You should ideally have a M.Sc. or B.Sc. in CS or EE degree and have a fairly good knowledge of UNIX, with minimum of 2 years of experience in the Telecom industry. Female and male applicants are equally welcome.

**Contact:** Rutger H. J. Reman phone +46 8 719 1558, Memo ETX.ETXRURE Application: Ericsson Telecom Sverige X/NH Eva Gardh, 126 25 STOCKHOLM SWEDEN

Ericsson Radio Systems AB, Kista

**PRODUCT MARKETING MANAGER - US**

*Cellular Systems - American Standards is one of the fastest growing business units within Ericsson Radio Systems. We are expanding rapidly.*

*The US market is our most important market. This is the market that takes a leading role in the development of new and future products. We have a very strong position in the US through our customers. The market is expected to show a continued strong growth.*

● You will be responsible along with our local company for the marketing and introduction of new and existing products towards the US market. The products include Hardware, Software and Services. The goal is to ensure excellent customer satisfaction and long term profitability.

You will work in close co-operation with our Major Local Company in the US, as well as our Product Management and other departments within Sales & Market Operations, in order to ensure that our products are offered to the US market in the best possible manner.

We offer you a stimulating working environment in a small team with the potential for good personal development. This position requires both commercial and technical competence with regards to switching and radio products. You have a B. Sc. or M. Sc. or similar. Experience from the US or other international markets is desirable.

**Contact:** Per H Bramefelt, +46 8 757 3597 or Lars Jehlander, +46 8 404 7838. Application: Ericsson Radio Systems AB, AH Birgitta Stavenow, 164 80 STOCKHOLM

## Signal quality is the true measure of mobile telephony.

Trying to understand and measure reality has always been a preoccupation of human beings. Nowadays we use advanced testing and measuring systems with-



The MT8801B measuring equipment is the result of close customer collaboration. It is a flexible platform for the high-precision testing of mobile terminals in under 3 seconds.

out which today's fast telecommunications would be impossible.

At Anritsu, which was founded in Japan 100 years ago, we measure the signals used in mobile telephony, optics, digital transmission and microwave technology. We know how important the quality of a signal is.

We also understand how being sensitive to customer needs is important to achieving a good result.

Together we can produce precisely the test solution you need for your development, production and maintenance. In addition, we are established around the world and, as your global

partner, can offer you the same high level of expertise and service wherever you are. We're never satisfied with 'approximately' - exact measurements and a close, long-term relationship are what create quality. This is our signal to you - we know we can measure up to your expectations.

For more information, please call:

Japan +81 - 03 - 3446 - 1111. USA +1 - 408 - 776 - 8300  
UK +44 - 01582 - 418853. Sweden +46 - 8 534 70 700

# Anritsu Wiltron



# Ericsson Saab Avionics hopes for JAS exports

Björn Erman, President of Ericsson Saab Avionics, a company established in September 1996, is hoping for export orders for the JAS 39 Gripen before the year 2000.

"Technical presentations and background material for offers are now being prepared and will be sent to several presumptive customers in the spring," Björn Erman explains.

Ericsson and Saab entered the new partnership agreement in September, declaring their intent to establish a jointly owned military defense company in the field of aviation electronics.

Since its inception on January 1, 1997, Ericsson Saab Avionics has been the largest subsidiary of Ericsson Microwave Systems. Ericsson and Saab own equal shares in the company.

The establishment of a new defense company was prompted in part by pressure from Sweden's Defense Materiel Administration (FMV), which has long recommended restructuring of the defense electronics sector. Furthermore, Ericsson and Saab have discussed possible cooperation for several years, primarily to avoid eventual conflicts between the two companies.

## JAS exports

The business operations of Ericsson Saab Avionics are concentrated on defense electronics, displays and surveillance systems, as well as electronic and mechanical devices and electromagnetic technologies.

Since January 1, about 600 people have been employed by the new company. Production facilities are situated in Jönköping, where about 180 people are employed, and Linköping, with about 40 employees. The head office is situated in Kista, where the bulk of the labor force works, comprising about 400 persons. Production of defense electronics and display equipment for JAS jet fighter planes is also concentrated in Kista.

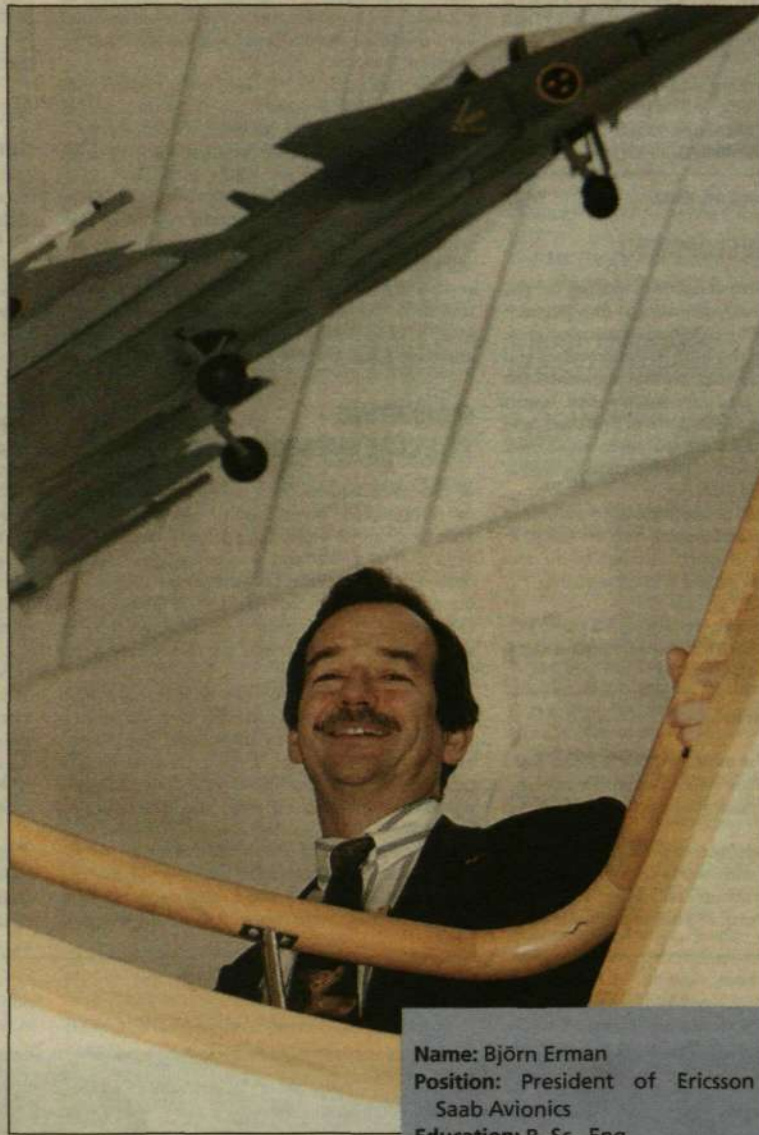
Sales invoiced by the new company during 1997, its first year of commercial operations, are estimated at about SEK 700 million.

"If we can book export sales for JAS fighter planes, however, we'll become a multi-billion krona company in just a few years," says Björn Erman.

For Björn Erman and his staff, all of whom have worked tirelessly to structure the new company during recent months, things are starting to fall into place.

Ericsson Saab Avionics has conducted its first General Meeting, its registration certificate is now being processed and permission to start production has been granted by the National Inspection Board, formerly the National Swedish War Materials Inspectorate.

A Board of Directors has been appointed and begun its executive duties. The Board comprises Jan-Åke Kark, Chairman, Svante Berg, Lars



**Name:** Björn Erman  
**Position:** President of Ericsson Saab Avionics  
**Education:** B. Sc., Eng.  
**Family:** Married, two children, age 17 and 19  
**Residence:** Sollentuna, Sweden  
**Automobile:** Family owns three Saab cars: Saab 9000, a 90 model and a Saab Lancia  
**Recreational interests:** Avid sailor often seen cruising the waters off Sweden's east coast. Owns a summer cottage on island of Ljusterö. Chairman of a support association to preserve the Blidöund steamship in Stockholm.

Karlén (deputy member), Hans Ahlinder, Anders Andersson, Bengt Halse (deputy member) and trade union representatives.

## New recruits

He also emphasized the Company operates in a highly expansive niche and new personnel will be needed in the future.

"We already need to increase the labor forces in all three communities. Initially, we're looking for about 10 employees and recruitment efforts are in progress."

On a more practical plane, Ericsson Saab Avionics is concentrating on the start-up of joint materials production systems as well as personnel and financial accounting systems for the Company.

Taking part in a project that will contribute to successful Swedish exports of what is almost certainly the last completely Swedish fighter plane is a challenge that Björn Erman is ready to accept. He is also convinced, however, the next generation of Swedish fighter jets will be produced in partnership with one or several other European countries.

"To succeed with JAS exports and strengthen the Swedish military defense industry is the lodestar in our continued operations," he continues.

Björn Erman has been working since the mid-1980s with performance systems and countermeasures within the Gripen program on behalf of Ericsson Microwave Systems.

"We're entering a market characterized by extremely tough interna-

tional competition, especially from countries like the U.S., the UK and France. Nobody is going to lay down for us, and we'll have to survive on our own merits," Björn Erman explains.

"I believe we have a good chance to succeed outside Sweden. The JAS is a solid and cost-efficient airplane with unique system characteristics."

As for the Swedish market, negotiations are now underway with FMV concerning a Subseries Three. The main questions are focused on price, performance and the number of planes to be produced. A final decision is expected this summer.

"The decision by Swedish military authorities on Subseries Three is important to Ericsson Saab Avionics, since the go-ahead would secure continued production and development of tele-military and performance systems well into the next century."

CATHRINE ANDERSSON



Sivert Bergman, Executive Vice President of Ericsson Microwave Systems and Head of Microwave Communications, presented the symbolic gold MiniLink to William Keever, Director General of Mannesmann.

## MiniLink No. 50,000 goes to Mannesmann

The 50,000th MiniLink to leave Ericsson's factory in Borås, Sweden was shipped recently to Mannesmann in Germany. A symbolic gold-coated MiniLink was also presented to the German company at a ceremony to mark the occasion at Mannesmann's head office in Düsseldorf.

"Mannesmann has been instrumental in our success," says Sivert Bergman, Executive Vice President of Ericsson Microwave Systems.

Mannesmann Mobilfunk, owned by the Mannesmann steel conglomerate of Germany, has been one of Ericsson's largest MiniLink customers since 1992. Cooperation between the two companies was started in 1991, which also makes Mannesmann Mobilfunk one of Ericsson's first customers among new privately owned telecom operators.

Ericsson also supplies the German company with base stations and switching equipment.

The gold link presented to Mannesmann toward year-end 1996 was cast in zinc in the Swedish Province of Småland, gold-coated in Gothenburg and mounted by a company in Ödsmål. The ceremonial link was shipped to Düsseldorf in four suitcases carried to Germany as personal luggage. Link No. 50,000 was actually produced at the Borås production plant in September 1996.

Mannesmann has also taken an active part in product development.

"Successful product development requires close cooperation with customers, a factor not always taken into consideration," explains Sivert Bergman, who is also head of the microwave communications business unit.

"We have been receptive to Mannesmann's opinions and needs, which has helped us find the right solutions and was particularly important in the early stages of our cooperation. We got through the growing pains of product development together. The German company also knows we strive constantly to make further improvements, and they appreciate our efforts and ability," Sivert Bergman continues.

## All parts of Germany

There are four telecom networks in Germany: the government-operated D1 and two privately owned networks, D2 and E1 for the DCS1800 standard, and E2, which was recently granted a license. E2 is owned by BT and VIAG, an industrial concern.

With its D2 network, Mannesmann is represented in all parts of Germany, with about 2.7 million subscribers and continued strong growth potential.

Mannesmann Mobilfunk was granted the concession for mobile telephony in 1989, and started commercial operations in 1992. The company is owned by the Mannesmann Group (65%) and AirTouch Communications (35%). Revenues in 1995 totaled DEM 2.8 billion. In 1996, Mannesmann Mobilfunk had about 3,900 employees.

BRITT-MARIE WILDÉN

**Footnote:** Approximately 20,000 MiniLinks were manufactured in 1996. Sales started to take off during the 1990s, in parallel with rapid growth and expansion in mobile telephony. Link production in Borås has increased 40-50 percent annually since 1990.



Ericsson design engineers in Swindon in southern England produce ASICs (Application Specific Integrated Circuits). Simply stated, these are integrated circuits that have been designed according to customer specifications. Swindon produces circuits primarily for Ericsson's cellular systems, radio base stations and mobile phones.

**S**

windon's strategic location 100 kilometers from London's Heathrow airport on the M4 motorway makes it easy for designers to travel to their colleagues at Ericsson Component's microelectronics division or to various customers, particularly in Kumla and Lund in Sweden and Raleigh in the US.

Ericsson Components is located in west Swindon, a new and rapidly expanding industrial area to which multinationals have flocked.

Ericsson Components is located in west Swindon, a new and rapidly expanding industrial area to which multinationals have flocked.

#### Designers in demand

The high concentration of design companies in Swindon creates a dynamic atmosphere in which competition for design engineers is high.

"Competent designers in our field are hard to find," says business unit manager Stan Anderson, who started the Swindon unit in 1991 and has a long career as a designer behind him.

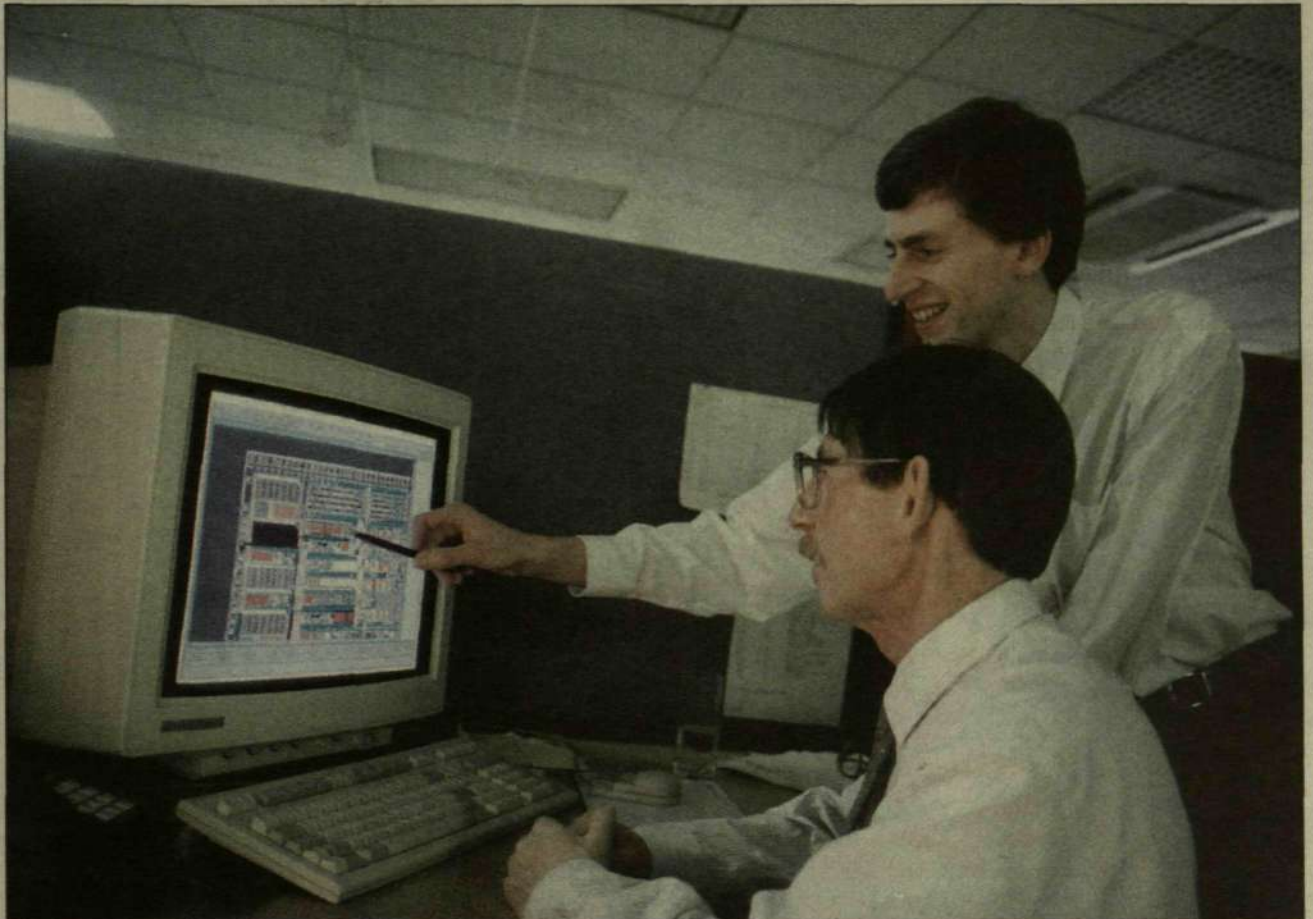
"It's tough to recruit such highly skilled professionals," says Stan, "but we have an excellent reputation. The Ericsson name is a strength, and we offer many exciting projects and excellent facilities."

The reason that Ericsson Components chose to locate a design center in England was that there were not enough experienced designers available in Sweden. Now, after six years, the Swindon unit has established itself and has 22 designers specialized in microelectronics and energy systems, who are assisted by a marketing staff of five.



"We need a broad spectrum of competence to lead development in mobile telephony, but we also need a knowledge base for standard projects," says Stan Anderson, business unit manager at Swindon.

# Swindon – a paradise for circuit designers



Mike Atkinson and Richard Goldman are two of Swindon's designers. On their workstations, they create a functional circuit using transistors and other components. Using CAD (Computer-Aided Design) techniques, they then simulate the circuit on the computer and verify it against the customer specification.

Photo: INGER BJÖRKLIND BENGTSOON

Collaboration with Ericsson Components in Kista, Sweden is handled by an ISDN link, a common database for design and product information, videoconferences and frequent trips between the offices. Swindon is also used as a training center for design engineers from Kista.

#### Layout and design

The Swindon unit works with layout and design. "Design means producing a circuit from a circuit specification, while layout is a part of the design process," explains Stan. "A computer is used to produce a functional circuit containing transistors and other components. The design process uses a method called CAD (Computer Aided Design), which allows the circuit's function to be simulated on a workstation and verified against the specification.

"When the layout is complete, the circuit is verified in a simulator against the original design. It is then transferred into a format called GDS2, which is an industry standard for mask production."

The mask is then transferred photographically to the silicon wafer. Integrated circuits are then built up on the silicon substrate with layers of traces in several hundred process steps.

"The GDS2 format can be processed by many different manufacturers, including the chip fabrication facility in Kista or a silicon foundry which supplies processed silicon wafers. The new submicron facility in Kista is an invaluable addition to our operations," says Stan.

#### Analog and digital circuits

The Swindon unit works with both analog and digital circuits. Analog components are typically small circuits with high demands on performance, making

them difficult to design. Often a single engineer designs each individual block. A special design technique is required to produce functional circuits. RF circuits for mobile telephones and radio base stations are one example of such analog circuits.

Digital circuits are often very complex. For this reason, design work is often done

series of GSM phones," relates Bob Sneddon, who heads the analog group.

#### Designing for mobile phones

The Swindon unit is now experiencing strong growth in the design of components for mobile telephones. The customer is Ericsson Mobile Communications in Lund, Sweden.

## Highly skilled engineers design circuits to customer specifications

in teams with several design engineers. In a submicron circuit, the smallest details are less than one thousandth of a millimeter. Automated programs are used for layout, since the circuits contain a large number of transistors, up to several million.

Submicron circuits are used in complex digital systems that require a large number of functions.

"For more than a year, we have been working on a mobile communications project," relates Godfrey Onyiah, who heads the digital design group at Swindon.

"The goal of this project is to create a platform for a design path that will allow the customer to shape the design in the future. On-time delivery is the motto by which we live, and customers have shown great interest in the efficiency improvements that we have demonstrated.

The analog design group, like the digital group, was formed to support microelectronics operations at Ericsson Components in Kista in the design of integrated circuits.

"We work primarily with mobile telephone circuits and have been involved in the design of analog TACS and several

"Our collaboration with Ericsson Components in Swindon has increased dramatically in recent years," relates Tord Wingren, who is the manager responsible for research and technical development in the new business area Mobile Telephones and Terminals. "Today more than half the design engineers in Swindon are working for us. They have a wealth of experience, and we are relying more and more on Swindon for our projects."

#### Increased cooperation

"The largest digital circuits normally involve between 40 and 50 people during the design period," continues Tord. "We intend to deepen the cooperation with Swindon during 1997, particularly for mobile telephone components. The greatest challenge is short product cycles, and to meet the increasingly stiff competition, we must remain innovators."

"We need a broad spectrum of competent people to lead development in mobile telephony, but we also need to establish a knowledge base for standard projects," concludes Stan Anderson, business unit manager at Swindon.

INGER BJÖRKLIND BENGTSOON



# contact

Ericsson, HF/LME/I, Room 811023, S-126 25 Stockholm

Wet, windy and cold underfoot. But inclement conditions didn't stop more than 120 Ericsson employees from taking part in this year's Vasalopp Week. For six members of the management team at the circuit board production plant in Kumla, Ericsson Radio Systems, it was their first Vasalopp. And a focal point in countless hours of training and practice together.



Like so many years in the past, the familiar Ericsson logo was displayed on all 89 Vasalopp kilometer markers between Sälen and Mora. Photo: LEIF FORSLUND

## Vasalopp run in extremely wet conditions

**H**ans Thunander, Personnel Manager of the circuit board production plant in Kumla, made a suggestion last spring, whereby the plant's entire management team should enter this year's Vasalopp, especially since there were so many new faces on the staff.

Said and done! The management staff prepared by adhering to individual training programs drawn up by the Company's health department. They also cycled along the entire course of the Vasalopp Marathon Ski Race in the summer, invited training and motivation consultants to the Company and arranged diet and ski wax instruction evenings.

"It was a great way to form a close-knit team and get to know each other," says Bengt Strömberg, Factory Manager, who finished first in the Kumla group, crossing the finish line with a time of 9.52:39.

Hans Thunander and Jörgen Eken-gren, Logistics and Product Supply Manager, were forced to drop out of the Vasalopp, the same fate suffered by 1,000 others skiers in the 13,000-man field. Conditions were extremely difficult, with virtual stumbling blocks in the form of tree roots and stones for the skiers at the back of the pack. "The worst conditions since 1927," one race official said.

"It was fun anyway. I think we made great progress as a group," Hans Thu-

nander says. "There are many similarities in sports and our everyday jobs, as we complemented and supported each other. The Vasalopp was only part of a greater goal. We can now look forward to other activities together. We might enter a cycling contest or challenge the management staff of another company in some sporting event."

### Kilometer signs

As in previous years, Ericsson sponsored all 89 signs marking the number of kilometers remaining between Sälen and the finish line in Mora. Ericsson also rendered technical assistance in total communications facilities for the race. This year, there was also a special refreshment station and ski wax service for all Ericsson participants, situated near Evertssberg, about halfway through the race.

Lars Brosell and Olle Knös, recreational consultants from Ericsson Fritid, tried to motivate the skiers who stopped at the station, cheering them on with encouragement and welcome liquids. They were also instrumental in arranging travel and hotel accommodations for about 25 participants from the southwestern area of Stockholm.

"This is the first time we have done anything as a group for Vasalopp," Lars Brosell explained. "Next year, I hope we have a bigger group and can all travel here together. We also plan to work together during the year in preparing for the big race, including expert informa-



The gang from the circuit board production plant is pictured above in their special Ericsson ski uniforms, produced in accordance with regulations governing displays of Ericsson's logo. (L-r): Bengt Strömberg, Klas Andersson, Jörgen Ekengren, Jane Melin, Kent Törnkvist and Hasse Thunander.

tion sessions on wax and ski materials choices."

While about 80 Ericsson employees entered the Race individually, another 40 came earlier to take part in Vasalopp Week events. Sören Just Pedersen, a Dane who works with product information for Ericsson Mobile Communications in Lund, skied in the Open Track event.

"For me, it was a sporting highlight of the year, an opportunity and incentive to train and stay physically fit. I've taken part in the Open Track skiing event for the past four years, but I have never been able to train on skis during the year. Mostly I lift weights and jog to get in shape," Sören explains.

NILS SUNDSTRÖM

■ The Vasalopp is the world's longest annual cross-country ski-race and the largest international sporting event in Sweden. Professionals and amateurs compete in the race which stretches over 90 kilometers (54 miles) from the start in Sälen to the finish line in Mora in Dalarna Province.

### Cold facts about the Vasalopp

The first Vasalopp was held in 1922, in memory of the Gustav Vasa's flight from Sweden in 1521. Men from Dalarna followed after in his tracks and convinced him to turn back and lead them against the Danes who occupied the

country. Gustav Vasa was later elected King of Sweden. More than 13,000 skiers participated in this year's Vasalopp, while another 24,000 competed in other races held during the week prior to the race.

The skiers consume 60,000 liters blueberry soup, sport beverages, porridge and coffee at the seven food and drink stations during the race. The fastest time was posted by Bengt Hassis, who, in 1986, covered the distance in 3 hours, 48 minutes and 55 seconds.

## endline

### Outsourcing does not mean a tradedown

**C**ontact's second theme supplement is enclosed with this issue.

This time, the theme is "outsourcing." The supplement explains this term, and also what is meant by alternative forms of supply. We give examples of how various solutions are employed in our company, and elsewhere. If we had had sufficient space, we would have also depicted what it means for an employee to be outsourced. Instead, we will be dealing with this aspect of outsourcing in a future issue of Contact. But even at this stage, I can say that our editorial staff has received many comments which indicate that following along with your job when it is transferred from Ericsson to some other company does not necessarily involve a "trade-down."

Ericsson is a good company to work for. It is also a large company, and people tend to regard it as a secure place of work, offering safety in an uncertain world. This explains the anxious reactions in many quarters when outsourcing is discussed in connection with people's own jobs. But there are also positive aspects which emerge once outsourcing has actually been implemented. It can be a good thing for an operation to be suddenly transformed from a "peripheral activity" to a real core operation. A company which specializes in relays, for example, really focuses on its chosen field, and invests in patents and product development and so on. Having a manager who takes a long-term view of the type of production concerned, and who is supported by an owner who is prepared to invest in the operation concerned may mean a dramatic improvement in the psychological atmosphere in the work place.

This teaches us that outsourcing is something which is not only good for Ericsson but also benefits the employees involved. The only drawback in this context seems to be the risk of missing out on the gold-medal celebrations at Stockholm City Hall - our own "Nobel Prize" for long and faithful service, to which many people look forward. Unfortunately, for my own part, I am one of those who realized far too late in life where I really belong. So, unless the pensionable age is raised to 70, I won't be getting my gold medal. I can only hope that there will be some change in the rules in this connection.

But maybe I should start writing world-class literature and try to win a real Nobel Prize...



LARS-GÖRAN HEDIN




# contact in depth

THEME SUPPLEMENT  
TO CONTACT  
NO. 3 1997



## Modern times

A supplement on the paths Ericsson chooses to secure access to products and services - now and in the future

ERICSSON 



## 'Outsourcing' is a new buzz-word

'Outsourcing' is a new buzz-word repeated often by Ericsson employees nowadays. In some countries, in the UK for instance, it has been a well known begrepp for several years. It crept into our organization slowly but surely and has become an everyday phenomenon in business conversations. But what does it mean? While working on this theme supplement to Contact, we learned there are many interpretations of "outsourcing" and, in some areas of Ericsson, an Ericssonian definition has emerged: it has become synonymous with the transfer of personnel and inventories to independent suppliers, which was not necessarily the original meaning of the word.

Outsourcing can be defined as a situation in which a company has a product or service it needs, but for one reason or another chooses to hand over the product or service to an outside supplier.

Many languages have no cut and dry translation for "outsourcing", which only adds to the confusion surrounding the word. In Swedish it is often used as a reference to "subcontracting", "leasing out", "farming out" and "contracting to outside suppliers". None of these expressions explains the whole meaning of the word "outsourcing" and probably the same translation problem has occurred in other languages.

An important objective of this supplement is not just to examine the confusion created by new concepts such as outsourcing, but also to describe and analyze the phenomenon – the philosophies and strategies behind outsourcing and how they might affect Ericsson in the future.

LENA WIDEGREN

### contact in depth

A Supplement of  
Contact, a newspaper for Ericsson employees

Publisher: Lars A. Ståhlberg, tel +46 8 719 31 62;  
Editor: Lena Widegren, tel +46 8 719 69 43;  
memo ETXLAWN  
Layout: Paus Media AB, tel +46 8 665 80 72.  
Printing: Nerikes Allehanda Tryck, Örebro 1997.

For additional copies, contact Inger Bergman,  
memo LME.LMEBING

Cover by: ANDERS F. RÖNNBLUM/PRESSENS BILD



# "We need partners to meet growing competition"

Traditionally, Ericsson has been highly adept at meeting customer demands. As the telecommunications market undergoes continuing dramatic change, it is crucial for Ericsson stay abreast of new developments.

"We have to improve, become even better at keeping customers satisfied. Our ability to adapt to change is one of Ericsson's most important core skills," says Håkan Jansson, Senior Vice President, Corporate Technology.

"Production is one area that needs comprehensive changes. Ericsson has a completely new outlook today on what products should be manufactured in-house and what can be produced as well, or better, by independent suppliers.

## New philosophies needed in production

BY: LARS-GÖRAN HEDIN  
ILLUSTRATION BY: ANDERS F. RÖNNBLUM/PRESSENS BILD

THE PAST FEW YEARS HAVE BEEN characterized by comprehensive changes in Ericsson's organization and mode of operations. Dynamic development in the telecommunications market has been a major force behind the series of changes. Increasing competition between a declining number of players in the supply sector has forced Ericsson to constantly strive to improve its ability to develop the "right" products at the "right" time, and to market them at the "right" price with the "right" quality. So far, our efforts have yielded success.

"When it comes to adapting operations to emerging needs and new trends, I dare say Ericsson has been more successful than most competitors," says Håkan Jansson. "I can cite several examples of how Ericsson has strengthened its market position simply by adapting to change more efficiently and quickly than other companies. The conversion from electromechanics to electronics is a prime example, as well as Ericsson's early focus on mobile telephony.

"This type of success has given us a certain tendency to rest on our laurels. We seem to think we're always going to be better than others. Make no mistake, this is a very dangerous attitude," continues Håkan Jansson.

Ericsson has achieved very strong growth during recent years. The ultimate objective of technological development is to secure continued success in the future.

"To secure future growth, it is essential for Ericsson to maintain a portfolio of high-quality products and services for established and new customers at all times. There is no time to rest on anything! Efforts must be focused sharply on continued development of core skills and

expertise. Furthermore, all business operations defined as 'core areas of activity' shall be conducted in-house by Ericsson and its own employees."

Håkan Jansson emphasizes that questions of which operations comprise "core areas of activity" cannot be answered without referring to the market and merging market needs.

"Fifteen years ago, Radio Communications was not considered an integral part of Ericsson's core business operations."

As market conditions continue to be characterized by an undeniable shift toward what Ericsson calls "Infocom," new market sectors have emerged with legitimate claims to classifications as core business operations. It is extremely important to constantly monitor trends and identify new market needs, in parallel with efforts to adapt technologies and production to new definitions of what may or may not comprise Ericsson's core operations.

"Ericsson's propensity for change and our ability to work in new areas of skills and expertise development are important characteristics that, in this perspective, should be defined as core skills."

"Today, we refer more often to the importance of offering customers total solutions that include products and services. We are trying to advance our positions higher up in the value chain and, as a result, Ericsson's R&D investments are now concentrated more strongly on the development of services and solutions for customers. Our proven ability to achieve established objectives provides the Company with unique competence, and it is this part of the value chain that yields the highest return on Ericsson's technological and industrial investments.

"In parallel with Ericsson's present dynamic growth and expansion, our internal structure has become increasingly complex and diffuse. It is important, therefore, that we simplify and carefully review which areas of business operations shall be retained in-house and target other areas in which we should seek partnerships with other companies," Håkan Jansson explains.

"Outsourcing," that buzzword of the 90s, offers a variety of opportunities. Håkan Jansson looks upon subcontracting of production operations to independent partners as a highly aggressive strategic weapon. Outsourcing can be effected by subcontracting an entire area of operations, whereby another company takes over production, personnel and other assets. The total approach to outsourc-



← ing has dominated methods used by Ericsson, since it offers a simple means to restructure operations, in addition to serving the best interests of employees.

"Another outsourcing method that has become increasingly popular is to subcontract manufacturing operations to business partners who have built up their own production resources and specialize in production operations on behalf of other companies. I believe Ericsson will also resort to this method in the future. Competitive conditions are forcing this type of development."

"During recent years," he continues, "outsourcing has become a means of increasing operating efficiency used by a growing number of companies. The trend has been particularly pronounced in the computer industry, in which several of the largest players have increased their utilization of partners to meet production needs. Sun, IBM and Hewlett-Packard have all divested all or large parts of their production programs to increase profitability and improve potential to compete successfully in their respective markets."

Today, as the telecommunications industry attracts growing attention and interest from the computer industry, it's only natural for Ericsson and other telecom suppliers to follow suit and restructure their production operations.

"This does not mean, however, that Ericsson should or will discontinue all production. There are still important areas in which production and strategic skills are closely interwoven, and other areas in which the scope of Ericsson's production operations are such that economies of scale could not possibly be gained through subcontracting or outsourcing," Mr. Jansson says.

"Nevertheless, there are several areas in which external suppliers are able to offer manufacturing prices for our products that are much lower than Ericsson's production costs. No company can refuse or reject opportunities for efficiency gains," he continues.

The operations of many companies throughout the world today are concentrated exclusively on production for other companies, particularly in the electronics industry. For Ericsson, it is imperative for the Company to retain a professional approach in all selections of external partners. The ability to choose the "right" partners is another factor that Håkan Jansson refers to as "core skills."

"Cooperation with leading companies in parts of our main process niches also helps support the internal development of Ericsson's own skills and expertise. Selections of business partners are becoming a more critical element in the supply and continued develop-

ment of Ericsson know-how. Not to be overlooked in this context are opportunities to learn from partners with highly efficient production operations in their core business areas."



ILLUSTRATIONS: JAN OLSSON

# 3

"Product supply" is the common denominator in this Contact Theme Supplement. We shall try to show which strategies Ericsson is leaning toward to secure continued strong and reliable access to products and services. In simplified terms, Ericsson has three options for product supply: in-house production, purchasing and outsourcing.

## ways to manufacture Ericsson's products

### 1. In-house production

Ericsson's in-house production operations have always comprised the most traditional means of securing access to products and services. Perhaps not always from A to Z, if you will, but at least for strategically important parts of production or such components with very large volumes that other manufacturers simply cannot match.

Assembly of mobile telephones and radio base stations are good examples of how Ericsson can capitalize on economies of scale created through strong sales. The products are manufactured in-house, but Ericsson also purchases several components from other suppliers.

### 2. Traditional purchases

Throughout its history, Ericsson has always purchased parts of its production portfolio externally. Either entire systems and products (exemplified today by SDH equipment purchased from Marconi of Italy) or components are bought from external suppliers. The modern definition of purchasing does not necessarily mean that Ericsson relies completely on independent suppliers to develop and manufacture its products. Instead, it is often a matter of close cooperation between Ericsson, which stipulates its specific demands, and other companies that specialize in developing and manufacturing the products.

### 3. Outsourcing

Rapid growth is good for Ericsson, but it costs money to grow and expand. In the long-term

perspective, accordingly, Ericsson might not be able to afford activities in all areas of operations. Some production, accordingly, will not always be classified as core operations.

Ericsson's strategy is to concentrate on supplying system solutions and allocate additional resources to development projects and activities conducted in close cooperation with customers. To free up resources for priority operations, Ericsson has decided to reduce its total number of production units.

PRODUCTION FACILITIES REQUIRE CONTINUOUS investments in new machinery and equipment, expenditures that require substantial amounts of capital tied up in operations. In many cases, it is preferable for Ericsson and most other companies to subcontract production operations to independent manufacturing companies whose core activities are focused on international production operations. Product supply is secured, instead, whenever economically viable, through purchases of standard products made by other suppliers, in parallel with sales and subcontracting of production operations.

"Outsourcing," a new buzzword in Ericsson, is a means of transferring parts of production to other suppliers. Contract production is another option. In fact, they are roughly the same, but references to outsourcing by Ericsson during recent years have also included one other important element: personnel and, in many cases, machinery and other production facilities have also been transferred to the company that assumes responsibility for production. Pure contract production, conversely, assumes the production company has its own personnel and equipment needed to make the products Ericsson needs. ■



# Core operations conducted in-house

BY: GUNILLA TAMM  
PHOTO BY: THOMAS MAGNUSSON

## in house

ALL OPERATIONS CLASSIFIED BY Ericsson as core operations are conducted in-house.

Production does not necessarily include every component down to the last nut and bolt, however. Some parts and components included in almost products are purchased from outside suppliers.

Björn Boström, the Mobile Systems Business Area's Vice President of Production, explains:

"We have always outsourced parts of production."

Björn Boström continues: "Mobile telephony, including mobile telephone systems and mobile telephones, has recorded extremely rapid growth, progressing from a small area of operations to Ericsson's largest business sector. We have never had a tradition of producing everything our-

## IN HOUSE

Ericsson conducts its own in-house operations for strategically important parts of production classified within the framework of core operations. ■

selves, not for systems products or cellular telephones. In the mid-1980s, volumes began to increase sharply, and we have looked for outside suppliers ever since. Today, production is marked by a clearly defined trend whereby Ericsson's manufacturing units purchase a growing percentage of sophisticated products from independent suppliers."

Products classified within the framework of Ericsson's core operations are still manufactured in-house, however. Core operations of the Mobile Systems Business Area include radio technology, and the most important products manufactured in-house by the business area include radio base stations – with transmitters, receivers, filters, transceivers (distributors with antennas), and complex circuit boards. Radio base stations are produced in-house by Ericsson, but independent manufacturers supply other constituent parts and components not classified as core operations, for example cabinets and racks for base stations and simple circuit boards.



Ericsson mobile telephone are assembled in Kumla. Quality and functionality are also tested at the Kumla plant, which has approximately 3,000 employees.

IT IS IMPORTANT TO NOTE, HOWEVER, THAT products and business activities classified as core operations today are not naturally assumed to retain their present status as core operations of tomorrow. Focus on core operations and their definition changes constantly, and production of parts and systems previously manufactured in-house for strategic purposes might very well be purchased from outside suppliers today, or developed and manufactured in cooperation with business partners.

"From the very beginning, we conducted our own mechanical manufacturing operations at Ericsson's factory in Gävle – our most important production unit for radio base stations," Björn Boström continues. "A few years ago, however, it was decided to transfer all mechanical production to the main factory in Stockholm. The production unit in Gävle has already been sold to one of Ericsson's mechanical production suppliers."

The cabinets manufactured by outside suppliers are delivered as empty shells to Ericsson, whose employees assemble and fit necessary cabling and components. In the near future, however, cabinets from outside suppliers will also be delivered with all necessary cabling already installed.

"There is a clearly defined trend at Ericsson production units, whereby independent manufacturers are supplying us with increasing amounts of sophisticated products," Mr. Boström says. "In the immediate future, the number of these sup-

pliers will increase, followed by a thinning-out process as certain suppliers are selected to provide Ericsson with more complete products."

THE NUMBER OF BASE STATION VARIETIES HAS increased through the years, culminating in a large variety available today. To meet the needs of individual customers, Ericsson has to include even more variations in its product range. Mobile Systems has now started to work on several projects designed to produce a standardized production model that will enable Ericsson to limit the total number of base station variations.

"This will lead to larger volumes that will make it easier to find outside suppliers and to negotiate better prices," explains Björn Boström.

Cooperation with suppliers will also become more intimate as a natural part of ongoing development. Eventually, suppliers may also assume some responsibility for design and construction.

When Björn Boström talks about the core operations of Mobile Systems, he repeatedly refers to circuit board production operations conducted by Ericsson Radio Systems in Kumla.

"Production at the Kumla plant has been concentrated exclusively on complex circuit boards for the past five-six years. The fact that we consider circuit boards part of core operations is based on the need for close proximity to production. The circuit boards are used in radio base stations and mobile telephones," Björn Boström explains in conclusion. ■



# Better to purchase than produce in-house

BY: PATRIK LINDÉN  
PHOTO BY: GUNNAR ASK

**purchasing** ERICSSON SAVES time and money by not developing everything in-house, resorting instead to standard component purchases from outside suppliers.

Some parts and components are better and cheaper to buy, compared with in-house development and production. Tools for software development are a prime example. Ericsson purchases software tools from Rational Software, an independent supplier contracted as a cooperation partner a few years ago.

## PURCHASES

By buying standard components instead of developing in-house, Ericsson can save time and money. ●

“Our core operations are focused on production of standard components for software development. We have the skills and expertise Ericsson needs, and it’s a tremendous advantage for us to have Ericsson as a customer, a highly competent client that places stringent demands on our operations. The cooperation agreement between Rational and Ericsson makes us both better suppliers. We share the same vision,” explains Göran Jansson, President of Rational Software in Scandinavia.

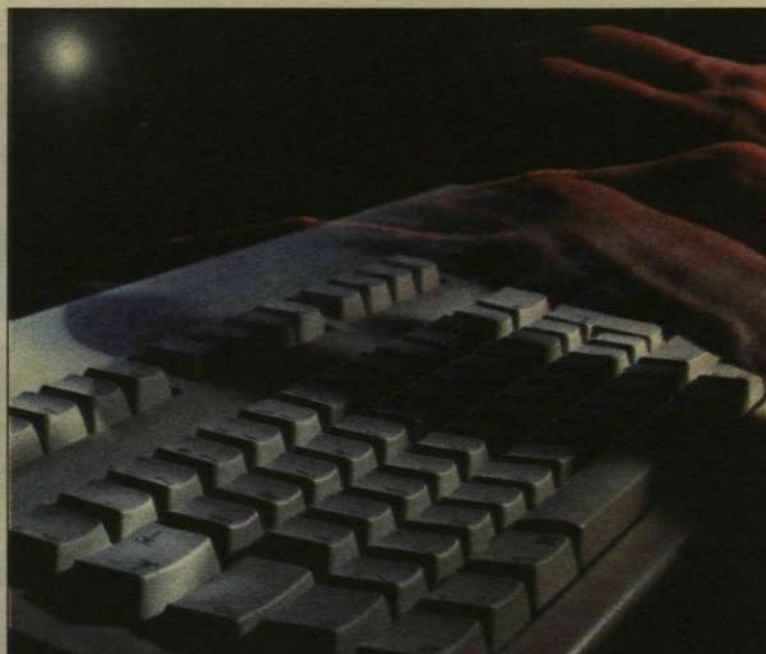
When Ericsson embarked on the development of AXE 25 years ago, there were no standard software components for sale on the market. Everything simply had to be developed and produced in-house, including microprocessors, programming languages, operating systems – everything! Things are different today.

“When you build a summer cottage, you don’t start by making your own tools. The same rule of thumb applies today to software development. You start with certain fundamental elements, certain tools,” says Jorma Mobrin, a member of the Parent Company’s technical engineering unit.

According to Jorma Mobrin, Ericsson went too far in the past, often wasting time to develop software and other tools that can be used only by Ericsson.

“We want to get away from our old home-made toolbox, and focus on making sure that persons working on software development have continuous access to the best materials available on the market. Critics may say we are becoming dependent on Rational Software by not developing our own tools, but Ericsson’s cooperation agreement with Rational enables us to influence de facto standards on the market,” Jorma Mobrin explains. “And we also avail ourselves of other suppliers.”

Development costs for software tools are the same, regardless of how many people or companies use the software. A great deal of money



In the past, Ericsson invested substantial amounts of time and money to develop its own processors and programming languages, for example. Today, tools for software development are purchased from Rational Software.

can be saved, accordingly, by using generic tools. Costs are distributed more evenly, and the more people who use the tools, the better they become, since greater numbers of people detect more faults and bugs. The end result is a better and cheaper product. And the large volumes guarantee consistent quality.

“According to our estimates, Ericsson will save at least SEK 100–200 million by the year 2000 through utilization of generic, or standard, components,” Jorma Mobrin continues. “We believe costs can be reduced by half, maybe even down to one-fourth of today’s cost level.”

However, saving money is not the only consideration. Saving time is also important. By increasing the utilization of standard tools, Ericsson will shorten the time required to introduce new products on the market. If everything down to the last nut and bolt is developed in-house, products may be outdated before they are ready for delivery.

“We’re buying time, quite simply,” says Jorma Mobrin.

The current wave has necessitated a change in attitudes and Ericsson’s corporate culture. The first steps have already been tak-

en. The TMOS network supervision system, for example, contains a much greater percentage of generic components than AXE systems.

“Development resources are a rare commodity, but we have highly skilled technical development personnel, and we intend to utilize their skills to gain optimal advantages in our specific areas of expertise,” explains Ulf Wretling, who is responsible for external technological provisions for Ericsson Utvecklings AB. “Development of support environments is definitely not part of Ericsson’s core operations. Tools and support products and equipment developed by Ericsson in the past were certainly not inferior in any way, but they no longer fill the bill compared with corresponding products and equipment available from outside suppliers,” Ulf Wretling continues. ■

## ETP facilitates external supplies

BY: GUNNAR FRÖBERG

“External technical provisions comprise a business sector already quoted in the multi-billions. Considering the scope and magnitude, it’s extremely important for Ericsson to choose the correct concept for future operations, for both technological and business economic purposes,” says Christer Sparreskog, Manager of Ericsson’s External Technology Provisioning (ETP). It should also be noted, however, that Ericsson has no intention of terminating or cutting back on its own development efforts, but rather focus more strongly in priority areas. Managed correctly and efficiently, ETP should enable the Company to concentrate

resources in core operations, thereby creating greater value added in Ericsson products by supplementing them with technologies and products purchased from outside suppliers. The fine line between products that should be purchased externally and products that should be developed in-house is reviewed and examined continuously, based on the rapid rate of market and technological development. Strategic external technology philosophies are focused strongly on priorities, accordingly. And prioritization of resources.

Ericsson has formulated a special ETP method to facilitate its work with external technology suppliers. The method helps the Company choose the

right products and suppliers, making sure selections are also based on the entire life cycle of individual products. Ericsson’s own strategy and current market conditions and demands. The method’s broad concept allows Ericsson to remain better prepared to cope with new conditions and increased competition through closer cooperation with outside suppliers. ■

For more information on Ericsson’s ETP method, visit the home page: <http://etpweb.ericsson.se/home/htm>.



# Outsourcing frees up resources in Karlskrona



BY: THORD ANDERSSON

## outsourcing

THE SALE OF ERICSSON'S PRODUCTION plant in Karlskrona to Flextronics is a prime example of what we call outsourcing.

The sale was in total accord with Ericsson's strategy for global product supplies. No two cases of outsourcing are ever the same, however. Every agreement is unique unto itself. The transaction in Karlskrona is an excellent case in point.

The Verkö and Vedeby production units in Karlskrona comprised Ericsson's global production resource for all solutions related to Consono MD110, with the exception of the Chinese market, and for DRA 1900 public radio access systems and the Dialog 3,000 series of system tele-

## OUTSOURCING

Contract agreements are reached with independent suppliers for product deliveries. In some cases, suppliers also take over production plants and personnel. ▶

phones. Flextronics will take over all production and assembly of every specific system for customer deliveries, including tests of finished solutions.

The transfer of Ericsson's production units in Karlskrona to Flextronics will provide the facilities with new skills and expertise to increase production efficiency and reduce production costs. For Ericsson, the transfer will free up resources that can be used in core operations. Flextronics now has complete access to production and core operations. Through its global market presence, the company will receive impulses from several different sources, which will benefit production operations in Karlskrona through faster product flows and continuous modernization and development of the operations.

Assumption of production responsibility for Ericsson products by Flextronics does not imply that Ericsson has or will relinquish its ownership rights to the products. Flextronics does not own any products whatsoever, but rather concentrates its operations exclusively on manufacturing assignments from other companies in related business areas.

THE ONLY DIFFERENCE CUSTOMERS WILL NOTICE from the change will be shorter through-times. Ericsson also retains total responsibility for all deliveries from the Karlskrona plants. Neither will any changes take place in product and systems development, which remain under control of the business areas that contract production operations to Flextronics. The entire Supply &



Can it be more effective? It takes only a few minutes to produce a Dialog 3,000 series system telephone.

Photo: MATS ARNSTRÖM

Distribution unit in Karlskrona for customer order processing will remain as an independent Ericsson unit in Karlskrona.

Flextronics was attracted to the Karlskrona production plant for several different reasons, including the modern production facilities and competence levels of Ericsson's employees. The very favorable corporate climate and aura of optimism in Karlskrona were probably other factors considered by Flextronics. In addition to Telecom City, a network serving several active international players in the region, the city of Karlskrona is also home to a technical college with strong emphasis on telecommunications technologies.

Another factor contributing to the successful assumption of production by Flextronics was the option to take over all manufacturing facilities, without creating any disturbances or interruptions in production or deliveries.

Ericsson and Flextronics have their sights set

on close cooperation between the two companies, both of which are worldwide enterprises with similar strategic approaches in closely related business areas. ■



Operations in Verkö, Karlskrona were started as recently as 1993. Last year, more than two million circuit boards were manufactured for installation in all types of products and systems made in the Verkö plant.

Photo: ÅKE BERG



# Small companies flourish in Ericsson Business Park

BY: KARI MALMSTRÖM  
PHOTO BY: DAVID LEE

## outsourcing

A GALLERY, AN OFFICE BUILDING, A FACTORY and a well-lubricated distribution center – Ericsson Business Park in Scunthorpe, a small town in northern England, is all this and more! Ericsson Ltd. of the UK has become an outsourcing pioneer in Ericsson's world community of companies. A visit to Scunthorpe provides an excellent lesson in how outsourcing works in reality.

The factory is owned by Ericsson, but it also houses several independent companies that cooperate closely with Ericsson as contract suppliers of goods and services. Most of the companies were created as the result of operations outsourced by Ericsson, and are conducted today by the same persons who worked formerly as employees of Ericsson.

Most of the products that Ericsson sells in the British market pass through Scunthorpe. Final assembly and testing, customer adaptations, logistics and distribution comprise the lion's share of operations.

"In 1995, more than half of all Ericsson employees in Scunthorpe worked in production. That figure is much lower today," says David Clayphan, Divisional Director. "Concentration on outsourcing has been an important part of our strategy during recent years."

"We don't own any cars, we lease all our computers, and we have agreements with components suppliers who deliver long before our inventories are exhausted. Naturally, we also purchase such services as security, cleaning and catering," David Clayphan continues.

THE ORGANIZATION IS STREAMLINED. THE COMPANY HAS SUB-contracted virtually all operations that can be subcontracted. The company's own resources are concentrated in areas that are critical to customer satisfaction.

"When every employee is able to concentrate on his/her core skill areas, everything becomes more efficient," David Clayphan explains. "And we get better value for our money. The money we save on investments and capital tied up in operations is greater than our costs for services."

"As independent companies, subcontract suppliers have to improve their operations continuously, increasing their quality levels, speed and flexibility," Mr. Clayphan continues.

The factory premises really do resemble a gallery of sorts. "Boutiques" of independent companies line the walls, some with large shops, others small. EXi Cables, a company that manufactures cable for Ericsson valued at about GBP 1 million annually, for example, occupies a large part of the building with more than 50 work stations.

Eastern Calibration Services Ltd. calibrates machinery and equipment. The company chose the name Eastern since its geographic location is farther to the east than any other calibration company in northern England.

"We cover a wide expanse in marketing our services," says John Dennis, Managing Director, as he



shows a map pinpointing the company's competitors and prospective customers. As the name indicates, Eastern Calibration Services has a few competitors west of Scunthorpe, but nothing to the east of Scunthorpe all the way to the coast. "In addition to Ericsson, we have about 75 other customers. Granted, most of them are small companies and, in terms of revenues, Ericsson is the dominant customer, but our objective in 1997 is to reach business distribution of 50-50, divided evenly between Ericsson and other customers," John Dennis continues.

EASTERN CALIBRATION'S SERVICES IS A GOOD EXAMPLE OF HOW independent suppliers work hand in glove with Ericsson and other customers. The company's staff of nine are all former Ericsson employees, and surplus capacity was sold to outside customers even before the calibration operations were detached from Ericsson and became an independent company. The main difference now is that Eastern Calibration Services has the freedom of action to focus on business objectives above and beyond Ericsson's needs, and to make its own independent investments and priorities.

Anne Vernon, Manager of EXi Cables, agrees: "We have our own identity, in parallel with our strong links to Ericsson, providing us with the best of both worlds."

EXi Cables is Ericsson's source of cable supplies for the Scunthorpe factory and installation operations throughout all of England.

"Our core operations are focused on becoming the leading supplier of cable," Anne Vernon continues. "As an independent company, we are in a position to realize new ideas, to change and improve – without waiting for decisions from higher management levels. We are able to fend for ourselves in our own niche! That's a tremendous sense of freedom. We want to develop new methods, review priorities and investments, and we only have to answer to ourselves in creating the business scope we need."

Anne Vernon also explained that, after one year of independent operations, EXi Cables is beginning to develop its own company culture. The company has its own T-shirts with the EXi logo, its own bonus system and a strong sense of pride.

Everything seems to have progressed like a hot knife through butter. Was it really that easy?

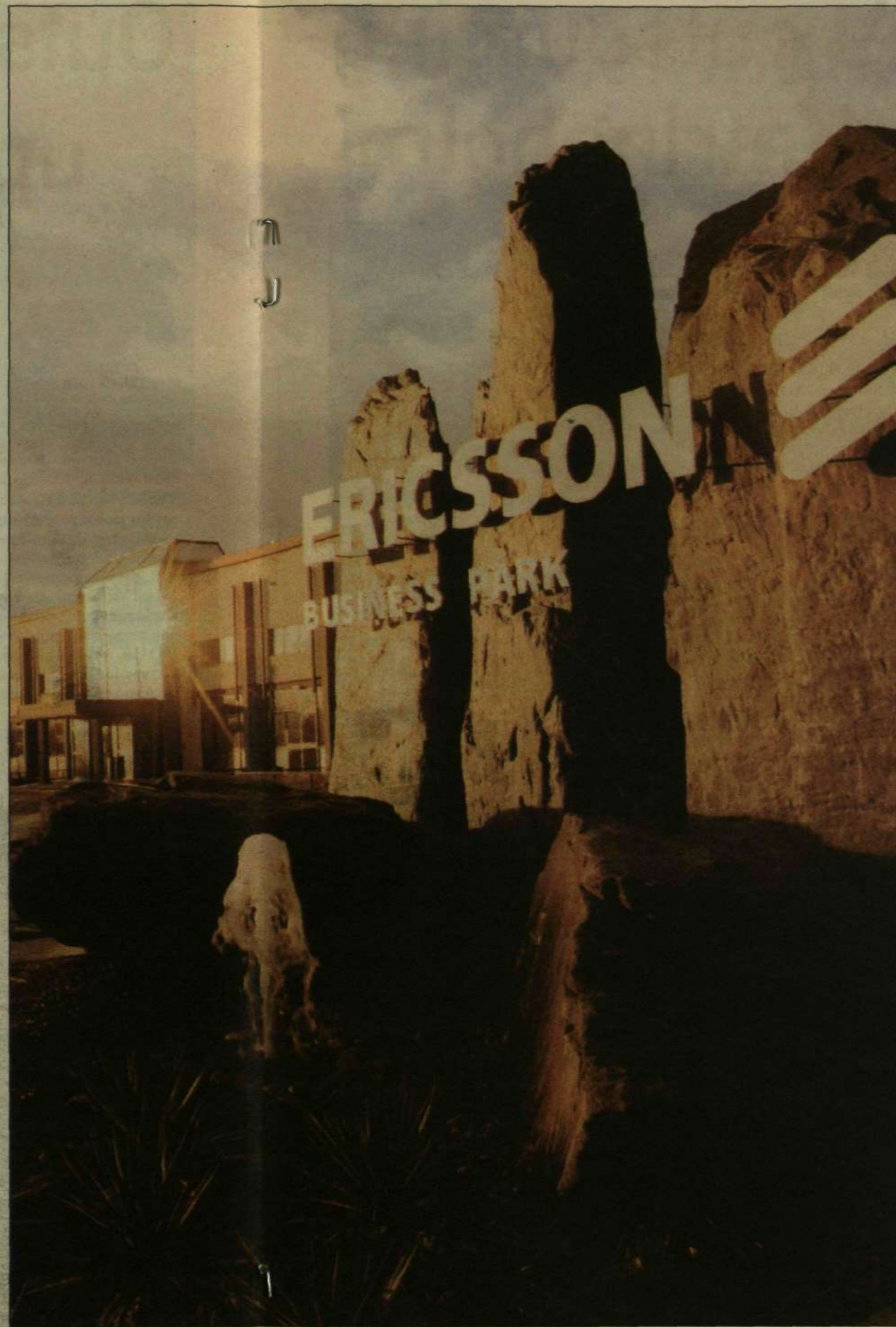
"When Ericsson first announced its outsourcing plans, there was some disquiet," says Maureen Ruff, Information Manager at Ericsson Business Park.

"However we all managed to turn a threat into an opportunity for the employees," Maureen Ruff continues.

Everybody is part of the Scunthorpe factory family, outsourced or not outsourced, it doesn't make any difference.

"Our suppliers, naturally, are our equals. We outsourced the operations to develop strategic cooperation between independent partners, characterized by a certain Ericsson profile, however," Mr. Dalglish continues.

"We have two homes," confirms Emma Chafer, an employee of Anglia Air Freight.



Anglia is responsible for goods transportation operations from the Scunthorpe factory. The employees wear uniforms and they also have a strong sense of identity with their own company, which has more than 20 years of experience as an English shipping company.

The Rank Xerox "Document Company" has been part of Ericsson in Scunthorpe since 1992. In terms of name recognition, the company is able to compete with its principal. In its Scunthorpe version, however, Rank Xerox is definitely a part of the Ericsson Business Park.

David Clayphan underlines that although outsourcing sensitive word, it can be a constructive way of increasing operat-

ing efficiency as well as securing a long term future it's a means of preparing for the future, both for Ericsson and detached business operations.

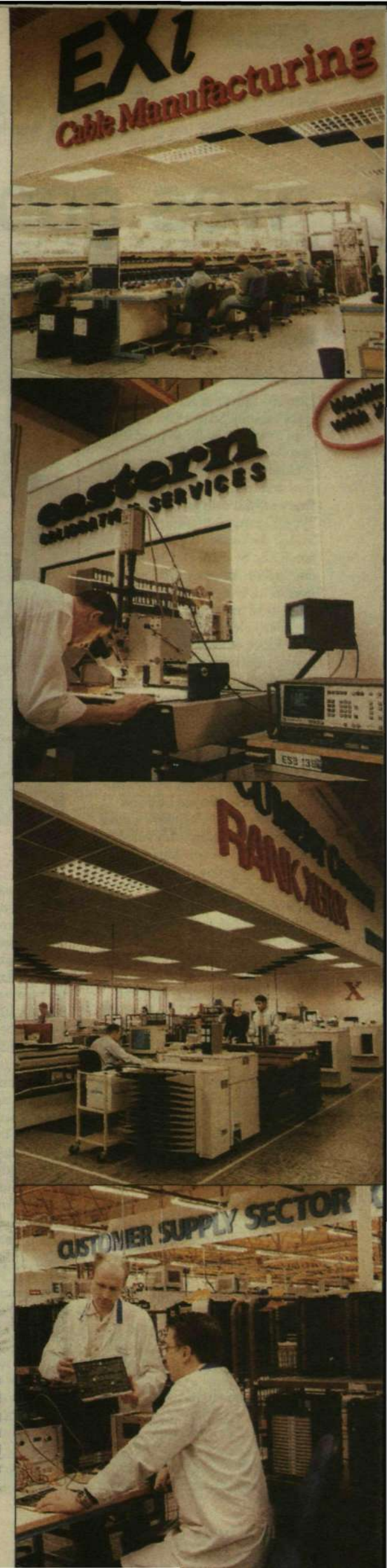
"EXi IS A PRIME EXAMPLE," DAVID CLAYPHAN EXPLAINS IN conclusion. "We need EXi Cables and wouldn't survive a minute without them, but cable supply requirements can change very quickly. As an independent company, EXi has excellent potential to compete and cultivate customers outside Ericsson, which will also reduce its vulnerability. By outsourcing at the right time, jobs can be saved in the long-term perspective."

EXi Cables produces customized cable efficiently and quickly for Ericsson's operations in all parts of the UK. About 50 skilled employees cut cable, mount connectors, test the products and package finished goods.

Eastern Calibration Services offers specialized, high-quality calibration services. Only one year after its establishment, the Company has 75 customers in addition to Ericsson, including several companies in the petrochemical and electronics industries.

The largest copier operations in northern England, Rank Xerox in Ericsson Business Park, produces tens of thousands of copies and paper documents annually in the most modern and sophisticated copiers on the market.

Two Ericsson employees work on the completion of a customer order. Most of the products that Ericsson sells in the British market pass through Scunthorpe – a melting pot for deliveries from subcontractors and Ericsson's own production units.





# 'Ericsson's outsourcing was good for Katrineholm'

BY: EVA HETTING

PHOTO BY: SUSANNE ANDERSSON

## outsourcing

LARGE PARTS OF production operations formerly conducted at

Ericsson's plant in Katrineholm were outsourced in 1996. In less than a year, virtually all products have been exchanged.

Until year-end 1995, the production unit in Katrineholm was an Ericsson Telecom installation with approximately 1,050 employees. Today, the factory is part of Ericsson Radio Systems and has 413 employees. All other production operations not classified as core operations have been sold to two American electronics companies: Avex Electronics, a specialist in wiring side, cable and circuit board production, and Bergs Connectors, whose operations are focused on the production of connectors. Avex is part of the Huber Group and Bergs Connectors is a DuPont Group company.

Two foreign companies, accordingly, have established business operations in Katrineholm, a small Swedish community with 32,000 inhabitants. The two American companies employ about 800 persons and are relatively large employers in the community.

Local officials look favorably on the outsourcing concept, and believe their cooperation with Ericsson has functioned extremely well. Lars-Herman Larsson, the industrial director of Katrineholm, believes outsourcing is a trend that swings like a pendulum.

"HAVING A COMPANY LIKE ERICSSON as a well-established member of our community, with more than 1,000 employees, was a source of security in Katrineholm, but if the Company has decided to outsource some operations, I'm sure it was in the best interests of Ericsson and our community. New companies are a healthy trend that can broaden our industrial base. In the long-term perspective, they will also increase local competence levels," Lars-Herman Larsson explains.

The city of Katrineholm and Lars-Herman Larsson were deeply involved in the Avex transaction, partly as part of efforts to solve various problems with industrial premises. The industrial premises Avex wanted for its activities were owned by the community and were rented to other companies, a car dealership and an architectural firm.



Since everything happened so fast in the Avex transaction, there was only a month to work out details with industrial premises, a difficult and sensitive issue. The municipality promised to find equivalent or better premises for the two local companies without any moving costs to be absorbed by either company.

Local officials also assisted in establishing contacts with the county labor board, the employment office, county officials and various government agencies and departments. The process of establishing new business operations in Sweden can be rather complicated.

"Of course, there were some difficulties. Foreign companies don't always understand the various routines of local and federal government authorities. That's where we can help. It's important for new companies get off to a good start when they come to Sweden," Lars-Herman Larsson continues.

"THE LANGUAGE AND VARIOUS aspects of our social system pose certain problems, which is only natural. That's where we can help, offering advice and answering their questions," he explains.

The Avex and Berg transactions were quite different from each other,

with Berg requiring only limited input from local officials. The transaction involved the sale of a complete business venture, including production plants and marketing departments, product development facilities and other assets. Since Berg moved into some of Ericsson's former buildings, there were no major problems with premises. Neither does Berg plan to hire any new employees.

In the case of Avex, the company still receives some support from Ericsson. Avex does not have a logistics center or its own warehouse facilities.

"In both transactions, however, it was important for us to establish a form of community relations that will enable us to get feedback on their impressions and answer certain needs," Lars-Herman Larsson continues. "It was extremely important, for example, to make sure we have a functional infrastructure, with schools, educational facilities and other social amenities."

Local officials are also anxious to create good working relations between the American companies and Katrineholm Technical College.

"Naturally, we hope Avex and Berg establish and sustain flourishing business operations. We want them to develop their operations as planned, to build strong platforms for future growth and prosperity," Lars-Herman Larsson says.

Avex has already created 100 new jobs in Katrineholm, and local officials have high hopes for more jobs.

"The establishment of business operations in Katrineholm by Avex and Bergs is good for our community. And it's important that everything functions satisfactorily for all parties concerned. Perhaps we can attract more new business based on the success of present operations in Katrineholm," Lars-Herman Larsson concludes. ■





## Industry that is growing at a blistering pace

BY: LENA WIDEGREN

### outsourcing

"THE CURRENT TEND IS CLEARLY that Original Equipment Manufacturers (OEMs) are having to cut costs," says Jeffrey Nesbitt, president of SCI Systems Inc. in Europe.

"It is apparent, from the great number of offers available from OEMs now wanting to outsource their electronics manufacturing."

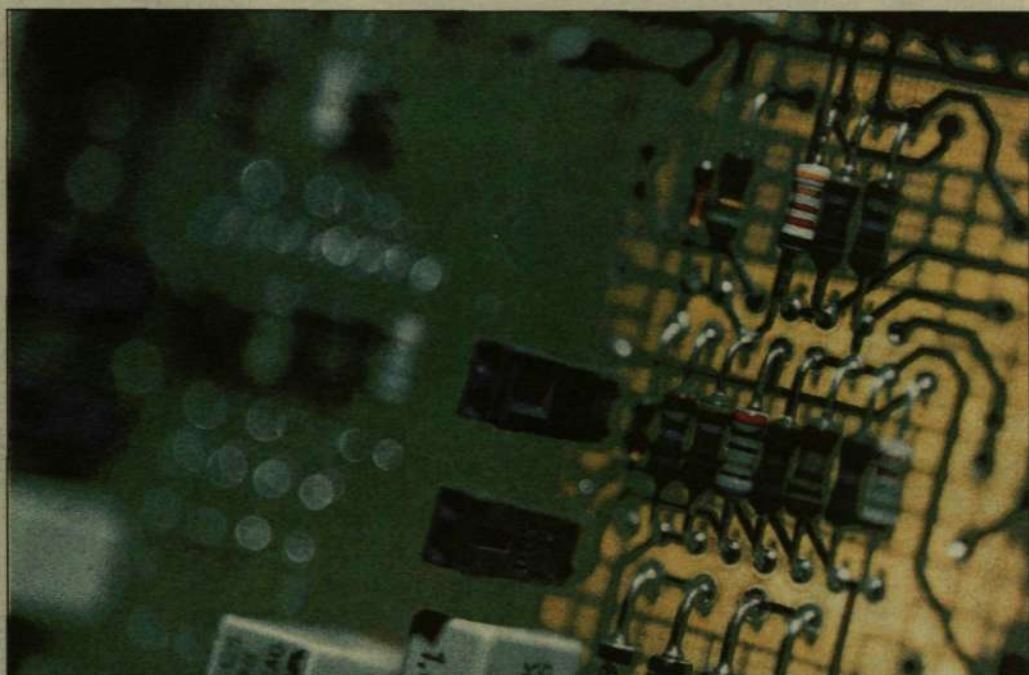
SCI Systems is an American company with head office in Huntsville, Alabama, and it is the world's absolutely largest contract manufacturer in the electronics industry. The Group comprises 21 plants located throughout the world, with a total of 15,500 employees. All of the plants are part of a standardized production system which is one of the reasons why SCI can maintain optimal efficiency and keep its costs low. So far, SCI, together with a few other companies, has a superior position as contract manufacturer within the electronics business. This top group includes Solectron, Avex, Flextronics and Jabil – all of them also American companies. Their superior position is largely due to their present production capacity and financial resources. In other words, they are capable of making large bulk purchases, which means they can also expand their capacity quickly. During the past few years, these five top companies have had a growth rate more than double that of the industry in general, which has been about 20 percent per year.

"SCI WOULD BE CAPABLE OF PURCHASING MANY, large objects – and we are relatively unique in that. As I see it, Solectron is our only competitor," says Jeffrey Nesbitt.

"Naturally, it's a major strategic advantage to have the financial capacity to be able to act on the opportunities presented in the expansive telecom and datacom industry."

However, SCI and Solectron probably will not be able to sit calmly on the throne unchallenged much longer. At present there are about a dozen contract manufacturers with the potential for rapid growth. Traditionally, contract manufacturers have been engaged by the OEMs as temporary production resources during particularly heavy periods. Business-cycle lows and other circumstances have created a whole new situation for all players in the business. Newly established tele- and datacom suppliers establish partnerships with contract manufacturers right from the start, while the long-established traditional manufacturers outsource their electronics manufacturing to companies such as SCI Systems.

In what direction does Jeffrey Nesbitt forecast that the industry will develop? "The great need for contract manufacturers is going to continue to grow. So I believe we are going to be compelled to continue in our area, to expand our operations to include design, final assembly and distribution. Eventually, the contract manufacturers' role will become more an extension of the OEMs than that of the traditional supplier." ■



# Modern age suppliers

BY: LENA WIDEGREN

### outsourcing

IT'S A KNOWN FACT THAT COMPETITION puts added pressure on prices, forcing companies to become more flexible and effective in their efforts to develop and launch new products, in parallel with greater demands on faster deliveries to customers. This is where contract manufacturers enter the picture. Contract suppliers may be described as a source of resources and assets divided among countless manufacturers of end-products that include many of the market's largest data and telecommunications companies. A growing number of companies, including Ericsson, has recognized efficiency enhancement factors that enable them to strengthen their competitive edge and reduce costs by outsourcing production operations to contract suppliers. In the areas of mechanical and cable production, Ericsson has already entered into cooperation agreements with independent suppliers.

THE BUSINESS CONCEPTS OF CONTRACT production suppliers are concentrated on large-scale production operations on behalf of other companies, and highly competitive prices. They do not develop products of their own, accordingly, basing their operations exclusively on contract assignments from a broad customer base. By working under contract for as many customers as possible, independent suppliers maintain maximum capacity utilization throughout the year, thereby eliminating risks of economic fluctuation resulting from a poor season, etc. They are also renowned for their strategy of concentrating operations to low-wage countries in their efforts to attain the lowest production costs as possible.

Companies outsource production operations to contract manufacturers for several different reasons. Many of them have recognized the need to release capital tied up in production and concentrate such capital in more important research and development efforts, thereby eliminating burdensome capital expenditures for new machinery, equipment and other investments. In many cases, the operations are strategically important for the company, bordering on core operations, which naturally creates the need for closer and more long-term cooperation with contract manufacturers, compared with traditional relations with outside suppliers. Many agreements with contract manufacturers eventually mature into business partnerships.

MUTUAL CANDOR, TRUST AND GENEROSITY generally characterize most partner relations, and Ericsson is also lured by opportunities to gain access to the established basic technologies of many contract suppliers, similar to knowledge and concept banks developed in cooperation with many of the market's leading suppliers of data and telecommunications systems and equipment.

In the automotive and personal computer industries, the sophistication of cooperation agreements has significant progress (led by pioneering companies in Japan and the U.S.), whereby production responsibility is delegated in its entirety to contract manufacturers. The supplier receives orders, produces the equipment, assembles and tests it and, finally, ships finished products to end-customers, with the principal's logotype and all. The concept makes it possible for the OEMs to focus resources on research, development and marketing of their products. ■

Every industry has its terminology. Following are a few of the new expressions we will meet more often in pace with Ericsson's cooperation with contract manufacturers increases.:

**CONTRACT ELECTRONIC MANUFACTURER (CEM):** Contract manufacturer in the electronics industry.  
**ORIGINAL EQUIPMENT MANUFACTURER (OEM):** Manufacturer of the end-product.

**GREENFIELD:** Contract manufacturer's own factory, built new from the foundation up, in contrast to purchasing facilities from others.  
**FIRST-TIER SUPPLIER:** Main supplier to the end-product manufacturer. In practice, the contract manufacturer.

**SECOND-TIER SUPPLIER:** Supplier to the contract manufacturer and, consequently, an indirect supplier to the end-product manufacturer.

**VERTICAL INTEGRATION:** Company conducts manufacture at several levels, that is, manufactures itself rather than purchasing. Ericsson is one of the companies which traditionally has heavily applied vertical integration.  
**BOX-BUILDING:** When the contract manufacturer not only produces a subportion, but assumes production responsibility for the entire product through to delivery to the customer.



Outsourcing is a highly topical issue in Ericsson. And many other companies. Large companies in all parts of the world are talking about outsourcing, and many of them are making moves to implement the concept. There are several reasons for the emergence of outsourcing and its popularity today, and not 10 or 20 years ago. Contact discussed the outsourcing phenomenon and the reasons for its newfound popularity with a professor of industrial economics and a professor of industrial production.

# Global economy calls for new corporate culture

BY: PATRIK LINDÉN  
ILLUSTRATION BY: G.B. DIEBOLD

“OUTSOURCING PRODUCTION OPERATIONS is the rage in many industries today,” says Henrik Blomgren, who is writing his doctorate thesis on outsourcing and related topics at the Institution of Industrial Economics at the Royal Institute of Technology in Stockholm.

According to Henrik Blomgren, the most common reasons for outsourcing are opportunities to save money and, perhaps most important, save time and achieve greater flexibility. To reduce the significance of outsourcing by maintaining that it's only a trend phenomenon, however, would be a gross oversimplification.

In public debates and discussions on the subject of outsourcing, the automotive industry is often projected as its pioneer. In Sweden, Saab and Volvo were two of the first companies to implement outsourcing, or contract production, by independent suppliers. Intensified competition forced the automotive industry to try new methods and means of saving money.

“In the case of Ericsson, I'm sure strong focus was also placed on balance sheet considerations,” Henrik Blomgren continues. “But such considerations are relatively unusual motives for outsourcing in other industries.”

Ericsson, quite simply, has to free up capital now tied up in fixed assets and machinery and make new resources available for continued research and development programs.

NEW TRENDS IN MANAGEMENT AND ORGANIZATIONAL structures often emanate from the U.S., but Japan has set the standards as a paragon in new production methods during recent years.

“When industrial analysts and other observers talk about pure production, most references are focused on the Japanese automotive industry, where outsourcing originated,” says Henrik Blomgren. “The fact that 60-70% of all constituent components in a Japanese car are purchased from companies other than the manufacturer is often emphasized in discussions of Japan's automotive industry.”

However, he notes that Japan is not the only example.

“In ‘softer’ industries, the U.S. is often the source of impulses. The entire leased personnel manpower pool concept is one example. Reception areas, telephone exchanges and company printing houses are other examples of outsourcing in this segment,” says Henrik.

Why is outsourcing so popular now? What has happened that outsourcing wasn't practiced 20 years ago?

“Production is more complex today than just ten years ago. It is, quite simply, more difficult to manage everything single-handedly,” explains Christer Karlsson, professor in industrial production at the Stockholm School of Economics.

In his opinion, there was not a sufficient number of competent companies to take over operations in the event that any-

body had ever thought of outsourcing. Corporate structures are also different today.

THE GROWTH OF GLOBAL ECONOMICS IS ANOTHER REASON for the emergence of outsourcing today. In the past, companies were content to be the market leader in one or two countries. Today, multinational companies strive to establish world-class standards to secure their continued survival. Companies also have to excel in terms of all constituent parts to reach and maintain positions of leadership.

“Another contributing factor to the rapid growth of outsourcing is concentrated on ownership. Years ago, many companies were under stable ownership and were able to concentrate on long-term operations. Conditions have changed since the days of ownership stability. Shares are traded every second of every minute, and demands on capital return have become much greater. A classic example is Stora, the Swedish pulp and paper group that recently announced substantial investments in a new paper machine. When the company released its investment plan, the value of Stora shares went down, rather than up,” says Christer Karlsson.

The concept of companies making large investments in production facilities is considered detrimental to the flexibility of their capital return and corporate structures.

It is often said that companies must retain certain parts of their in-house production operations to maintain some semblance of control. Or to protect the integrity of important skills and expertise. Christer Karlsson does not agree.

“On the contrary,” he says. “In many cases, commercial relations with contract manufacturers offer greater security than in-house production. It's easier for employers to place demands and implement such demands with suppliers than with their own employees.”

“The market is more effective than hierarchies,” is an expression Christer Karlsson uses to illustrate his case in point.

There are also several example of competing companies that use the same suppliers without jeopardizing the integrity of sensitive information, says Christer Karlsson. In the past, many production companies, and Ericsson in particular, were engineer-controlled. Now, the economists have a greater voice. This also contributes to a different way to view production and how to acquire the components needed. In the days of Lars Magnus Ericsson, companies manufactured their own screws. This would never work today.

Outsourcing is a major topic of discussion today and its is especially important that it is viewed as a method among others and not a goal in itself. Sometimes it can seem as if there is some inherent value in outsourcing. There are also leadership and management consultants who view outsourcing as a buzzword, that is, something everyone is talking about without really meaning anything in particular. Similar to the thinking that everyone has to have a home page on the Internet, although not everyone knows what they are going to use it for.



## Ericsson not alone in outsourcing

BY: LENA WIDEGREN

OUTSOURCING SEGMENTS OF operations is not unique for Ericsson in the telecom market. Several of Ericsson's traditional competitors are undergoing a similar structural transformation with outsourcing as a strategy - which is apparent from a selection of articles published during the past two years.

The need for a structural transformation pertains largely to telecom suppliers with a long tradition in the industry. They, like Ericsson, have a history which explains a company structure with high vertical integration, or for some other reason they have discovered that their own organization was too large and needed to be cutback. In contrast, the markets new players, particularly those from the datacom industry, have totally different backgrounds with their strategy of beginning directly with a focus on product development and marketing and using suppliers and partners to take care of production and other services.

A SUMMARY WHICH CONTACT REVIEWED SHOWS, for example, that the lion's share of the American contract manufacturers' customers are PC manufacturers. Examples are Cicero, Bay Networks and Hewlett-Packard. The list includes an Ericsson competitor, Nortel - which ranks among the new-generation telecom supplies - and Alcatel, the French company which, with Ericsson and Siemens, is one of the three largest telecom suppliers in Europe.

It is apparent from various news items that Alcatel is reviewing its production structure. There were frequent reports between 1995 and 1996 about plants being closed or divested at the cost of hundreds of jobs. Some examples are the plant in Toronto, Canada, where 300 jobs were lost in conjunction with the shift of production to three other plants in 1996, and as a result of restructuring 2,200 jobs were cut in Italy. In the same year, Alcatel announced that it planned to invest about SEK 250 million in Brazil and more than double capacity at the plant in the country. It appears that Alcatel is concentrating its production to just a few strategic sites in the world.

IT IS A KNOWN FACT THAT SIEMENS OF GERMANY has cut its workforce by more than 7 percent from 1992 to 1995, when the Group had about 382,000 employees. When this information was published, it was also disclosed that 12,000 more jobs would be cut at the end of 1995. Siemens' CEO was quoted as saying: "all activities which we have not defined as core operations are under review, including the profitable activities." Since then large portions of Siemens' production has been moved from western Europe and there is information from 1995 that corporate management has plans to shift even more production from Germany. It appears that most of the company's assembly of component products is in the Czech Republic, chips in Malaysia and computers in China.

It is clear that the entire industry, including Ericsson is being transformed in line with the new age's demands and needs, and that the pace is blistering.



# From a wide range to core operations

BY: PATRIK LINDÉN

CHANGE IS THE ORDER OF THE DAY. CONCENTRATION ON core operations is the key concept in Ericsson. Looking back, it's not difficult to understand why.

Ericsson has always focused on a broad range of products in unrelated areas. Traditionally, Ericsson has manufactured everything from locks and fire alarms to bank ATMs and pipe connections. At one time, office furniture was also included in Ericsson's product range.

TRAFFIC SIGNAL SYSTEMS FOR RAILWAYS AND conventional traffic light systems were manufactured by Ericsson until quite recently. The next time you're waiting for the "Go," look at the supplier's name under the pedestrian button. Don't be surprised if you see LM Ericsson.

Ericsson's operations became diversified 100 years ago, before the close of the 19th Century. Fire alarm boxes, or fire telegraph stations, as they were also called, were once produced by Ericsson. The tradition was followed in modern times by production of fire detection devices. Air-raid alarm systems were also included in Ericsson's product range for a few years.

The classic wall paging system used in many office buildings, the one with five blinking or lighted red lights, is another Ericsson product. The systems are still

installed in many office buildings. Ericsson also makes time reporting systems, also called time clocks. These were produced as late as the 1980s and the latest versions were computerized. Talking about computerized, most people are aware that Ericsson had a go at producing PCs. This was not a great success is one way to summarize this attempt.

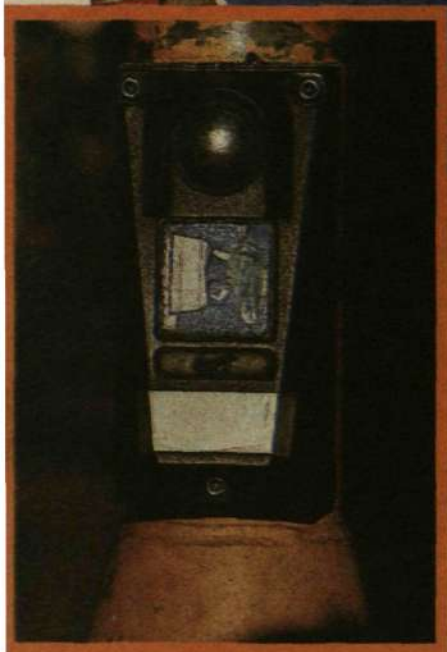
HOW STRATEGIES HAVE CHANGED IS CLEAR from reading the three volumes on Ericsson's history which were published in the conjunction with the 100-year anniversary in 1976. One item stated:

"As a result of the rapid growth in sales and despite the expansion of premises, there was a shortage of production space. The wood components for the telephone instruments and countertops for the switches were purchased from furniture manufacturers, and surface coating was also handled by outside supplier."

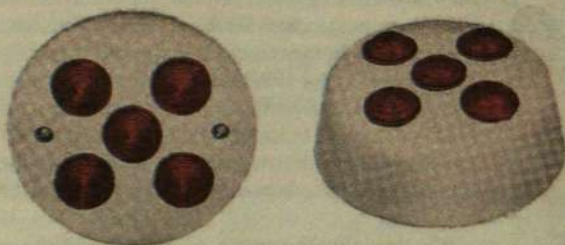
So far, this sounds like a current phenomenon. But, the item continues:

"The situation improved in 1883 when a steam engine was installed."

Change and transformation has always been a part of Ericsson. ■



Look under the button next time you're waiting to cross the street. Ericsson has manufactured traffic signal systems for railways and conventional traffic light systems for years.



Ericsson's personal paging system with the five blinking lights is still installed in many plants.



Smoke detectors were also a part of the Ericsson product program.

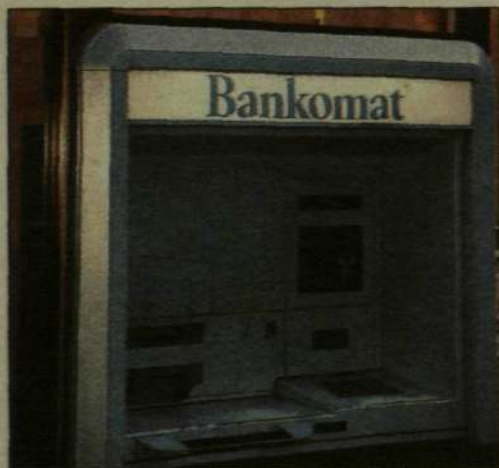




Fire alarms were also included in Ericsson's product range.



Did you know that Ericsson used to manufacture locks?



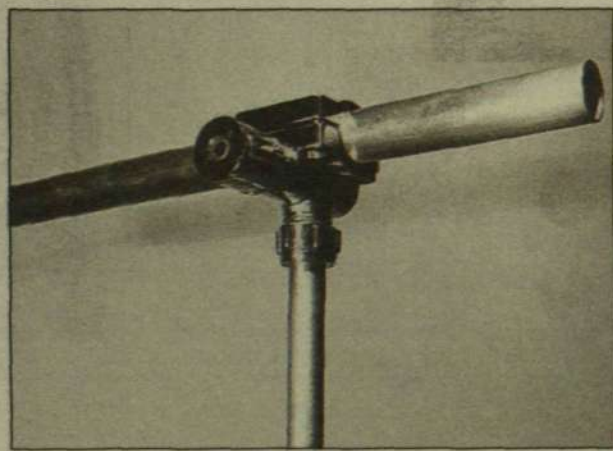
Ericsson bank ATMs are still in use.



Do you recognize the time clock? Ericsson's time reporting systems are still used in many offices.

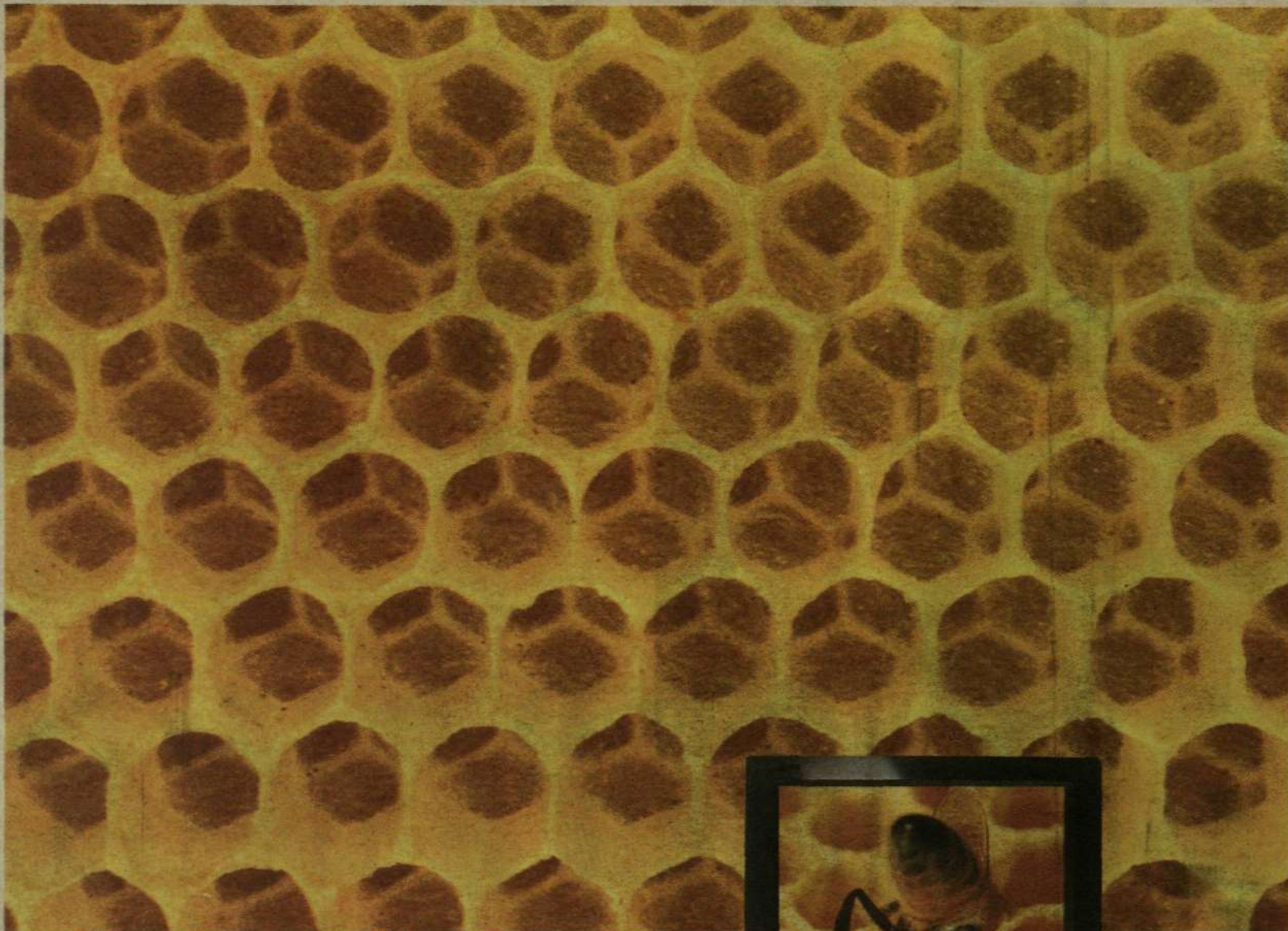


Radiola brand radios were produced by Svenska Radioaktiebolaget, which was part of Ericsson.



Ericsson also produced tube couplings.





Build a smart intranet at the outset.  
Your colleagues will appreciate that.

Everybody is talking about intranet. When used correctly, this new technology improves internal communications considerably. More information becomes more accessible for more of your colleagues.

But how do you go about building an effective intranet? Is it enough to set up a few web servers and then push a button?

Not really. When Ericsson Data, in the mid 80s, started up internal networks based on Internet technology, we did it thoroughly. Our aim was to give Ericsson employees fast and secure access to information.

We now operate hundreds of web servers across the world.

Along the way, we've learned how to build stable platforms, integrate databases and maximize security.

Now, you can tap into all this know-how. We first help you analyze information requirements. And then propose the correct technical solutions. We also provide training in web management and in creating and searching for information. By drawing on our experience, you avoid beginner's problems — and meet the expectations of your colleagues quickly.

Interested? Contact [anders.herlin@edt.ericsson.se](mailto:anders.herlin@edt.ericsson.se) (+46 8 757 06 89) or [jens.magnell@edt.ericsson.se](mailto:jens.magnell@edt.ericsson.se) (+46 8 726 27 53).

ERICSSON DATA - IN NETWORKING SINCE 1985



Sweden: (Head office), LM Ericsson Data AB, S-125 82 Stockholm, Sweden. Tel: +468 726 25 00.  
USA: Ericsson Inc. Data Services Americas, 730 International Parkway, Richardson, Texas 75081, USA. Tel: +1 214 669 9900.

Australia: Ericsson Data Australia Pty. Ltd. 61 Riggall Street, Broadmeadows, Victoria 3047, Australia. Tel: +61 3 9301 1000.  
Netherlands: Ericsson Data Netherlands B.V. P.O. Box 209, NL-5120 AE Rijen, Netherlands. Tel: +31 161 24 66 11.

Great Britain: Ericsson Data U.K. Ltd., Telecommunications Centre, Woodlands Court, Albert Drive, Burgess Hill, West Sussex, RH15 9TP, Great Britain. Tel: +44 1444 234 567.

Spain: Ericsson Data Spain S.A., Torres Quevedo, 2 Planta 6 Room 1640, 28914 Leganes (Madrid), Spain. Tel: +341 339 10 00.