CONTACT

ERICSSON PUBLICATION FOR EMPLOYEES WORLDWIDE No. 4 1993

German record order

Mannesmann Mobilfunk has given Ericsson an order for mobile telephone equipment for 3.5 billion kronor, the largest private mobile order ever..

Page 5

Radiation allergy

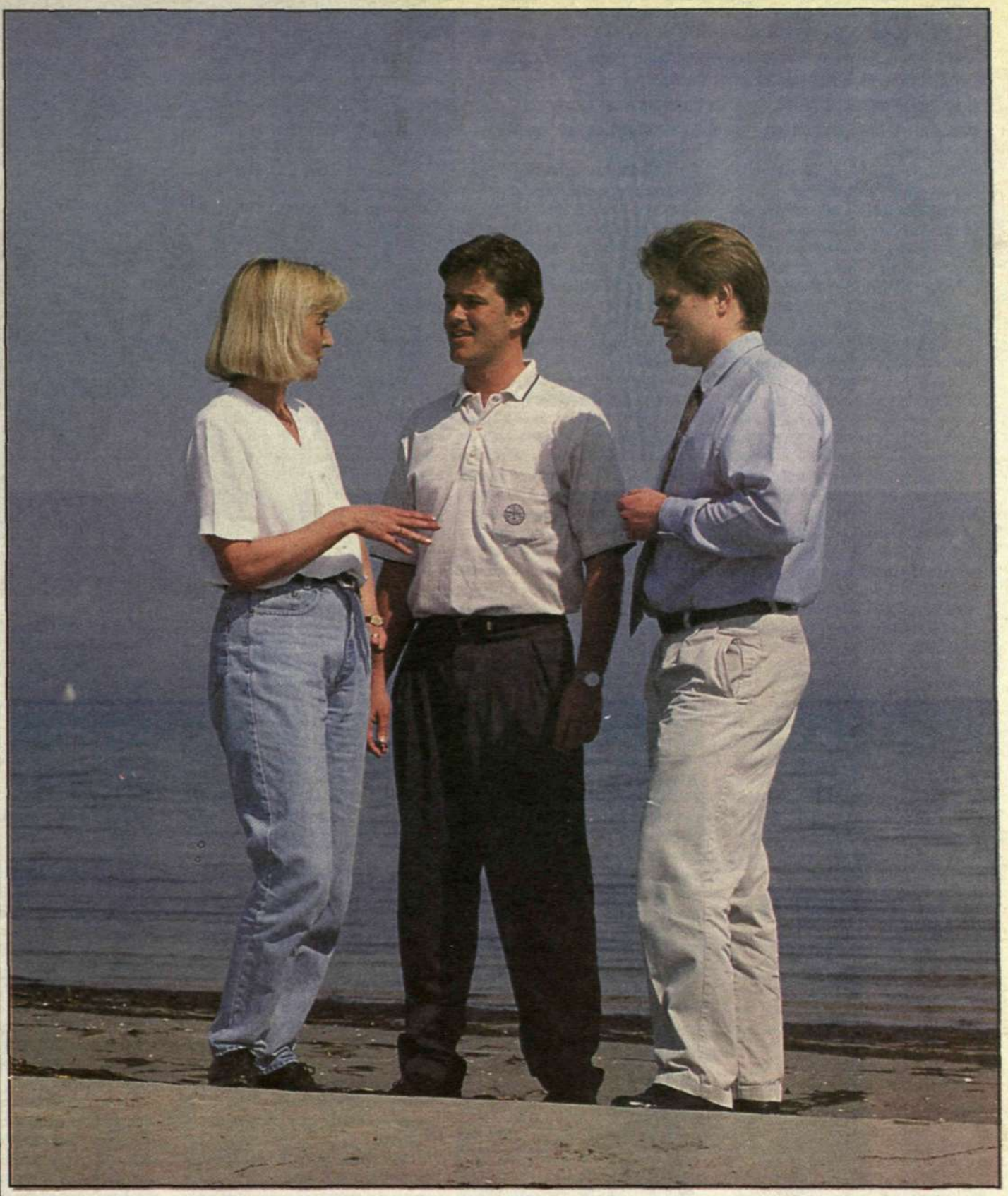
Ellemtel in Älvsjö has tackled the problem of radiation allergy seriously. It has set aside workplaces totally screened from electro magnetic rays.

Page 7

26 000 in Irak appeal

The appeal within Ericsson on behalf of our captive colleagues in Irak triggered a remarkable response. More than 26,000 Ericsson employees put their names to the list calling for the release of Christer Strömgren, Stefan Wihlborg and Leif Westberg.

Page 10



Now we need many new, young managers

Right now Ericsson has a tremendous need for new managers. So the opportunities now are plenty for mapping a future career. A special section appears on management training and available manager positions.

Pages 15-19

Hefty earnings gain for Ericsson. Pages 2-3

Lars Ramqvist at the general meeting:

It looks good for Ericsson

At Ericsson's general shareholders meeting Lars Ramqvist, C-W Ros and Jan Stenberg gave a comprehensive review of Ericsson's situation just now. We reprint here the major excerpts form the chief executive's assessment. It is marked by a strong faith in the future and a strong conviction that Ericsson has chosen the right strategy for product development and marketing efforts.

"It is very satisfying for me to be able to convey that Ericsson for the seventh quarter in a row has heavily increased order bookings. The increase for 1992 was 19 percent, to more than 53 billion kronor. The first quarter of 1993 the increase was a full 34 percent, with order bookings of close to 17.5 billion kronor.

It is especially pleasing to confirm that our most expansive business area, Radio Communications, shows an even heftier increase. During the first quarter the business area had order bookings of almost seven billion, an increase of 56 percent.

Behind this development lies huge successes with the mobile telephone system. During the first quarter order bookings increased a full 88 percent. With the huge order from Mannesmann Mobilfunk in April and additional business Ericsson has sold mobile telephone systems for more than five billion kronor from April 1 to this date (May 11).

Invoicing increase

The heavily increased order bookings are also beginning to impact invoicing. During the first quarter of 1993 invoicing rose by 36 percent, to close to 13 billion kronor. Also if you take into consideration the devaluation of the Swedish krona, this is

"The increased order bookings is no mere chance."

a genuine and remarkable increase in our business. And considering the price pressure on our products this invoicing represents a major increase in deliveries from our factories.

The heaviest increase in invoicing was noted in the Radio Communications business area, which lifted its sales a full 74 percent in the first quarter.

This means that the business area is now as large as Public Telecommunications as far as sales are concerned – which was in the nature of five billion kronor for each business area.

Long-term strategy

The increased order bookings and invoicing for Ericsson is no mere chance. It is the result of a persistent long-term strategy that is based on powerful technology investment, aggressive marketing and rigid control of costs. All based on a goal-conscious quality effort through TQM, Total Quality Management.

We know that order bookings for 1992 to a great extent were linked to new products, which were not around 1-2 years ago. Had we not driven a sensible research and development policy, Ericsson would have been wiped out by the tough international competition within two to three years.

Expansive market

How does the market look then for the rest of the '90s?

Sweden tops the list in number of subscriber lines per hundred inhabitants, with close to 70 phone-subscriptions. The world average is about ten, and vast countries like China have a telephone density of only slightly more than one per hundred inhabitants. There is also a considerably large need for ordinary telephony and with that also a huge potential for Ericsson.

Sweden also tops the list in mobile telephony, with close to eight subscribers per hundred inhabitants. Industrialized countries like Japan, Germany and France are far behind.

Telemarkets will continue to expand during the rest of the '90s. The annual growth is now 50 million subscribers and will reach 90 million by the end of the century. In Sweden and many other countries growth is already biggest for cordless subscribers. In the entire world this is going to take off between now and the turn of the century.

Customers determine

If we look a little closer at market trends, we see that it is the tele operators' customers that determine developments today, that is to say users of telecommunications systems. One can clearly see a number of dominant trends:

- Increased mobility.
- Increased flexibility in the network
- More services in addition to regular telephony – ISDN and intelligent networks
- Powerful development of transport and access networks.
- Immense interest in broadband technology.

In general the market is characterized by ever greater price pressure. This is the result of global overcapacity in the tele industry, combined with the current recession. We in Ericsson are totally commited to meeting heavily increased competition during the rest of the '90s.

Ericsson is what we call a systems house.Our system platforms, among others AXE, ETNA and TMOS, support the applications and services that the market demands. With our pronounced strength and competence in switching technology, radio and network, Ericsson can supply all the important applications and services that the market calls for.

Strong product portfolio

Our entire product portfolio is built up of base technology in microelectronics, radio and software. Ericsson puts all its energy into tele systems and hence we collaborate with many competent partners – Texas Instruments and Hewlett-Packard, to give two important examples.

Ericsson has never had such a strong product portfolio. But this was not arrived at cheaply. As you know we have invested immensely in product development.

Biggest investment

During 1992 we continued our tireless investing in technology development. Some 14,000 engineers in 40 centers in 20 countries work with systems development at an annual cost of 10.3 billion kronor.

Add to this 3.8 billion in further investments. Altogether we invested

"It's customers who determine a pressed market."

more than 14 billion kronor in 1992 to develop Ericsson.

This is the largest ongoing investment in any Swedish company. Total technology costs correspond to 22 percent of turnover. Pure R&D costs correspond to 16 percent of Ericsson's invoicing.

Our aim is obviously to increase business volume and thereby bring down development costs in relative terms. In absolute terms, however, in 1993 we will spend more than 10 billion kronor on development.

Fewer factories

Developments in microelectronics mean that we need far fewer factories, although we are manufacturing ever more advanced factories. Work content in a mobile telephone in our Kumla factory, for example, fell from three hours in 1988 to just about twelve minutes. To manufacture a voice channel for radio base stations we needed 18 hours at our Gävle factory in 1990. Today the voice channel is manufactured in three hours. And we are on the way to halving that.

Production lead time is also of major importance when it comes to increasing productivity. For AXE manufacture in Sweden lead time has fallen from six months in 1990 to 14 weeks today. Plans are to come down to ten days in 1995.

Altogether this means that we can halve the number of factories to some 30 by 1995. But naturally manufacture more than ever.

Competence

When I refer to new advanced technology and new production structures it is understood that in its place I am also including competence development for our personnel. This is very important.

Increasing international competition and the need for constant product renewal means that all employees must accept constant training during their entire career. Each individual must accept the challenge of learning something new and the company must see to it that the necessary resources for training are available.

Strong market position

During 1992 AXE strengthened its world leading position. In January 1993, there were 66 million AXE lines delivered or on order in 101 countries. This makes AXE the most widely sold tele system internationally, with a world market share of 16 percent.

The latest order bookings indicate that AXE is now on the way to achieving 17-20 percent of market share.

Even if AXE was our main product in Public Telecommunications for several years, there is now very comprehensive development aspects of the system for new services and broadband applications.

AXE is, as you know, also the system platform for our mobile telepho-

"We have 60-70 percent of the world market."

ne systems. Here we are clearly the world leader. Ericsson has 40 percent of the world market for mobile telephone systems and we have had that for the past ten years. We have held our own against competitors in all markets:

- Europe 58%
- Asia 41%
- North America 29%
- Latin America 40 percent

For the new digital mobile telephone system the picture is even brighter. So far Ericsson is believed to have taken 60-70 percent of the world market. This is a result of being the only company to have developed and taken orders for the system in all digital standards.

CDMA patents

These standards are all built on so-called TDMA technology. Ericsson has also driven development of the digital CDMA technology. Here Ericsson has been granted an interim patent for the proposed American standard but voice quality for CDMA, however, is still considerable inferior to that of TDMA. Hence we have concluded that it would take a few more years before CDMA can be a commercially viable standard.

In addition to our mobile systems, in 1992 we also developed digital mobile phones. We were the first with an approved GSM phone and that year we also launched the world's smallest and most effective pocket phone for both GSM and the American standard ADC.

Success was already on the way. Order bookings have increased tremendously for our phones.

New business area

When we talk about our market position I want to point out that at the beginning of the year we did some restructuring and came up with a new business area, Business Networks.

The business idea here is to supply complete telecom solutions to network operators as well as to the many operators who enter the market in competition with the usual tele administrations. These new operators need to collaborate with a competent supplier like Ericsson, in everything from analysis to planning, network construction and operations support.

We expect a lot from this new business area in the future.

Riscs

Today there is a lot that appears positive for Ericsson. Naturally, my hope is that Ericsson will continue to thrive in the tough international competition. Are there then no problems, no risks? Yes, definitely.

Our competitors will constantly force us to improve price and performance for our products. There will be tougher competition all around. Here it is a matter of investing powerfully and correctly.

In addition a few words of warning are in order. It is when everyt-

"Our order volume is altogether 45 billion."

hing seems alright that one must be most observant.

The risks I see for Ericsson are, among others, Swedish politics. Sweden is in a very difficult situation with a runaway budget deficit, high interest rates and high unemployment. Despite the significant political risks for us in the Swedish export industry, I want, just as I did at last year's meeting, to still convey a positive tone.

New employees

Following the agreement between industry and the trade union organizations Ericsson is now taking on personnel again in Sweden. The need is for some 1,000 recruits, of whom 700 are engineers. A further 300 engineers will be offered project jobs.Nothing pleases me more than when Ericsson can hire new young employees.

Financing is another risk factor. Access to capital is tight in the industrialized world. Not least in Sweden, where the state has loaned out just about all the money there is.

We ourselves in the Ericsson organization are a risk. The heavily increased order bookings and deliveries from the factories can trigger quality and supply problems.

So there are risks. But I can assure you that Ericsson's competent and committed personnel will do everything to safeguard our business opportunities. We do so based on our common values:professionalism, respect and perseverance.

Significant boost

We have now presented a quarterly report that is almost 800 kronor better than the corresponding quarter last year. We know that the results are not yet influenced in any noteworthy degree by the devaluation of the Swedish krona. The positive effects will first come up during the second half of 1993.

We also know that the order volume after the first quarter is the largest ever – 45 billion. Added to that we have had very good order bookings during April and right up to today's date.

Therefore I would like to conclude my speech to you, shareholders, with the following outlook for 1993.

As a result of the undimisnished powerful investments for the future, asignificant boost in results is expected during 1993."

Report: Lars-Göran Hedin
Photo: Lars Åström

After the shareholders meeting Lars Ramqvist had every reason to give the "V" for victory sign. Ericsson got the highest ratings from the attending shareholders.

Heavy boost in interim report

Ericsson's interim report is pleasant reading. With an improvement of a full 800 million kronor compared with the first quarter of 1993, the report reflected a significant boost in profits. At the same time order bookings continued to increase heavily.

"Ericsson's order bookings for the first three months of 1993 increased 34 percent to SEK 17,469 m. (SEK 13,057 m. in the corresponding period in 1992). Consolidated net sales rose 36 percent to SEK 12,867 m. (9,462). Approximately half of the increase was attributable to exchange rate changes resulting from the decision to allow the Swedish krona to float. Income after financial income and expenses, but before minority interest, improved by SEK 764 m. to SEK 524 m. (-240). Consolidated pre-tax income for the period increased to SEK 428 m. (-363), including SEK -1 m. (35) in net capital gains. Income was affected marginally by exchange rate changes. Income per share after actual taxes and full conversion was SEK 1.25 (-2.44). After actual taxes and estimated deferred taxes on appropriations, and after full conversion, income per share was SEK 0.86 (-1.08).

Business areas

As of January 1, 1993, Ericsson's operations are organized in five business areas compared with the previous six.

The cable operations within Cable and Network are now part of the Component Business Area and the network operations were transferred to Business Networks. Figures for the preceding year have been adjusted to reflect this organizational change to facilitate comparison of the units.

Public Telecommunications reported higher net sales, despite the transfer of telecommunications exchanges for mobile telephone systems to Radio Communications and the divestment of the former operator activity in Argentina. Large increases were noted in deliveries to China, Malaysia and Greece.

Radio Communications reported a sharp increase in order bookings, and for the first time reported more order bookings than Public Telecommunications. Net sales also rose sharply, mainly for mobile telephone systems and mobile telephones.

Business Networks reports a significant increase in net sales, due mainly to the consolidation of Austrian Schrack. This also resulted in higher order bookings.

Despite the divestment of the Brazilian cable company, **Components** reports higher net sales. This is mainly attributable to major deliveries in the microelectronics and standard components segments as well as power equipment, mainly for the Far East, including China.

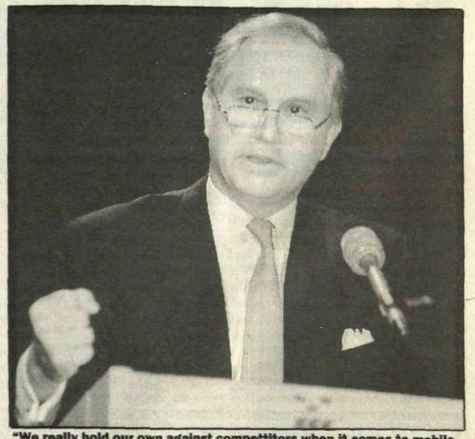
Higher sales in the **Defence Systems** are due to advance deliveries and very heavy demand for microwave links. Orders for the PS890 airborne tracking radar system strongly affected order bookings in the first quarter.

Financing

Cash flow was negative, due primarily to the continued weakening of the Swedish krona. The equity ratio rose somewhat compared with the first of the year, to 35.1 percent (34.3). Shareholders' equity was strengthened through conversion to shares of the convertible debenture loan issued in 1987 to the employees.

Capital Expenditure

Ericsson's investments in property, plant and equipment amounted to SEK 708 m. (559), of which expenditures in Sweden totaled SEK 357 m. (275).



"We really hold our own against competitors when it comes to mobile telephone systems," Lars Ramqvist emphasized at the meeting.

Meeting hit a high C

The 1993 shareholders meeting hit a high C. More than a thousand shareholders present were thrilled at the news about the good results for the first quarter of 1993.

The company's executive committee, with Lars Ramqvist at its head, gave a detailed review of the situation in Ericsson.

It added to the positive tone that marked the earnings report.

A representative from the shareholders' organization acted as spokesman for the many smaller shareholders in Ericsson when he praised the executive committee and employees for the excellent job they had done of securing Ericsson for the future.

Claes Dahlbäck was elected deputy to Ericsson's board. He replaces Per Lundberg, who had resigned earlier.

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Opportunity's man

Karl Alsmar new head of Network Engineering

"I am such that I see opportunities all the time," says Karl Alsmar, new head of Network Engineering, Z division, in Ericsson Business Networks, EBC, since March 1 and as such head of BZ's business unit Network Engineering.

On the question of whether he is a businessman or a technician, Karl Alsmar says:

"I have gone from technical via marketing to the possibilities I see for doing business. I think it is incredibly exciting to work for an organization."

Karl Alsmar has worked a lot with job changes. In the States it was a case of building up and establishing something new. When he later returned home he was assigned to take over the Product Management division in ETX.

"There I had to work with change and to get the organization to think and act in a new manner, since circumstances had changed a great deal."

Karl Alsmar has wide experience in Ericsson, both in the Swedish and international aspects.

"I have visited and have had contact with almost all of the big Ericsson companies, Besides I know, through among other things my corporate assignment – product management – Ericsson's total product portfolio."

In Saudi Arabia Karl Alsmar was manager of a staff of some 1,000. As head of the business unit Network Engineering he oversees some 2.000 persons. The top job until now.

Total picture

"I stand for a viewpoint that is totally opposed to separateness. I see Ericsson as a totality. We should not build walls around a special activity. With this viewpoint I believe I can gain especially more in my new job, where it is a matter of drawing on the group's collective resources.."

Then you are a genuine spokesman for Ericsson as an industrial unit?

"Absolutely. And that is a conviction. It is in this way that we can achieve our total strength. If we react just as a group of small units and do not appreciate the synergy effect and the other strengths we have by combining several products in a solution, then we will become more vulnerable for competition in our particular field."

"We build our competitiveness in Ericsson by combining resources from the group's various units. Each part in itself may not always be better than the competitor's but when we look at the totality and the combination of products and competence we are interesting and strong as supplier to important customers, for example the new tele operators."

Total responsibility

"These customers start with money and a business idea. They need a lot of help from suppliers with sytems integration. Here we can and must support them. This means that for each and every business unit there may be little to be gained. Driving force may not be sufficiently great. However, the business in its entirety can be. Network Engineering comes into the picture and takes total responsibility".

"We can have a very powerful attraction when we gather up services and products from Ericsson as a totality," he underscores. Here Network Engineering functions as a pilot.

"Here it is important for confidence's sake that one does not have some `own' products in such an oepration. Or else other business units would feel that one is favoring one's own products. Business operations and business ideas must go forward to achieve the best possible combination with products from Ericsson's entire product portfolio," says Karl.

"We are not used to having particular service oriented business units in the group. It is a challenge to do business without one's own products.

New operators in focus

Network Engineering will focus on new operators that establish themselves on the market and compete with the traditional operators.

"It is important to build up a unit that works specifically with these new operators."

Until now Ericsson has not focused on these customers as customers, but instead has only tried to sell them what we have.

As an example of a typical market with new operators, Karl points to England, where far-reaching deregulation has already occurred.

"I think we can learn a great deal from that. Today there are about 160 operators in one form or another there. Naturally, they are not all so large that it is worth pursuing them. But at least some 20 are of direct interest for Ericsson. We have a lot to learn from this market. A lot of that is going to be repeated on other markets. Deregulation is happening fast in Australia. In the long run Germany and eventually even France could be markets for new operators. Deregulation is also happening fast in Sweden and Finland. An example of a new Swedish operator is Tele 2.

"For this type of operator we have a sufficiently broad portfolio and a lot of network know-how. Moreover we have significant competence in project carry through," says Karl.

"This means that to a large extent we can satisfy these customers' needs with Ericsson's own products and services. The main part is in-house, which is a strength. But naturally we must here and there complement it with products from other suppliers. We must be as product neutral as possible."

Ericsson's challenge

To the question of which area is the most important to develop, Karl replies:

"The most important thing is that we consider first the new operators' situation. It is not for us to talk about which products they want to have but rather what business strategies and business ideas they have. They express themselves in business terms. We must be able to interpret the customers' needs in the form of communications solutions."

"It is quite easy to spread competence about our own products. This is part of my corporate management role. But for colleagues working directly with customers it is a different matter. How can we help them to build up competence among the customers so as to meet the customers' needs for telecommunications solutions. I believe the answer to that question is a challenge for all of Ericsson."

"I think that competence lies in far too few hands and it must filter down to the customers. We must develop basic solutions that are "global" and that can later be customer applied to each individual customer."

"I think that competence lies in far too few hands and that it must be filtered down

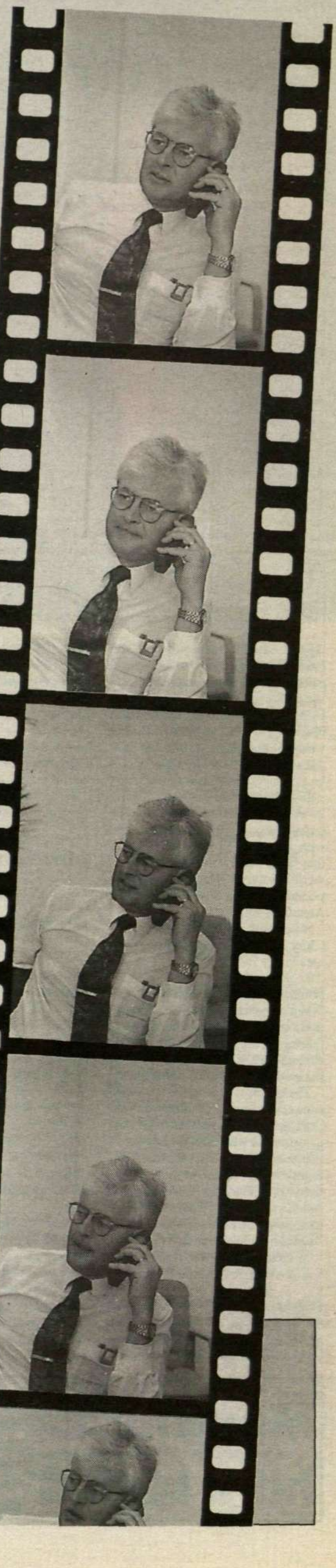
How then can we make this a reality in Network Engineering?

"This has been a little othet activity. In order for it to focus on the new operators it must be thoroughly integrated with other Ericsson activities. For example, it is vitally important to develop relations with the MLC (Major Local Companies) and large local companies in the Ericsson organization."

"We must be an important support for their operations," Karl emphasizes. "We must not circumvent them but rather work through them. I hope we can do that by showing that we are competent and we can bring in more businesss for the companies out there. It is they and not we who have direct responsibility to the customer."

If we act like small units and-do not see the advantages of collaboration we will be much more

Text and photo: Thord Andersson



About Karl Alsmar

Born:	March 4, 1949, in Stockholm.
Family:	Married to Arja, with a son Victor, 5.
Home:	Lives in a villa in Huddinge, just outside Stockholm.
Education:	Graduated as tele engineer from the Royal Institute of Technology in Stockholm in 1972.
Career:	Joined the Systems Department at the then X division.
1976-1980:	Group manager for a number of different areas, among them transmission, digital selectors, mobile phone switches and manager computer operations in the Philips & Ericsson Joint Venture in Saudi Arabia.
1983-1984:	Head of Product division and president for Philips & Ericsson Joint Venture.
1984-1988:	Head of "System Engineering" and Product Management at Ericsson Network Systems in Richardson, U.S.A.
1988-1992:	Head of the newly formed X Division, Product Management, in Ericsson Telecom.

Record order from Germany

Ericsson received its largest private order ever for mobile telephony equipment. Mannesmann Mobilfunk in Germany wrote a contract for supplies worth 3.5 billion kronor. The deliveries cover infrastructure, services and mobile phones for Mannesmann's GSM network, D2".

The D2 network is the largest GSM network in operation today. At CeBIT in March, Mannesmann announced that the number of subscribers in D2 had exceeded 200,000, just nine months after the network was put into commercial operation.

At the end of this year 80 percent of Germany's surface and 90 percent of its population will be covered by the D2 network.

In the announcement that Mannesmann itself made concerning the new contract, it indicated that the total investment in the D2 network up to the year 2000 would reach four billion D-mark, more than 18 billion Swedish kronor.

An honor

"It is an honor for Ericsson to get this large order from Mannesmann Mobilfunk, the leading operator for GSM," chief executive Lars Ramqvist says.

"It is the largest private order in the mobile telephony area signed so far and it further reinforces our world leading position.

"The deal involves export of radio base stations from Gävle, telephones from Kumla and AXE switches from several different places in Sweden," Lars Ramqvist said in an interview.

In Ericsson's Kumla plant they are manufacturing mobile phones at a hectic pace. The German order means a boost for the order books.

Venezuela buys AXE

Ericsson has strengthened its position in Venezuela. During the first quarter this year it signed an order for several projects, together worth 165 million kronor.

CANTV, Compania Anonima Nacional Teléfonos de Venezuela is now expanding the public network in Venezuela. CANTV, which was privatized in December 1991, is led by the American operator GTE. The supplies will be delivered during 1993.

Several applications of the AXE system will be delivered: local, transit and international switches as well as Intelligent Networks with Freephone services.

Venezuela is an important market for Ericsson. More than 800,000 AXE lines have been installed or are on order. The new project further strengthens Ericsson's position as a leading supplier of public telecommunications systems in Latin America.

Double choice in Greece

Yet another country has chosen Ericsson as supplier of the GSM system. This time it's Greece, where two operators opted for digital mobile telephony. Both chose Ericsson.

Ericsson Fatme and Italtel received the order from Stet-Hellas, one of the two mobile phone operators in Greece. Stet-Hellas is owned by the Italian Stet International. The order covers supply of a GSM network that will be installed in two years.

The contract with Stet-Hellas is worth 500 million kronor. It involves delivery of a finished network. In the first phase the network will cover densely populated areas but with time it could serve larger parts of Greece.

Ericsson has also signed a contract with Panafon, a consortium made up of Vodaphone, France Telecom, the local manufacturer Intracom and Databank S.A. in Greece. Panafon is the other GSM operator in Greece, which earlier had no mobile telephony. The network that Panafon will now build up will cover Athens.

Thailand AXE order

Ericsson Communications Ltd. in Thailand has signed a contract with Thai Telephone and Telecommunications (TT&T) for supply and installation of an AXE network. The total order value is 950 million kronor.

In July 1992 TT&T shared in a concession over 25 years for operation of a million telephone lines in Thailand, with the exception of Bangkok. These lines will be installed in 1993-97. According to the agreement between TT&T and the state tele administration the company must choose at least two suppliers.

Ericsson has been chosen as the first supplier. The company has been one of the state Thai tele administration's two traditional suppliers and has installed 600,000 of the 2.2 million lines that are in operation in the country today.

Apart from switches and network construction to fixed networks in Thailand Ericsson also markets mobile telephony systems, mobile phones, business switches and defense systems in the country.

Ericsson's Thailand network company has built networks in Bangkok and several provinces.

Anders Igel, right, thinks Ericsson's technology investments are right for the new BT order.

Breakthrough in Britain for Ericsson's transport network

Ericsson's investmemts in transport network products have once again borne fruit. In tough international competition the company won a contract from BT in Britain for the new generation transport network.

The order from BT is the definitive breakthrough for ETNA, Ericsson Transport Network Architecture.

"With this deal we have demonstrated that Ericsson is in the absolute top class among suppliers of transport networks," says Magnus Warbert, head of the business unit Transport Networks at ETX.

The contract covers supply of the new generation transport network equipment – so-called Synchronous Digital Hierarchy, SDH.

With the new technology, BT – previously British Telecom – can also offer services with increased operational security, better profitability and reduced standstill time. The SDH network repairs itself automatically in the event of a problem.

The SDH network in a simple way can be remotely controlled and monitored through computer programs. Current transmission systems on the other hand require reconfiguring, maintenance and fault location on the spot.

Confirmation

"Ericsson's investments in research and development in recent years have made it possible for us to develop very advanced systems. The latest order from BT is a confirmation of our competitive strength as a complete tele systems supplier," says Anders Igel, president of Ericsson Limited in Britain.

The order for the first SDH network covers digital cross-connect equipment, multiplexers, radio links and operation support systems. BT also has an option to increase the order to include volume supplies over a two-year period from 1995. The SDH network will be put into operation at the beginning of 1994.

SDH equipment and the current system for BT belongs to the Ericsson ETNA family. The operations support system FMAS (Facility Management Application System) will be responsible for supervision of the new SDH network, together with BT's own supervision system.

Ericsson is currently participating in four large SDH projects in Europe. Besides the order from BT the company is also installing SDH at Deutsche Bundespost Telekom in Germany, Swedish Televerket and the regional tele operators in Denmark.

GSM for Turkey

Ericsson Telekomunikasyon A.S. in Turkey has signed a contract with the Turkish tele administration for a nationwide mobile telephony network of the GSM standard. The order is worth 500 million kronor.

The Turkish GSM network will cover the entire country, but the first stages will be built in Istanbul, Ankara, Izmir and Antalaya. The network is being financed and driven by the Turkish tele administration together with Turkcell, a consortium consisting of Ericsson Telekomunikasyon, Finnish Telecom International and some local Turkish companies.

With this order Turkey becomes the 14th country to choose Ericsson as a GSM supplier.

Ericsson gets a new microworld in Kista

Ericsson's basic technology activities in the Core Unit Basic Technology in Business Area Public Telecommunications, BX, is being restructured. Certain activities are being spread to various units in the BX organization. Opto and microelectronics are moving to a new corporate-wide core unit Micro Electronic Systems Technology, MEST, in Kista.

The new unit MEST will gather all microelectronic competence under one roof. Heading the new unit is Christer Jungsand, former head of Basic Technology. The new corporate unit in Kista will be operative from September 1 this year.

Contact interviewed some of the customers, interested parties and co-workers about what they thought of the investment itself.

• What do the initiative takers, customers and interested parties say? Why are we making this investment and is it good?

Lars Ramqvist, chief executive:

"Microelectronics plays a key role in our strategic investments since systems solutions to an ever higher extent is being designed in and integrated into microelectronics. Since we gather our competence under on roof, we have greater symergy effect that will strengthen us in the future.

"This is nothing new. Plans for this restructuring have been in place for some time now and are in line with other changes in the company.

"The aim of setting up companywide core units is to achieve better cohesion, coordination and focusing of our resources so that we have maximum effectiveness and clout. We live in a dynamic world, which makes it necessary to continuously keep an eye on our organization. Altogether, this means that we will also in the future see organizational changes and likely the presence of several companywide core units."

"Investments propel Ericsson to the frontline"

"My vision of restructuring of Basic Technology is to pursue R&D investments and build a competence center for microelectronics, which will propel Ericsson into the frontline in this area as well. With this we will have the possibilities to use in our designs the most advanced technology as good as or even better than our strongest competitors."

Bo Hedfors, head of corporate function Technology

"Infrastructure in Kista, with its proximity to Electrum, the university and institutes, collaboration partners etc. will provide extraordinary synergy effect. We gather competence in microelectronics, which in this way offer conditions for effective collaboration. This way we utilize knowledge in an optimal way.

"We must be best in order to integrate internal and external technology in our systems, which is a requirement for our future existence.

Hectic moving days awaited employees at Basic Technology during the spring and the approaching summer. On September 1 we will all move to our new workplaces. From left, Per Andersson, Jolanta Norén, Pia Olofsson, Kåre Gustafsson and Hans Ivarsson.

We must also ensure our future support in the area of microelectronics. That's why we are gathering our forces in a companywide core unit, MEST, which will be a center for applied micro and opto electronics, a research and development center.

"Collaboration with the university and technical institutes will be reinforced, which we will do through our systems silicon investments in Stockholm and high-speed electronics in Gothenburg and opto research collaboration both in Stockholm and Gothenburg.

Rolf Nordström, head of business unit local switching systems:

"Microelectronics is accelerating at a rapid rate. It is important for Ericsson to keep up, so that we can match and even surpass our competitors. That's why it is strategically significant that we gather our forces around microelectronics.

"It is developing and beneficial to assemble similar people who work in similar knowledge areas, but who have worked in different patterns and have different experiences and competence. We can all learn from each other's experiences.

Magnus Warbert, head of business unit transport network, TNS:

"The co-workers who come to us and who previously worked with TNS' s base technology are very welcome. Collaboration has worked extraordinarily well before, so why shouldn't it do so now.

"The production related base technology is moving to the core unit Supply and Distribution, S&D. It is totally in line with S&D's new thinking on flow orientation, product at the center, total responsibility on line.

"Microelectronics is the key to the future."

"For microelectronics, that is moving to Kista and EKA, the restructuring means both a threat and opportunity. A threat - because moving for our part means that we cannot avail of the same freedom of directing our components. Opportunity - for it is developing both for coworkers and the company to gather up all its competence in a high-technology center.

Örjan Mattsson, president, Ellemtel

"With thoughts of microelectronics significance when it comes to competitive strength and qualities in our products, Ericsson's investment in this area is good and very important.

"MEST at Ericsson Components will be a natural central point. The distance to Kista from Stockholm southwest is considerably less than if we were entirely dependent on our overseas microelectronics partners.

"At Ellemtel, just as surely as in other machinery design units, we will, as we do today, have a certain limited competence in design of integrated circuits, in close collaboration with a core unit for microelectronics.

Jan Uddenfeldt, technical director at business unit radio communications, BR:

"For BR, microelectronics is all the more significant. Development is moving toward new "systems for chip", for example a chip mobile telephone.

"To achieve this we ourselves in BR have created high-productive design tools. That ETX now reinforces EKA's basic technology competence means that close systems competence will come to EKA.

"In BR we have gathered microelectronics competence in a core unit Radio Systems and Technology with location at ERA in Kista. Proximity to the new core unit MEST, I hope, will mean synergy benefits for the future.

• How do the employees take the change?

Hans Ivarsson, works with technology management at Basic Technology:

"It feels right that we are gathering our forces around microelectronics. MEST will have corporate responsibility, which makes higher demand on us to have well-functioning technology management. We must set clear goals, develop business plans with a winning strategy and see to it that we have a good earnings follow-up.

"If technolgy management is concentrated entirely in Kista I feel that geographically we are too far away from our customers, who today in great part are localized in the HF, main plant, area.

"There is then a great risk that Time To Market, TTM, will be longer. We must find a way to resolve that.

Per Andersson, works as laser expert at Fiber Optics Research Center, FORC:

"We are a little surprised that we have to come to MEST. Now we are coming closer to the components department but we will be working mostly with ETX and TNS, where we must have closer contact and we are coming further away from them.

"So, for our part, we can say that we do not know as yet how this will affect us.

"Communications problems are there. THIS problem is one that should really be given some thought and that should be solved.

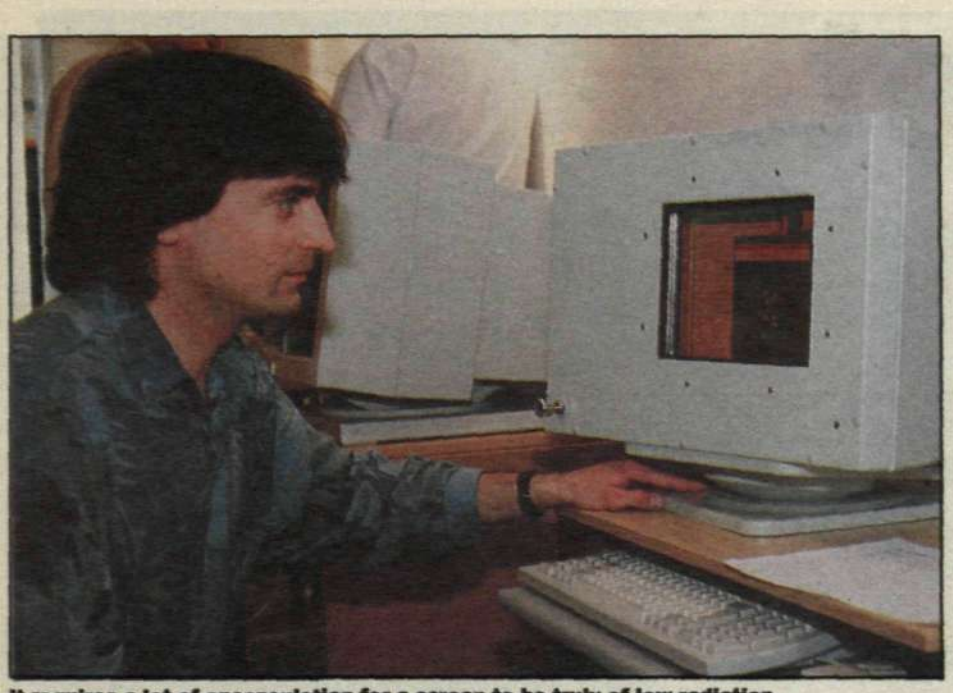
Pia Olofsson, works with market coordination:

For our part, I think it feels a bit rushed and not thought through from management's side. You get the feeling that what mattered most was the shifting of microelectronics to EKAin Kista, which in itself is fine. But then the rest some to have been done with the left hand.

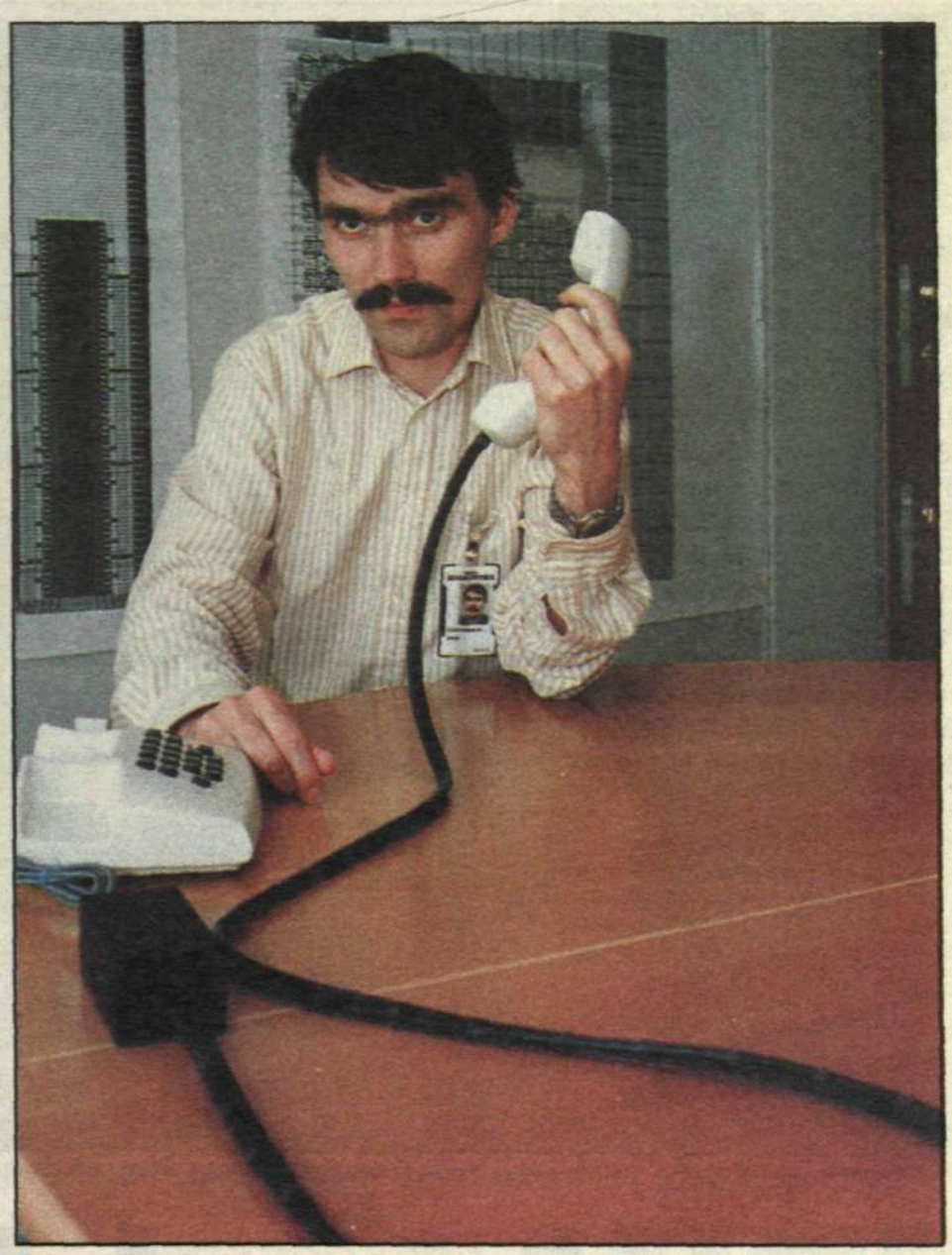
"For us who are going to S&D it feels as if they had not done a proper analysis of the activities. Now management has said that they are in the process of doing so, so it is just as well to wait and see, I think.

"For me personally, I am neverthesless not worried. I am relatively new and young and to me restructuring has always meant a chance for development.

Text: Josephine Edwall
Photo: Kurt Johansson



It requires a lot of encapsulation for a screen to be truly of low radiation.



Per Segerbäck got his phone sanitized against radiation. He is one of the employees who can now continue to work with Ellemtel, despite radiation allergy.

On the move against radiation allergy

It is worth investing in a good job environment. At least Ellemtel thinks so. It will be soon presenting its conclusive report on the project "Hypersensitivity in the work environment."

Three years ago some 20 employees were afflicted with symptoms of "hypersensitivity." Today, they are all back at their jobs.

On July 1 the conclusive report for the project "Hypersensitivity in the work environment" will be presented. It was carried out and financed by Ellemtel and Arbetslivfonden, the Swedish work fund.

The report, suggests investments for improving the job milieu should be treated as investments, that is to say something from which the company can expect financial returns. Work environment tasks therefore should have the same strategic significance as other revenue-producing activities in the company and should be guided by top management.

Increase productivity

Clairy Wiholm, job milieu coordinator in Ellemtel, has together with Carl Axling and Mats Frånberg, a consultant, formed the project's management group. She says:

"The job milieu can be a tool for management to increase productivity, effectiveness and quality in its operations. Today top management in many companies attach strategic significance to the work environment. But a well-formulated job policy on paper is not enough. top management must also have an organization and resources so that activities can be driven effectively. The model we developed in the project shows how such an organization would appear.

Thirty affected

There are special reasons that just Ellemtel, equally owned by Erisson and Televerket, are so heavily engaged in the question of job milieu. The background to this is interesting.

Three years ago the company got a clear indication that there was something that just was not right in its own work environment. Some thirty employees were afflicted in the course of a few months by different types of problems, among others piercing and stinging reddening of the skin, above all in the face. Some were afflicted by dizziness and feeling unwell and above all could not remain in their workplace. Among others affected were designers, who were deeply engaged in one of the company's important technical development projects.

Strategic significance

"This presented such a serious risk that the project would be extremely delayed if these people could not return to work," recounts Carl Axling. "We are a development company. Keeping to project timetables is a matter of survival for the company."

With unneeded clarity management and employees got a precise indication of the job milieu's major strategic significance for a company's possibilities to drive its activities effectively.

A major problem in this context was that no one with any certainty could explain how the problem arose. The affected ones themselves felt that the symptoms had to do with working on the screens. But researchers outside in the public could not – and still cannot –believe that electric and magnetic fields can give rise to this kind of problem.

Many theories

Among researchers there are many theories on why people react with hypersensitivity on the job. Electric and magnetic fields was one. Other possible factors underlined were a halt to cleaning and emissions in the internal air, insufficient lighting, unconscious impact of infra and ultra sound and heavy metals in the body (for example amalgam fillings in teeth).

One category of experts felt with certainty that the symptom eventually was not physical but was a psychosomatic reaction and that the reasons for the hypersensitivity could lay in psychosocial factors, for example job organization composition, unhappiness in the job and stress.

Some of those who worked with the radiation allergy project. From left, Mats Frånberg, Clairy Wiholm, Torbjörn Jonsson and Carl Axling.

Top management set up a project group, which was assigned the mission of testing various measures so that the affected employees could return to work again.

Total overview

A total overview of the job milieu was undertaken with the help of their own experts and outside researchers. Air cleansers and light and sound elements were measured and analyzed. Certain parts of the premises were screened for electromagnetic effects with metal scanners. Computer terminals were turned inside out and new low-radiation screens were put in. In addition a thorough assessment of the psychosocial work attitude was undertaken in the company.

These led to changes in the individual job situation and general improvements in work organization. An organization was formed that quickly and effectively could take care of every new case of hypersensitivity.

"It was quickly shown that the quicker we could act and start rehabilitation the greater the chance we had to prevent the symptom from deteriorating and for limiting a work-stop order for the person affected," says Clairy Wiholm.

Millions invested

The company's top management had in an initial phase commited two million kronor to the project. This amount was increased later with an additional three million. The investment provided the desired result. One year later all the "hypersensitive" employees were back at work again. They were not totally recovered but many of them could return to the same job assignments they had before.

"One of our goals has been to acquire a healthy work environment, both physically and psychosocially, where the individual is given the greatest possible freedom to decide over his own job situation. At least we have come a bit on the way toward that goal. In the project "Hypersensitivity in the work environment" we have tried to generalize our experiences so that employees in other companies can benefit from them," says Clairy Wiholm.

Text: Johan Lundberg
Photos: PeA Björklund

Bengt Franzén, present TRIM secretary, has a special assignment to inspire Ericsson co-workers to forward on good suggestions for improvements. Photo: Karl-Evert Eklund

TRIMmed thoughts cut into costs

"We would like to receive many more TRIM suggestions," says Bengt Franzén, new secretary in the TRIM committee.

Apart from their main tasks, all members of the committee also have a special assignment. In Bengt's case it is generating suggestions.

Bengt Franzén comes from Ericsson Business Networks AB, which is part of Business Area BZ. Among other things he was previously chief economist with the former Ericsson Network Engineering AB (ENS). He came to TRIM after having been logistics manager for some time in a network construction project in East Germany. Now Bengt Franzén concentrates on increasing the frequency of good suggestions for improvement from Ericsson colleagues.

When the TRIM campaign started at the beginning of 1992, it challenged all employees to join in with suggestions for helping to streamline our common Ericsson resources. This has gone well and many good suggestions have been collected in this way and later dealt with as they applied to particular instances.

Three suggestions a week

The flow just now provides TRIM with about three suggestions a week. They come from Ericsson units both at home in Sweden and from abroad.

"But we have the capacity to handle far more suggestions," says Bengt Franzén. "It's just a matter of getting a pencil and thinking."

Prioritized areas that the TRIM group is working with are, among others, to reduce travel costs and to streamline all dealings that have to do with computer issues and information systems.

As an example of these areas, Bengt Franzén points to that of dealing with leadership, research, business lines, administration, quality, technology, routines of various types and pure savings suggestions, for example how to save on pencils and paper and similar simple things. These are also important, according to the principle of "evry little bit helps."

"It's a matter of getting a pencil and thinking."

The suggestion activity in itself – how to increase creativity in the organization – is also the object of the suggestions for improvement. The concept "Total Creative Management" (TCM) often comes up in this context.

"The suggestions that have come in and that continue to come in touches on many current and important areas.

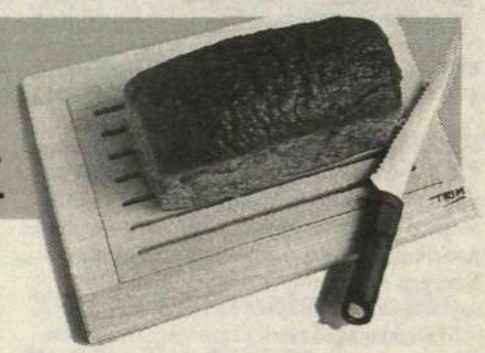
Is there a reward for suggestions sent in?

"Certainly, there is," Bengt Franzén affirms. "But in the end TRIM is only a pool for gathering up and inspiring good suggestions. All suggestions are dealt with by the the relevant department and are rewarded by them. The TRIM group itself cannot reward but it certainly can recommend compensation for a good suggestion.

"We are in the process of discussing a procedure by which the TRIM committee in its own rights could reward suggestions."

Ideas sought

Bengt Franzén is seeking good ideas and suggestions that have to do with making our operations more effective. You can reach him by fax 08-6812014 or MEMO ENS. ENSBAF. Phone 08-6812903.



Cutting-board for all

However, since the beginning of the year anyone who submitted a suggestion to TRIM secretary Bengt Franzén received a beautifully carved wooden cutting-board with removable lattice work.

"Every morning when they use it I hope they will remember the TRIM concept and realize that we need new fresh ideas, and that at the same time we must continue "to trim" costs," he says.

"So far we have handed out some 50 cutting-boards," Bengt continues and goes on to explain moreover the curiosity in that the cutting-board is an Ericsson product. It was made in an Ericsson workshop where coincidentally manpower needs during a transition period was at a low level.

"The basic thinking in most suggestions that have reached me is that we must use the group's collective resources in a better manner. Naturally, it is not only a metter of saving money. We must also invest in new projects.

"We must acquire an environment that makes for better use of our resources," Bengt emphasizes. "Encouraging suggestions is important, for example that a bonus system of a varying nature be introduced."

TRIM 92 initially was set up to oversee that our resources were used as effectively as possible. TRIM 93 is more oriented in part to land the activities and suggestions that came in during 1992 and partly to drive a number of projects that in the long run would contribute to streamlining Ericsson's entire operations.

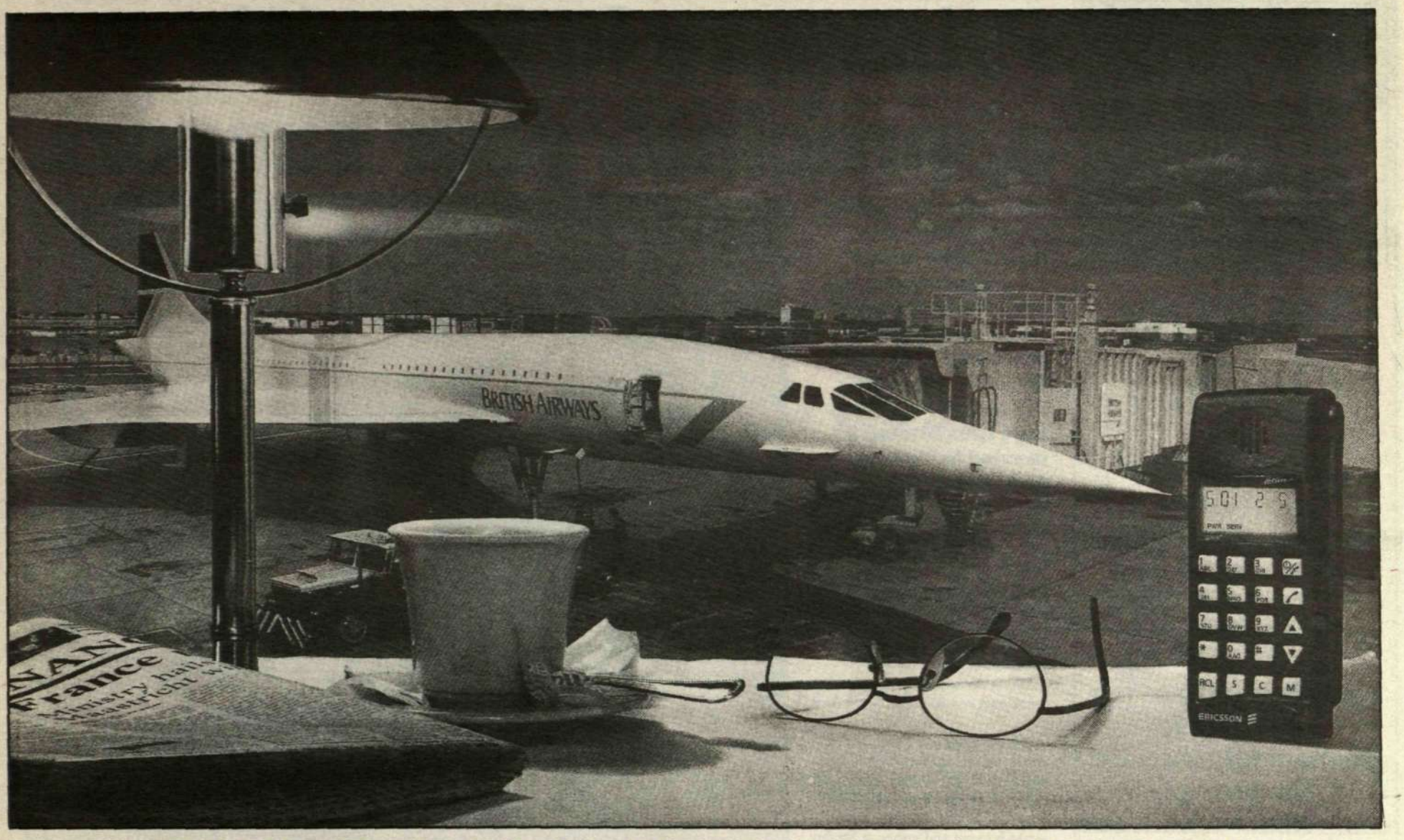
"There is for example a transverse project going on called IS/IT (Information Systems and Information Technology). Among other things we have done a benchmarking on computer costs. It provides certain information on how we can deal with this. There are very heavy costs, reaching multi-billions.

"High costs do not have to be a mistake."

"However it is important here to point out that high costs are not always a mistake. Sometimes you need high costs to carry out important projects. We have a very high development level in the company, " Bengt points out. "That's why it is so important that we do it right from the start."

"Another transverse project, where we are using benchmarking, concerns our administrative costs. We began this a couple of months ago," Bengt Franzén concludes, and at the same time he asks you to submit a well thought out TRIM suggestion.

Thord Andersson



There is no person in the ad. Now it is the phone itself that is the ``hero'' and the user that has the leading role. To avoid confusion with ordinray cordless phones Ericsson's telep-

HotLine moves out, Ericsson takes over

New marketing concept promotes the Ericsson name

Harry Hotline was born seven years ago when Ericsson's pocket phone was shown for the first time.

Now, with the launching of GSM phones in Europe, HotLine is moving out to be replaced by Ericsson as a brand name. This is part of the new marketing concept, which now is being launched launched in Germany. This will come now after the CeBIT fair.

Already at the end of last year Ericsson was alone in delivering pocket phones to Mannesmann. This business has quickly grown in size. Only a few weeks ago, Ericsson received a very large order from Mannesmann. In this order, pocket phones in very large quantities was included.

New world

"Now we are going into a `new' world," says Leif Dahl, as he speaks about the new marketing concept that was introduced in spring. Leif is located at Ericsson Mobile Communications, ECS, in Lund. There he is responsible for marketing communications for mobile telephones throughout the world, with the exception of North America.

With the introduction of GSM phones the situation for marketing of mobile telephones has become totally different.

In this "new world" it is a matter of huge volumes, reduced prices, short life cycles and competition among operators, with lower calling costs as a result.

New countries

"With the GSM phones we are coming into new and large countries such as, for example, Germany and France. These are markets that were previously unknown to us as far as selling mobile phones," says Leif.

A study was undertaken to find out what people in Europe had attached to the name HotLine. It showed, for example, that the French associated HotLine with fashion and clothes while the Germans thought of computer services. The study clearly revealed that HotLine is not a name that appeals to every country.

"Now when we are introducing our GSM phones on new markets, we do so with the name Ericsson which is our new brand name. First it will apply to GSM phones and then gradually to the analogue models," Leif explains.

Swatch competitor

The market for mobile phones will be enormous and very consumer directed. This stems from competition among operators, which will lead to lower subscription costs.

Among competitors there are many who do not belong to the telecom industry. As an example Leif points to the Swiss watch manufacturer Swatch, which sells mobile phones to the ETACS system in Italy.

Mobile telephone customers are no longer just businessmen, workmen and service technicians. More and more young people and women are joining the ranks. Distribution channels will play a bigger role than before. It is not merely a matter of small businesses but rather a few really large customers, who have their own sales channels.

Advertisements, brochures, billboards and packaging, all will come together. As precisely as before the message will be freedom but it will be shown in a new way. It will be done by photographing environments that are exciting and inspiring.

Telephone in focus

Previously, it was Harry who with his HotLine symbolized freedom. Now it is the product, that is the telephone, that is the "hero" and there is no person in the ads. In the end it is the user himself who has the leading role.

By showing the phone together with, for example, a coffee cup or a pair of spectacles we can show how small the phone is. This is shown in places far away from home so as to avpoid confusion with the ordinary cordless phone, which, for example, can be used at home in the garden.

Start in Germany

Germany will be the first country where the new marketing concept will be introduced. In february Ericsson had image ads in two large German newspapers. At CeBIT, the huge fair at Hannover in March, there were naturally GSM phones in use. Ericsson phones could be seen in the stands of many different exhibitors. Being the smallest portable GSM-phone it naturally attracted a lot of interrest.

However, it was after the fair that the actual launching took place and then in cooperation with Ericsson's german company, Ericsson Mobilfunk.

A little later the GSM phone was launched in Portugal.

"Here in the Nordic countries you can say there has been a peep-launching. This gives Harry and HotLine a chance to slowly live out the year. Sometimes it is necessary "to kill your darling," times change and Harry just does not fit into our "new world," Leif concludes.

Gunilla Tamm

Pocket phones in England

Ericsson's pocket phone EH 97 for the TACS system has been successfully introduced in England. It was at the end of last year that EH 97 became accessible in England. Since then four large companies have signed agreements to distribute the Ericsson phone.

Prisoners in Iraq: We appreciate your support

"The letter to Saddam Hussein with more than 25,000 names from Ericsson employees around the world meant an incredibly great deal to the guys. They felt they were not forgotten." Thus says Liisa Strömgren, married to Christer Strömgren.

Christer Strömgren

Since January, Christer Strömgren, Leif Westberg and Stefan Wihlborg were allowed to have visits from their families on four occasions. The families remained in Baghdad a week and visited the prison every day.

"We were greeted very friendly by the prison authorities and were allowed to stay a long time with the guys," says Lars-Erik Wihlborg. He is Ericsson's site manager in Kuwait and father of Stefan Wihlborg.

Liisa Strömgren, married to Christer, has on a few ocasions been inside the 2x3 cell that Christer, Stefan and Leif are sharing.

"It is clean and well-kept and the guys have put up simple shelves where they put their clothes and books," she says.

It is important to read and that applies to both newspapers and books, as well as to trade literature about mobile telephone systems, for example. They also have the possibility of listening to radio but it is difficult to receive Swedish broadcasts.

Lars-Erik Wihlborg and Liisa Strömgren have close contact with Ericsson's crisis group.

To keep themselves in good shape they play a lot of football and volleyball several hours a day. Every Sunday someone from the Swedish Embassy in Baghdad comes to visit them. Some letters are sent through the embassy's fax.

"Christer has never been a champion letter writer, but now seven or eight pages is not unusual," says Liisa. The boys think it's nice to get greetings, and it doesn't have to be long letters. The important thing is for them not to feel that they are forgotten. All the Christmas greetings they got were really uplifting. Both Stefan and Christer have their birthdays in May, and that can be a reason for a few lines of greeting.

Relatives in Sweden have close contact with Ericsson's crisis group and meet regularly at the Foreign Office (UD) for information.

Both Ericsson's crisis group and the Foreign Office give their support in every way and are doing a great job, say Liisa and Lars-Erik. "We all hope for an early release and it is important for us to look ahead at all times," they concluded.

Text: Gunilla Tamm

26,923 colleagues show support

26,923 signatures. This was the result of an appeal to Ericsson's employees to express their support for their imprisoned colleagues Christer Strömgren, Stefan Wihlborg and Leif Westberg. The appeal in the last issue of Swedish magazine Kontakten and through our internal electronic mail system was a total success.

We didn't have too many days left to gather up the signatures before Saddam Hussein's birthday on April 28.

Still, Ericsson employees reacted with lightning speed all over the world. When Lars Stålberg, chairman of the Ericsson crisis group, handed over the boxes with the list of names to Iraq's chargé d'affaires in Stockholm, there were more than 22,000 colleagues of the three captive Swedes that exhorted the Iraqi leader to set free Christer, Stefan and Leif.
Since then some thousands of more names have come in so the total at the time of going to press was up to 26,923.

"This must be a totally unique manifestation and the largest show of support we have ever heard about," says Ken Ryan at Corporate Relations, LME.

It is Ken who, with the help of Pia Rehnberg, collected and counted all the signatures.

Not in vain

In spite of it all there was no reaction to this gesture, but it has really not been in vain.

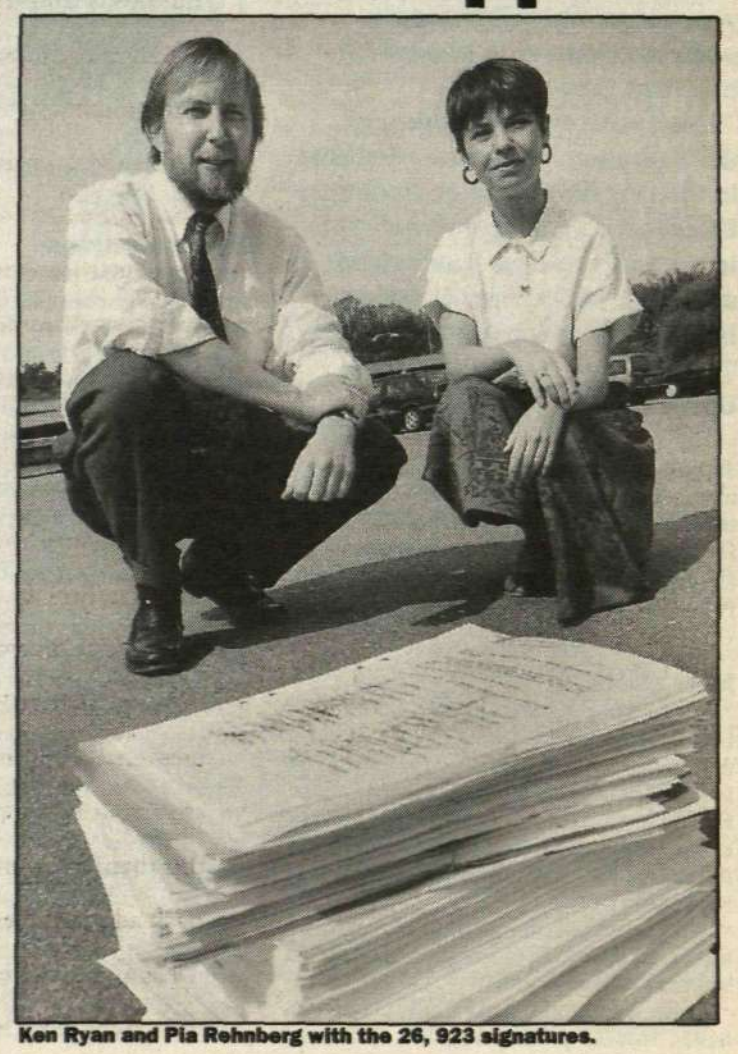
The collected names got a lot of publicity in the mass media and naturally that is yet another argument in the bid to win the Swedes' freedom.

And for the captives themselves it was a fantastic show of support from colleagues and it had immense moral and psychological significance.

"I therefore want to convey profound thanks to all of you who responded to this appeal," says Ericsson's information director, Nils Ingvar Lundin.

"The action has contributed immensely to renewing interest in the prisoners' situation and it has shown the world what fine and collegial spirit exists at Ericsson."

Text: Lars-Göran Hedin
Photo: Magnus Torie



Ken Ryan and Pia Rehnberg with the 26, 923 signatures.

INFORMATION ON ERICSSON'S NEW CORPORATE IMAGE CAMPAIGN

"Our Mission is to understand the needs, and solve the communication problems of our customers better than any competitor"

In the competitive, liberated world of telecommunications, the need for a strong profile is becoming increasingly important. Ericsson has already defined the core elements of this profile in its Mission and values: Professionalism, Respect and Perseverance. While many of us are already familiar with both the corporate values and Mission statement, until now these had not formed the basis of an advertising campaign directed specifically at our markets.

But this is happening now.

We have developed a campaign strategy which reflects our Mission, contributes to our long term objectives and supports our product marketing campaigns.

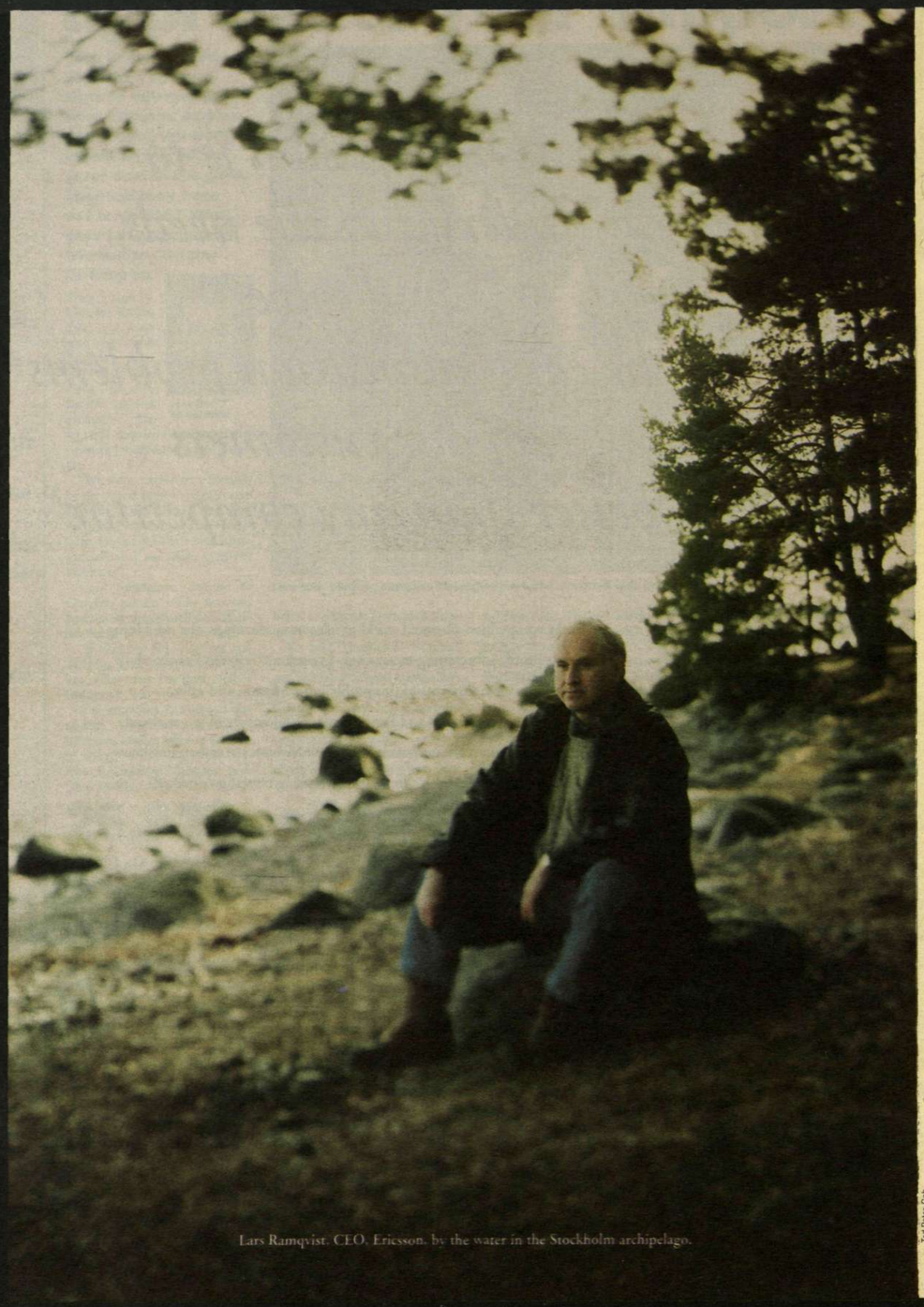
We want to demonstrate how we think, what our values are, and how we translate these values into better products and services. Respect is the keyword that reflects our way of dealing with customers, users and each other.

Technology is fundamentally a means to an end, and not an end in itself. Its development should therefore be based on an understanding of the customer's needs, and it should solve customers' communications problems - better than any of our competitors.

This is a fundamentally human approach. For this reason, we have chosen to use Ericsson employees in the campaign to stand forward and testify to this approach. In each of the ads, the thoughts of an employee are presented as reflections on this human approach. And since we are talking about values, attitudes and our way of thinking, what better way to present this than in the employee's private milieu, in non-professional situations?

Each ad should leave the reader with the impression that Ericsson is a telecommunications company different from all others - both in terms of technology and its approach.

ERICSSON



Lars Ramqvist. CEO. Ericsson. by the water in the Stockholm archipelago.

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

LARS RAMQVIST, President and Chief Executive Officer, Ericsson.

We expect to be able to communicate with anyone, at any time, anywhere.
We want to be liberated from the constraints of time and space.
Distances are shrinking. Traditional boundaries are losing their significance.
We want technology to work for us as individuals. We expect it to meet our sophisticated communications needs, but still be easy to use.
We expect technology to provide us with global freedom, and at the same time respect our privacy as individuals. It should allow us to reach others, but make ourselves available on our terms.
Today's technology makes almost anything possible. It is you and I who set the limits.

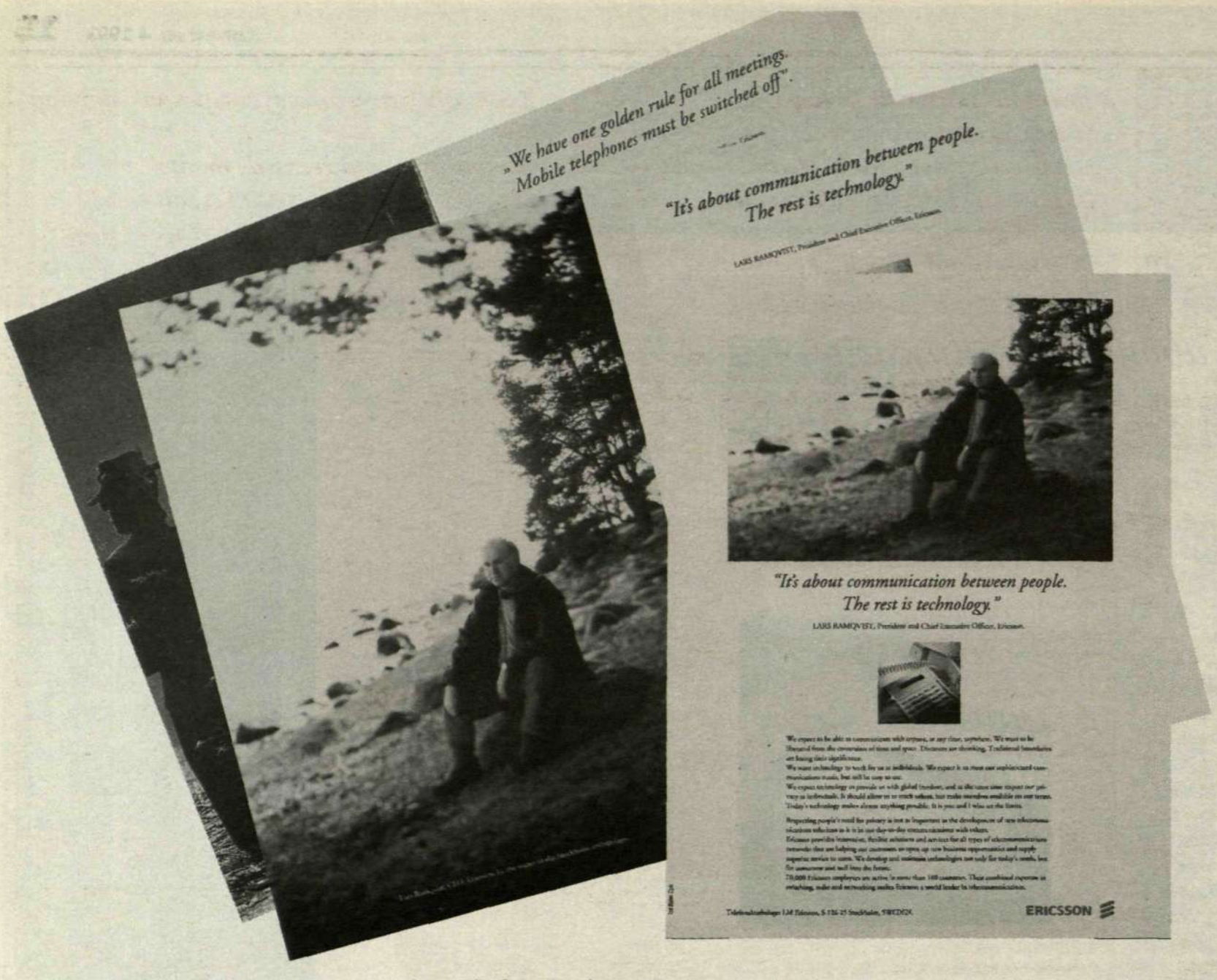
Respecting people's need for privacy is just as important in the development of new telecommunications solutions as it is in our day-to-day communications with others.
Ericsson provides innovative, flexible solutions and services for all types of telecommunications networks that are helping our customers to open up new business opportunities and supply superior service to users.
We develop and maintain technologies not only for today's needs, but for tomorrow and well into the future.
70,000 Ericsson employees are active in more than 100 countries. Their combined expertise in switching, radio and networking makes Ericsson a world leader in telecommunications.

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

ERICSSON

Ted Bates Cpn

The first ad forms the core for the rest of the series, which will support and develop its message.



Whereas the first ad with Lars Ramqvist expresses the corporate message, the following ads will focus on different Business Areas. People from various countries will appear in these ads to gradually build up a complete picture of Ericsson's areas of excellence in telecommunications.

All the areas will be covered from the same starting point - that it is our understanding and respect for human needs that inspires and drives the development of new technologies and new products and services.

Where will the campaign run?

Some ads will cover whole regions, or several countries. Others will be aimed specifically at one country, or at one Business Area, or even focus on one specific product. All ads, however, will be found on the same basic idea and created using the same graphic elements.

Customers, users and suppliers will gradually come to recognize and associate the ideas and images presented in these ads with Ericsson.

The campaign will appear for the first time at Asia Telecom in Singapore (17-22 May), and will be followed up with a pan-Asian campaign in May and June. Thereafter, the campaign will begin in selected countries and regions.

All markets will be able to make use of the campaign material, either as it is, or after alterations suggested by the market/country. Markets may also develop their own ads, based on the campaign ideas and message, which more directly address their specific markets. The only requirements will be that each ad supports and strengthens the Ericsson corporate profile in line with the Mission statement and follows the specification set out in the manual to be released.

Telefonaktiebolaget LMEricsson
Corporate Relations
Marketing Communications

ERICSSON

FUTURE MANAGER

A good manager in Ericsson:

- Listens to co-workers.
- Is a good "coach" for his team.
- Is a driving force in improvement work.
- Can make Ericsson's values, goals and strategies meaningful for his co-workers.
- Is visible in the organization.
- Looks after co-workers' competence development.
- Encourages and rewards merits.
- Greets his co-workers with a smile.

If you feel you fit this description, then apply for a manager's position in Ericsson, says personnel director Britt Reigo.

Your own initiative starts a career

Right now Ericsson needs a number of new managers. The quest to fill management positions at the lower and middle levels is acute. It is here that the career starts for those who have high ambitions for their future in Ericsson. Britt Reigo, personnel director in the corporation, exhorts all those who think they would make good managers to seize the opportunity.

Ericsson has close to 70,000 employees worldwide. A very large number of the work force are well educated. Competence is extremely high. The entire Ericsson organization is built in large part on independence among co-workers.

Still, it has not always been easy to recruit managers within the company.

"There is a tradition not to apply for a job that is advertised, not to take the initiative oneself to submit one's name as a management candidate," affirms Britt Reigo. She and the staff in Ericsson's personnel departments are wrestling just now with the problem of appealing to candidates for hundreds of vacant management positions.

"Many units have restructured or are on the verge of having their organizations changed. This often results in a need to replace managers. At the same time the hiring freeze imposed over the last year barred any possibility of recruiting managers from without.

Remove the barriers

Britt Reigo points out how important it is with mobility and rotation in Ericsson's personnel force:

"In such a big company as ours there are tons of interesting jobs for those who want to develop themselves, professionally and as human beings. It is actually one of the biggest advantages one has as an Ericsson employee, that is the opportunities for new experiences in one's own company. In this case what is good for the individual is also good for the company.

"I see job rotation as one of the best tools for tearing down barriers that continue to exist between various activities in the corporation," says Britt. "It is in meetings between people from different Ericsson milieus that we have a chance to destroy the myth that can continue to exist as to how "others have it" and how "the others are."

No hindrance

One myth that has been spread all along is that mobility among various jobs is limited only to one's own business area or company. That is a myth that Britt Reigo hastens to destroy.

"There is nothing whatsoever to prevent you from moving around in the entire company. On the contrary, mobility is something that is prioritized and supported at the highest levels.

Own initiative

Ericsson's program for management support, Ericsson Management Planning Program, MP, is geared long-term to assuring Ericsson's management support. MP provides a structure for manangement selection and a path for management development.

"That we have an MP program does not necessarily mean that management recruiting is done automatically," notes Britt. "First and foremost it will take a few years yet before the program is fully expanded, and not even then would it be possible to provide solutions for filling management positions at all levels."

Women managers

"The need for one's own initiative for those who are interested in a management position still holds. Those who are not in the program and are held to be management candidates must not think that someone else will take care of their own career. If an interesting job comes up in an ad it is still up to the private indivdual to apply for it."

"Through job rotation we can break down barriers," says Britt Reigo. **Photo: Magnus Torle**

Britt Reigo is the only woman among Ericsson's top executives. In a technology-geared company like Ericsson it has been, by tradition, difficult for women to make headway. But with the large number of well-qualified women that are now part of the company leadership could be a bit more proportionally divided.

"I really want to exhort all women to apply for management openings. We no longer live in a world where home and children must stand in the way of a woman's career opportunities.. Ericsson certainly needs more women managers. It is a need that is well recognized and that is also clear to the company's top executives."

Still a chance

Those who are not management candidates should not think either that they have missed the train. MP is not the only route to a career, since there are many good management candidates who are not identified in the program.

"People are changing and developing all the time. Someone, who at a given moment was not identified as a management candidate by his supervisor, could at some point later have changed to become worthy of candidacy. Since it's managers that have to propose candidates from among their co-workers there ia also the risk that someone was passed over because of purely bad judgement on the manager's side," adds Britt.

Britt therefore advises everyone who feels that he or she meets the requirements to fill a management opening should take the opportunity and apply for it.

Text: Lars-Göran Hedin

Jan Nordgren, product management Mobile Data, ECS, Kista:
"In 1991 I became section manager for a newly formed unit in product management base radio. For me, management gave a positive dimension to the job. Working more with guiding instead of executing functions felt right for me. I see myself more as a "generalist" than as a specialist. But the absolutely most important is that the job content feels stimulating and developing."

Bengt Rosengren, product unit manager, Ericsson Telecom
"I like to work with people and I want very much to take part in developing the company's activities. That's why I was interested in taking on responsibility for my own activity. For me the management job has meant a lot of work, but at the same time it has been incredibly developing. In a few years it will be time for something new and hopefully with more responsibility than what I now have."

Mikael Arvidsson, section manager Ericsson Telecom:
"I myself had no yearnings to be a manager, but rather was nominated by my supervisor as a potential candidate. On the other hand I am interested in people and people's development as well as desirous of seeing things go well, which I think are good qualities for a manager. I do not regret having chosen to become a manager. I have increased stimulus in my job, a real boost."

On the right track in your career

Hotel Hvide Hus in the Danish town of Köge is beautifully situated on the bay of Köge. One week at the end of April some 20 young people gathered here for a course, which is part of Ericsson's program for management recruiting. Just this course was unique, since also participating were some young executives from Ericsson customers.


Anders G. Boysen, LM Ericsson A/S.

Gunnar Lennerheim at Ericsson Management Institute, EMI, is what one can call a "course fox." He travels the world and directs various courses that are part of the company's program for management planning, EMP. A seminar for leadership development, Ericsson Management Development Seminar, is one of the courses that Gunnar works with.

"We have conducted these seminars for nine years now, first just in Sweden but now in different places around the world. This year there will be two Swedish seminars and four in other countries."

The seminar is drawn up so that a number of young executives are given various assignments to work with. They work in groups with a higher manager as a tutor. The manager observes how each and every one of them tackles assignments and expounds their observations in open group discussions. Participants also discuss each other's performance.

Follows up

After the course Gunnar Lennerheim goes over the participants with the tutors, who have also by then spoken with each other about expectations in a management career, along with other things. The aim is to come up with a recommendation for how the young executive should be dealt with in the future.

Some weeks after the course the tutors go through their conclusions with each participant. The tutor later does the same thing with the participant's supervisor and his personnel managerat the particpant's unit. There a development plan is drawn up for each individual.

Unique course


Jens Peter Smörum, KTAS

At the seminar in Köge were management candidates from Ericsson in Denmark. For the first time there were also young executives and tutors from Ericsson customers in Denmark – the regional tele administrations. The idea was to get these future managers closer to each other to lay the groundwork for future collaboration and for them to learn from each other.

"We want to accomplish something of a cultural exchange between us at Ericsson and our customers," explains Anders Boysen, personnel manager at LMD. "It has proved to be a good idea – the participants themselves and we the tutors have gotten a lot out of these meetings."

Jens Peter Smörum, personnel director at KTAS, the Copenhagen tele administration, agrees with that.

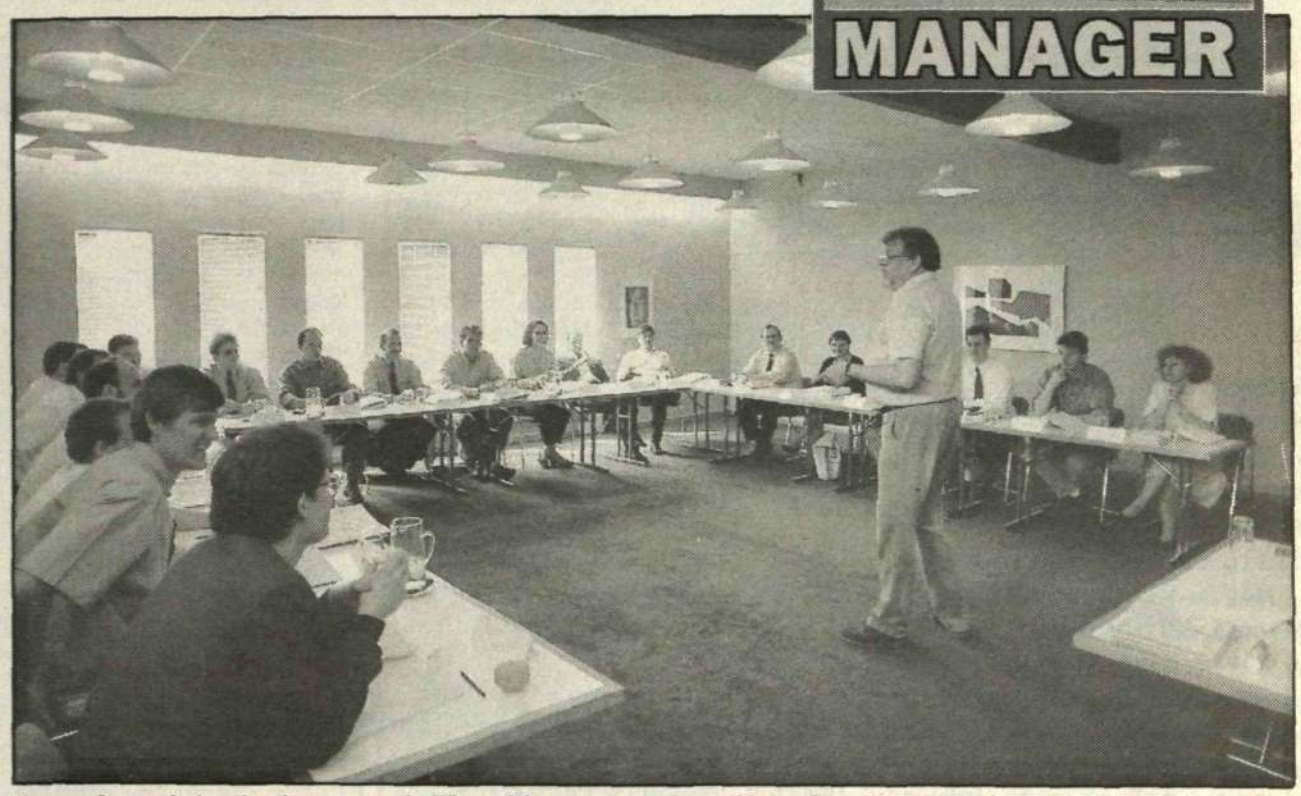
Impressed

"It was good for us from the tele company to be able to measure our junior executives against Ericsson's. We have always regarded Ericsson as a very professional company when it comes to training, and this impression has been reinforced by this seminar. And I am really impressed by the quality of Ericsson's young executives."

"We in the Danish tele administrations are now in the midst of a process of stronger customer orientation. Since we look upon Ericsson as very customer-oriented today, we have here a unique opportunity to share in your experiences."

"For our people this is a remarkable opportunity to get to know better the demands and needs that guide customer activities," says Anders. "For example I believe that many of our future managers in this way have gotten a greater understanding for what delivery times mean for tele administrations. They have gotten a deeper knowledge about barriers and labyrinths in customers' organizations."

Text: Lars-Göran Hedin


Gunnar Lennerheim directs a course in Köge with management candidates from Ericsson and some customers in Denmark. Photo: Lars Åström

MP pans for gold nuggets

A lot of work has gone into Ericsson's program for management support – Management Planning, MP.

One of the most important activities in the corporate function Personnel and Organization is driving MP, the company's program for management recruiting and "care" of management candidates. MP offers a structured and well thought through plan for how managers should be identified, recruited and trained.

"In MP management candidates are identified, and responsible managers draw up development and career plans for them," says Marita Hellberg, who works with MP on the corporate level. Together with Britt Reigo, Marita is responsible for supervising that MP is truly lived up to and is carried out in the company.

"We move around in the business areas and larger subsidiaries to follow up on how MP is functioning there. It is extremely important that all units in the company adopt MP. Without a wholehearted commitment it can otherwise be difficult in future to provide Ericsson with managers at the highest levels. There are about 300 higher management positions that MP must develop qualified people for."


"MP has to be carried out in the entire company," says Marita Hellberg.

PU-dialogue base

Through MP and other activities there is a clear structure for how Ericsson will be provided with managers. At the base lies personnel development dialogues, PU discussions. These annual dialogues between supervisors and individual co-workers provide the foundation for identifying which persons can be good management material. It behoves all managers in the company to identify and develop management candidates among co-workers.

"In order to be able to evaluate suggested candidates later there is a fixed method that is applied in MP. It involves assessing how the candidate responds to three important criteria: individual capacities, human skills and task skills. These three areas provide the leadership model that MP is based on.

"It is a detailed and profound judgement that is made in this manner," says Marita. "The different qualities and proficiencies that make up this model are well anchored both in Ericsson and within modern leadership theories."

Theory and practice woven

Apart from candidates that are already in management jobs today, new candidates are sought among employees in the age group up to 35. The aim is to catch good management material as soon as possible.

"This is so that early they can get training and broad experience from different parts of the company. For each and every one a development plan is drawn up, where training activities are woven together with practical work in various posts.

"Those who accept their nomination as management candidates make an exciting choice, which makes great demand on commitment and interest."

After four years MP still has a bit to go before the program can entirely satisfy the company's need for top managers. That's why there are still many positions that are open even with the program, something that sometimes give rise to critical comments."

Takes time

"The traditional method of moving into a management position, through one's own contacts and well-developed collegial network will certainly always be there. But when MP is fully into its own, management positions via the MP program will be more common," Marita Hellberg believes.

Today there are 230 persons in the MP program, so it will take a few more years before the target of 300 candidates is reached. In addition there are local candidates in the respective companies.

Text: Lars-Göran Hedin

AXE is a concept on everyone's lips today. Everybody wonders whether he has ``got'' AXE or not. Although the concept is well known there are just a few persons around who really know what AXE means and what it contains. As an employee at Ericsson one knows, hopefully, more than the ordinary guy. But few know how AXE came about and how it was developed.

In this and the next issue Contact will tell of how AXE became the huge success that it is and how some of our colleagues lived through the project.

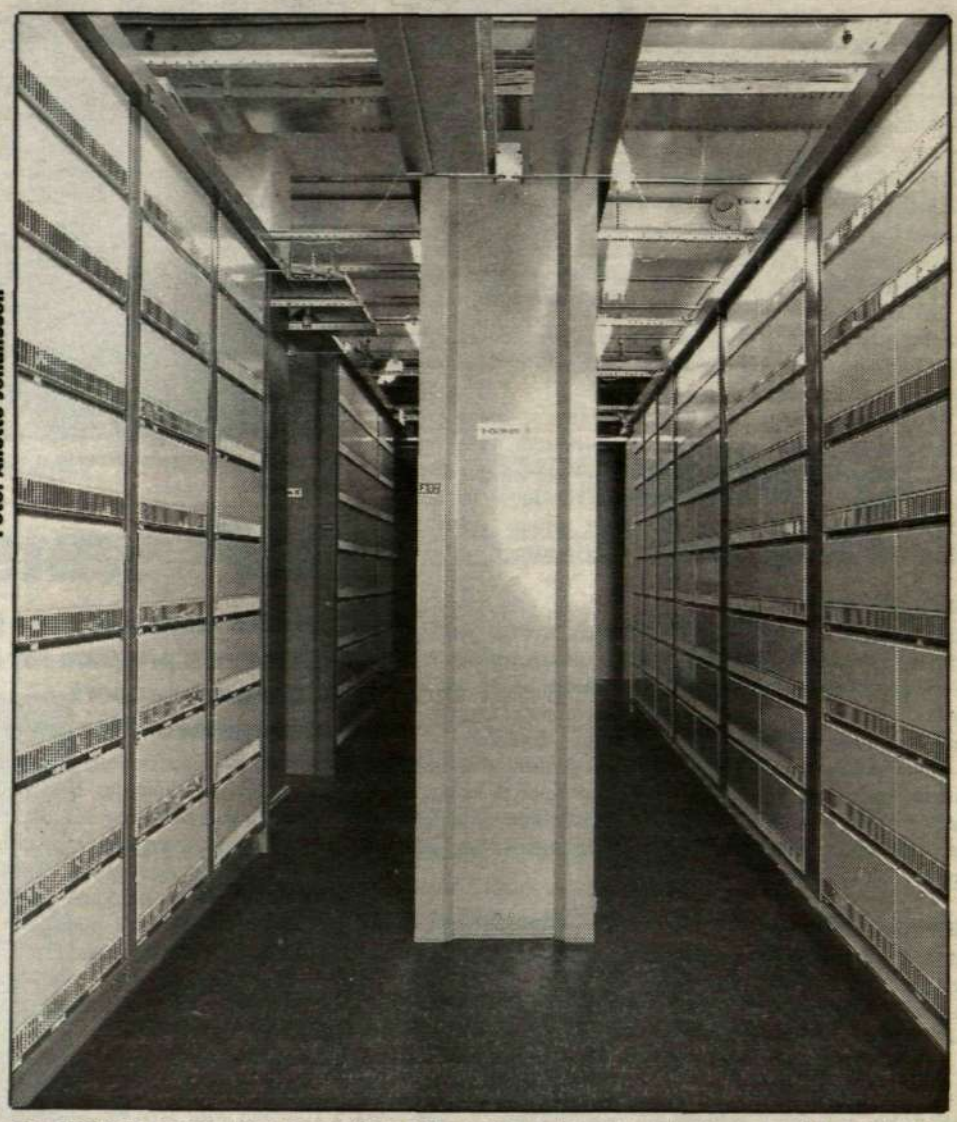
Many people were involved and it is impossible to tell it all. Hence, only a part of the history will be told, but nevertheless it is an interresting part om the modern telecom history.

AXE The world's most successful switching system

Today AXE is found in 101 countries. A total of 55.6 million lines have been installed and an additional 10.4 million are on order so far for installation in the immediate future.

"Not even in our wildest dreams did we think that AXE would be such a success," recounts Bent-Gunnar Magnusson at Ellemtel, responsible for technology and project leader at the beginning of the '70s.

Foto: Anette Johansson



The AXE tele system that revolutioned the entire telecommunications world is intalled in 101 countries today. Moreover, it opened up new possibilities for mobile telephony. Photo Karl-Evert Eklund

Today it is easy to confirm that investments to develop an entirely new telephone system were totally justified. More than twenty years ago, however, we were not so sure. To put all the electro-mechanical systems behind you and to dare instead to invest in something new and unproven was a very big step.

During the '50s and '60s developments in the area of electronics were incredibly rapid, but it was still electro-mechanics that mattered in the field of telephone exchange technology. Besides, if you had a product that was selling well, the reluctance to invest in something unknown was even greater.

Toward the end of the '60s discussions began to take place between Ericsson's and Televerket's management on starting their own joint development company. Both companies had determined then that neither Televerket's A-210 nor Ericsson's AKE 11/12 switches would be commercially viable. The new development company, Ellemtel, was assigned to develop an entirely new telephone system, namely AXE.

Taken up with AKE 13

Since in Ericsson they were taken up with AKE 13, the sequel to AKE 11 and 12, the internal interset for AXE was slight at the beginning of the '70s. But there was one person who immediately grasped the possibilities for AXE.

"John Muerling meant a lot for AXE's internal marketing in Ericsson," recalls Bengt-Gunnar Magnusson. "He was one of the first who really understood what AXE could entail, both technologically and from a marketing point of view."

It was not only inside Ericsson that they were marveling over the new system's possibilities. Even in the project at Ellemtel co-workers sometimes wondered how things would go.

"We spent hours dealing with issues. Our assigner at Ericsson, Hasse Sund, said that we had to knock out our competitors in telecommunications. But how could we match up ourselves with the giants, say like Bell?"

"Deep down we thought surely it would be a good system, even if we couldn't imagine the tremendous success that it has become," he adds quickly, with a smile.

As in all innovation projects work with AXE meant long days and hard work. At the same time there was always a strong commitment among co-workers and it was hard to pull yourself away from the job at the end of the day.

"Not even in our wildest dreams did we think that AXE would be such a success"

Former project managern Bengt-Gunnar Magnusson

A love story

"Weekends never seemed to end," recalls one of those who worked with AXE. "They were too long. We wanted to get back to the job."

Another co-worker described life with AXE's development as a love affair.

"It was a love story. A yearning, a longing, beyond description, compelling but seducing. Impossible to explain. It would be merely laughable to others. Yes, even my own analysis comes to mind that there was nothing else to do but to plunge deeper into this wonderful phenomenon."

A privilege

There are not many who in the course of their lives get an opportunity to work with such a technologically revolutionary project like AXE now or ever.

"It was my engineer's life finest years," another co-worker says. "Yes, hard if you think in terms of job hours, but the hardest part was that the day had only 24 hours. It was not being a victim; it was a chance, a privilege."

After several years of hard work by a large group of enthusiastic and dedicated people, AXE was finally ready to be launched on the market. We all know the result today. But to achieve that, hard work and commitment came from many people. In the next issue of Contact we will go into marketing and how we won our first order from the large international operators.

Anette Johansson

The name became AXE – despite everything

AXE has not always been known as AXE, and neither was it felt that the new tele system should be known as such. From the start the system was known as AX and with time it became AXE. But how do you market an entirely new product with the anonymous name AXE?

Now it was a question of finding a name that would work well in marketing. It was a tougher nut to crack than you might think.

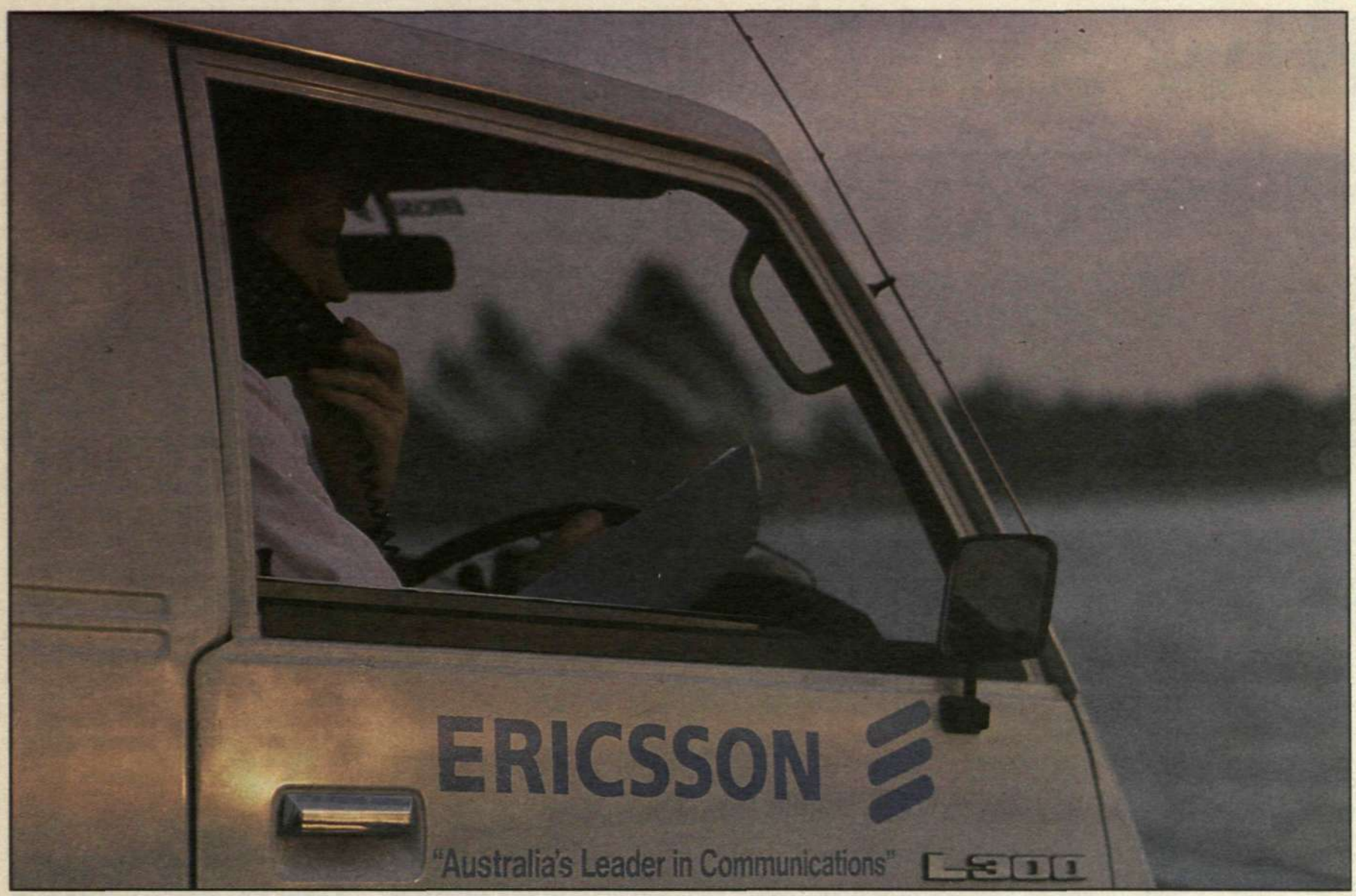
"In the end we did some brain-storming one evening," recalls Kjell Sandberg, one of AXE's marketeers. "In the end there was a list with a total of 516 different suggested names."

On the list there were all sorts of suggestions, from the less serious like Honken, Fredag (Friday) and Laban to the more serious like Modex and Centerio. But above all the name AXE remained in play and was even one of the three names that got the highest rating in the end.

Besides AXE was a well-established name now both in Ericsson and Televerket's Ellemtel, so why shouldn't the market accept it.

Quite simply, AXE should continue to be called AXE.

Despite all attempts to do away with the letter combination AXE, today it is one of the best-known tele concepts around the world. Even the ordinary telephone subscriber out in the Swedish countryside knows what AXE means



Ericsson Australia wins second GSM contract

Ericsson Australia has won a major contract that will have an overall value of 140 million US dollars, to provide GSM equipment to Australia's newest mobile network operator.

The agreement appoints Ericsson as the key infrastructure supplier to Vodafone Australia until the end of 1996. The contract calls for initial orders of 42 million US dollars, in 1993 alone.

The parent company to Vodafone Australia is the United Kingdom's Vodafone Group PLC, one of the world's leading cellular telephone network operators, currently building and operating mobile telephone networks in 10 countries. The Vodafone analogue mobile network in the UK has over 700 000 customers.

Commenting at the contract signing, Group Board Director of Vodafone Group PLC Mr Chris Gent, said the company had, through its contract with Ericsson, "aquired the world's best cellular mobile system for our customers in Australia".

He said the contract was part of the Vodafone commitment to create local employment opportunities. Much of the Ericsson-supplied equipment will be manufactured in Australia.

Handset manufacture

Vodafone is also said to be exploring the possibility of manufacturing GSM handsets in Australia. The Chief Executive Officer of Vodafone Group PLC, Mr Gerry Whent, said the company would establish handset manufacture in Australia, creating employment and export opportunities for Australian made handsets. One of the contenders, Orbitel, involves a joint venture between Ericsson and Vodafone.

Vodafone has established Australia as its base for expansion throughout the Asian Pacific Region. To date, the company has forged links into South Korea, HongKong and India and is actively engaged in pursuing mobile communications licenses in the region. Vodafone believes its plans will establish Australia as the major regional centre of influence in cellular telecommunications.

Service in September

Initially, Ericsson Australia will supply telecommunications switches, base stations and base station controllers to be deployed across Australia over the next three years. Vodafone plans to start service in Sydney, Melbourne and Canberra by the end of September, reaching out progressively into other capital cities and major regional centres from the end of 1993. It plans to achieve 80 percent coverage of Australia's population by 1996 and to secure 25 percent of Australia's rapidly growing mobile telephone market within five years.

Already, Ericsson Australia is the country's largest supplier of mobile telephone switching equipment. All analogue mobile telephone calls in Australia are switched through Ericsson base station equipment and in 1992 Ericsson was chosen by Telecom Australia in a 30 million US dollar contract to supply GSM equipment and establish Australia's new digital mobile networks in Melbourne, Adelaide and Perth.

Australia was the eleventh country to adopt Ericsson GSM digital technology.

Vodafone is the third mobile network operator do be licensed in Australia. No further operators will be licensed before 1997. In accepting the Vodafone bid, the Australian Government said the Group was successful, in part, because of its plans to market half-price tariffs for customers who choose to use the mobile service for local use only.

The overall value 140 million US dollars

Using a patented technology known as Micro Cellular Networks (MCN), the company expects to be able to cut mobile call tariffs by up to 50 percent in some circumstances.

MCN is a software operating system that enables regional centres to be covered by much smaller cell sites, reducing tariffs by eliminating the need for a vast network of large cells.

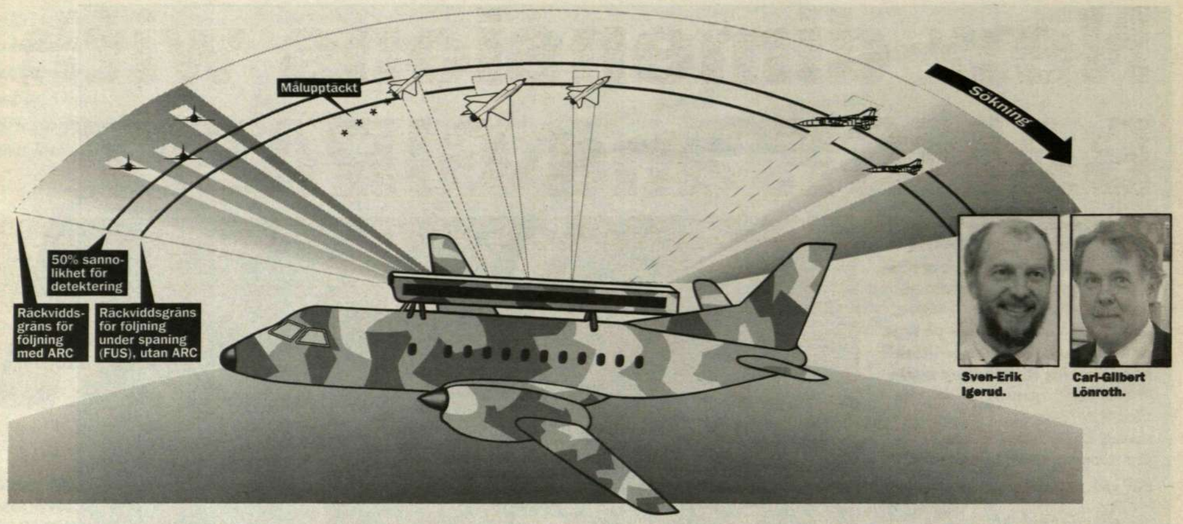
Best service

Customers who make local mobile calls within their "home area" are expected to pay only marginally more than the local call fee from a standard "wired" telephone.

The MCN service uses purpose-designed, low cost base stations that are environmentally unobtrusive. Local authority planning consent is not usually required, enabling them to be located quickly and easily in car parks, on roof tops and at the roadside.

In a recent British survey, conducted by Britain's telecommunications regulator, Oftel, Vodafone was shown to provide "the best service to mobile phone users" with an overall success rate for call connection of 93 percent, against 88,7 percent for its rival Cellnet.

Kevin Casey (left), Vice President of EPA, and Chris Gent, Vodafone Group Director, at the signing of the supply agreement.



Sven-Erik Igerud.

Carl-Gilbert Lönroth.

With ARC the sweep speed can be adapted to how far you need. You can sweep an area as often as you want, you can skip over certain portions and give more importance to others. Note that the illustration is not scaled.

ARC locates target

In conjunction with the PS-890 order being ready in February there is good news about the technically very interesting supplementary orders. One of these is Adaptive Radar Control (ARC), a system for guiding radar signals toward specially interesting targets.

This radar has the capacity to adapt itself to its environment and to the user in a unique way. In order to achieve this there is a need for an electronically guided antenna, where the radar beams (lobe) can be guided electronically in various directions while the antenna remains in a fixed mounted position. In the traditional radar station both the antenna and the lobe are moveable.

Electronic lobe guiding

Electronic lobe guidance, in everyday language known as Electronic Scanned Array (ESA), the need for a mechanical rotating table is eliminated.

In a system such as PS-890 with active ESA the conventional transmitter is replaced at the same time as parts of the receiver with distributed transmitter/receiver modules. These are placed at the end of each antenna element. The various transmitters send out signals, whose phases can readily be varied individually. In space the different signals are then relayed to an antenna lobe , whose direction depends on the registered phase determination.

"Above all ESA offers everything such as advantages of instant lobe guidance and the possibilities of shaping the lobe," says Lennart Hallberg, technical specialist in microwave technology.

Manifold benefits

Sven-Erik Igerud is responsible for systems in project management for PS-890 and is the one who, together with marketing's Carl-Gilbert Lonroth, introduced us to the finesses of adaptive radar guidance. The benefits of ARC are manifold.

"Sweep speed can be adapted to how far is needed, you can sweep an area as often as you want and not be dependent on the antenna for guidance, you can skip certain parts and give more prominence to others."

To understand the finer elements of this sweep capacity you can compare it with a lifeguard who from the beach with his binoculars sweeps over crowds of people bathing and sunning. Maybe he starts by making a thorough sweep over the entire ocean of people, first on land and then in the water.

See what you want

When he has done this and situation appears calm, he can then take a closer look at a specific area, where certain people, who until now was seen as all the others, begin to move about. The alert lifeguard no longer wants to look at everything and, above all, does not want to occupy himself with his binoculars looking all over the place. He wants to be able to observe certain critical points in order to be at the ready in case something happens. During this time he needs to be able to keep them under observation and he wants to be able to sweep back and forth, he wants to be able to skip certain areas and concentrate on certain others.

It is the same thing for an air traffic controller. He is not always interested in everything.

"When the target begins to shift or begins to react in a totally different way, the old method is not enough," says Sven-Erik Igerud. "Then you need this new antenna where the beams can jump to the interesting areas and do not need to sweep an entire arc all the time, where the operator can look as often as he wants at as circumscribed an area as he wants and follow a particularly interesting target as far as he wants".

Eight-fold advantage

The introduction of ARC offers above all two key advantages: increased scanning in prioritized sectors and improved follow-up performance toward a prioritized target. Increased scanning corresponds to a large extent to an eight-fold increase over the transmitting effect in conventional radar. Thanks to ARC the weight of the radar and the follow-up systems can be kept down, which in turn means that the radar can be borne by small, and hence, cheap aircraft. As a result ERIEYE can thus be highly competitive on the export market.

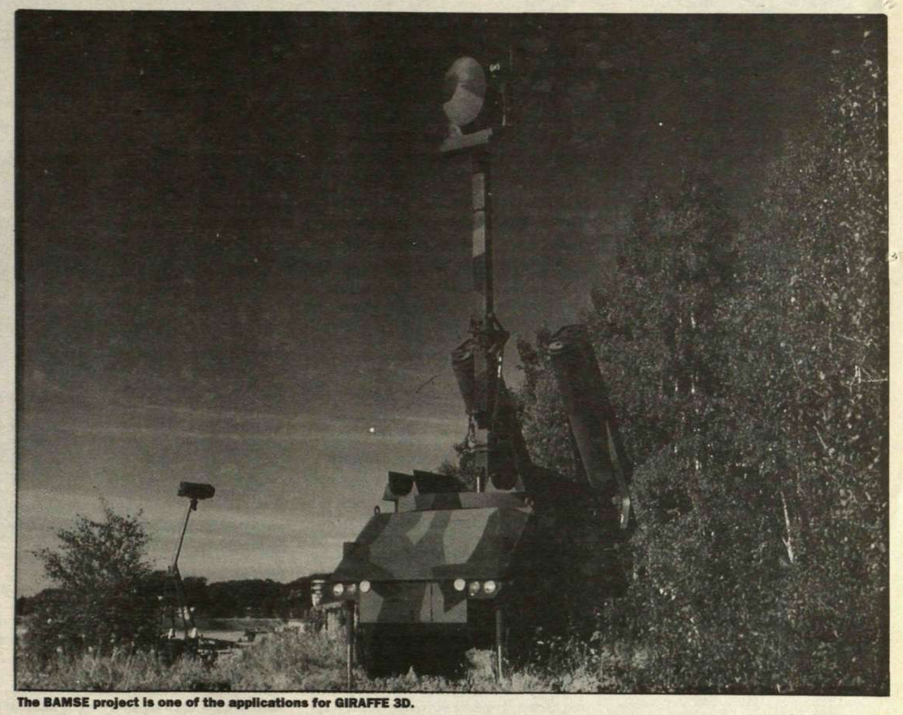
"ERE's system (aircraft plus radar) will cost about one-tenth of the American AWACS system," says Carl-Gilbert Lonroth.

With delivery of the first PS-890 radar, which is planned for the beginning of 1996, the ARC sytem will be in place.

Gunilla Bergman

New dimensions with BAMSE and GIRAFFE

The project with a three-dimensional search radar, GIRAFFE 3D, already has a few years behind it. Its chief candidate as collaboration partner, BAMSE, has had a somewhat yo-yo type of existence. The competition has been for it, and then again it has been against it. Despite that the 3D project has moved ahead at Ericsson Radar Electronics, ERE, in Molndal.


The BAMSE project is one of the applications for GIRAFFE 3D.

Ever since the Swedish military's Forsvarets Materielverk (FMV) in the mid-'80s gave ERE a feasibility study go-ahead for a 3D search radar, the GIRAFFE 3D has been waltzing with different partners.

First, it was the Robot 87 (a development of HAWK), a system that was put on ice in deference to the tumbling economy. BAMSE surfaced as a project in 1986, but has had an uncertain presence. With the FMV assignment, the 3D study has become even tougher still and so far has cost several million kronor.

Several applications

The radar is not uniquely designed for BAMSE. It also has a unique marine application for the future.

There are already sea GIRAFFEs, which have succeeded in reaching a lot of popularity in Canada and Malaysia.

There they have made tremendous efforts to develop very costly and advanced stabilizing platforms that are necessary for a radar on a swinging platform.

The 3D's radar construction permits both cheaper and more elegant installations for resolving this problem. The 3D radar can also function as a gap filler and covers aspects in national air reconnaissance systems.

In the matter of disturbance protection the 2D radar's already very good protection becomes even better in the 3D version. Last but not least, this type of radar goes well not only with BAMSE but also functions remarkably together with the excellent HAWK air missile in its present or advanced form.

Chief candidate

Undoubtedly, however, BAMSE is the chief candidate now that the 3D project is entering a new exciting era.

The Gulf war two years ago made it loud and clear for all that without a medium-range air missile with an altitude reach of considerably more than three kilometers, you are nowhere.

For Sweden's part it is well equipped with short-range missiles (within the three kilometer limit) and at higher altitudes the JAS fighter plane will soon take over. But this is not worth what it's made out to be and it represents a waste of money, some say, if the air bases on the ground are not protected.

This is where BAMSE comes into the picture. And with the 3D radar.

"In order to function fully, the medium-range system calls for a 3D scanning radar," Lars Kullvik at Y division in Molndal underscores.

The medium-range missile's foremost mission is to force the enemy down below an altitude of three kilometers, where there are many short-range missiles that can deal with him.

GIRAFFE 75 or 2D radar measures the intervening distance and bearing to the target. But it only provides a hint of where the object is located in the atmosphere. With its two radar lobes, a high lobe and a low lobe, and the interchange between them, it can in the best of circumstances only provide a rough estimate of height.

The 3D radar sweeps the air with a pen lobe at the same time that it scans the side paths. You get the bearing in the side path, horizontal distance and height to the target.

In the 3D radar the antenna consists of a large number of cells, antenna elements, whose signals can be guided independent of each other. By guiding the signals' phase situation with phase directionals the lobe can be focused in the desired direction.

Those who have occasion to use the 3D say: "A target is located 73 kilometers away at bearing 243 at an altitude of 6.4 kilometers."

Those who stay with the 2D say: "There is a target at bearing 243 with an intervening distance of 73 kilometers, altitude unknown."

This is how the difference can be expressed between second and third dimension.

Gunilla Bergman

Group is on global stand-by for AXE

A problem in an AXE switch can mean huge losses for an operator. That's why it is vitally important to restore telephone traffic as quickly as possible.

When a problem arises anywhere in the world, the AXE stand-by group is there to respond. They are on constant alert, 24 hours a day, seven days a week, all year round.

So it's a case of having your toothbrush with you at all times.

Emergency Service give first aid to AXE-stations

"If a problem comes up with an AXE exchange the operator can contact the emergency team any time of day,'' says Lars-Olof Bergman, administrator for Emergency Service within Ericsson Telecom.

There are always two persons ready to go, regardless of whther it's a total shutdown or any other type of serious problem.

In most cases the problem can be solved over the phone. They "talk the operator into a solution." But a couple of times a year, somebody from the emergency team goes out to a switch somewhere in the world. It's a matter of locating the problem as quickly as possible.

"You can say we provide first aid for AXE switches," says Nils-Erik Bergström, a member of the emergency team. "The best is if we can resolve the problem directly. If it's possible, we do that. But very often it's a case of finding a temporary solution so that telephone traffic is resumed."

Emergencies

The twenty persons in the group are on standby in addition to their regular jobs. In the course of a week two shifts of two are on stand-by. In total that amounts to about five week-days per year per person.

Nils-Erik usually works with technical support in Market Operations Asia, Africa and Latin America in Kungens Kurva south of Stockholm.

"When I am on stand-by I always have a phone with me," he says. "It rings at least once a week, and that's mostly after office hours and on weekends"

"During 1992 we received a total of 52 calls about disturbances in AXE switches" Lars-Olof Bergman joins in. "We solved all but three by phone. The other three calls needed on-site action."

"How serious the problems are naturally varies with each case. In order to classify as a real emergency situation it has to be a major disturbance in transmission or a complete stop in telephone traffic. Many of the calls we receive are not of such serious nature, but nevertheless we help out."

No need to know it all

An AXE switch is a very complicated technical system so it calls for some specialist knowledge among those in the emergency team. However, it is neither possible nor necessary to know it all.

"It is not human to know everything about AXE, so it is very important to have a broad contact network,"says Nils-Erik Bergström.

Like in so many other things, it is a case of knowing where to find out that which you yourself do not know.

"It can mean many hours with system documentation and lengthy telephone calls with other specialists before a problem is resolved ," he adds.

"If we still do not succeed in solving the problem I also have the possibility of simulating the actual problem in our testing facility here in Kungens Kurva."

Not always acute

The idea is that operators should call in to Emergency Service only when it is a matter of an acute problem. But it often happens that there are calls when the problem has nothing whatsoever to do with the AXE switch.

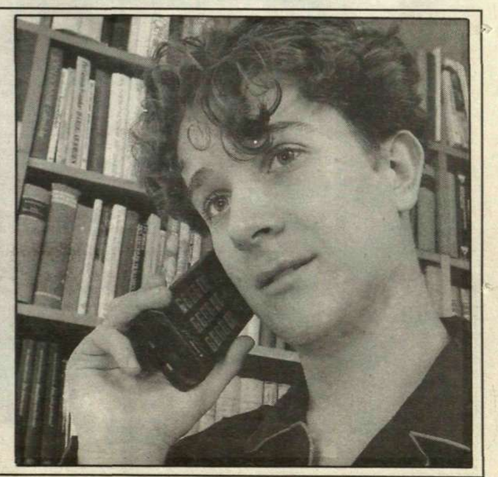
"Once the Swedish military called and complained of a problem in their switch," recalls Lars-Olof Bergman, with a smile. "On closer inspection it turned out that it was one of their loudspeakers that was malfunctioning..."

"On another occasion one of our overseas customers called. They had received a bomb threat over the phone and they wanted help in tracking down all the calls that had passed through the switch over the present time."

However, these calls are not usual, but rather most often the calls have to do with the AXE switch and are of a more acute character regarding telephone traffic.

Emergency Service always has the customer in focus and is prepared 24 hours a day. Perhaps, the unit can be likened to the SOS central in Copenhagen, with the difference that AXE switches are not flown home to Stockholm by flying ambulances.

Anette Johansson



"Teleworld of the future," Contact's series on how the telemarket will appear between now and the year 2000, deals in this issue with how teleoperators of the future will be divided into two main groups: those who own and drive tele networks and those who provide services to subscribers. Two main factors will contribute to heavily increased investments in telecommunications: developments in the terminal area and the possibilities to quickly acquire new services in the future network.
The material for this article was taken from VECTOR, the group for strategic network studies in ETX. The group, led by Berth Eklund, is based in Lund, Sweden.

Telecom in the Future

Telemarket gains in value

Free competition is the best requirement for players in certain markets to put the customer's need at the center. In a competition-laden branch it is market forces that determine which company grows and which withers. A particular market segment can be profitable over a certain period of time, only to become unprofitable later. The different market segments have different life cycles and their characteristics also differ in many ways.

This means that a company that may be successful in one market segment can never be entirely sure that it would succeed with the same business idea in another one.

The choice of which market segment the company will invest in is therefore difficult and is of major significance for how the company's organization, marketing and product portfolio would look.

Globalizing

During the last decade industry has been marked by significant globalizing.

In many ways development has had the support of telecommunications, which bridges huge physical distances between customers and companies and between a company's different units. Through telecommunications a company can also through very wide geographic spread have functioning internal communications. The business with an effective information technology already now has huge advantages over its competitor. It further increases the future demand for effective tele services.

The new telemarkets can, in principle, be said to consist of three different types of players: previous monopolists, new tele operators and colonizers.

Monopolists

The national tele operators meet bigger and bigger demands to take care of their global business customers with rapid and customer-geared tele solutions.

Parallel, the pressure increases from other customers for better product range at lower prices as a result of competition. The traditional operators will face two strategic choices in the ever increasing competition:

- The choice between remaining in the home market or expanding into new markets to gain big-operation advantages.
- The choice between specializing or broadening (investing in new types of activities).

In all relationships the operator will be forced to acquire several organizations, each and every one of which in an effective way can meet the competition in the market segment the operator chooses to invest in.

The American operator Ameritech has recently restructured into 11 customer-oriented business units. Each and every one is focused on a certain market segment, for example big customers, home subscribers and small businesses.

The large tele operators in the industrialized countries are now buying up in ever increasing number the tele operators in developing countries. Spain's Telefónica has bought into operator companies in Chile, Argentina, Venezuela and Puerto Rico. Other large operators are buying up mobile telephone licenses in several countries. Today Bell South lies behind licenses in Argentina, Chile, Mexico, Uruguay, Venezuela, Australia, New Zealand, France and Britain.

A Changing Environment

The new operators

The entirely new players with telecommunications as their foremost business idea will naturally invest in market segments that promise most profitability. These players will not try to compete with traditional operators in all markets but will rather choose only those segments where new operators can gain tangible competitive advantages.

The most talked about new player is British Mercury, which took up the battle with BT, above all with business subscribers. In Japan the new long-distance operators since 1985 have won more than 55 percent of the market from NTT.

Colonizers

These new players in telecom have their core business in something else. Very often their core activity is either stagnating or in reverse. Hence these companies try to expand into new areas. There are many examples: Kanto Elecetric Power is a power company that now own huge sections of Tokyo Telecommunications Network. The Swedish Railways is a subcontractor to Tele 2 in Sweden.

What segments the players focus their business activity on, that is to say what roles they choose to play, affects the entire company. In the choice of role there are two principal modes of activity that become ever more crystallized.

Two extremes

They are two extremes that stand out even more clearly now: activities that bridge geographic distances – Bridging Distance (BD) – and activities that go out to offer the market services that raise the value of telecommunications – Adding Value (AV).

The modernization of tele networks, which is now moving at full speed ahead in the industrialized countries, is meant at the highest level to streamline operations and maintenance. This has led to existing players in the end having lower costs, while at the same time entrance tickets for new interested parties cost ever more.

The tele networks of the future will be able to accommodate all types of services. Hence the differences between different types of networks will be eliminated.

Operators that opted for the BD role will be competing by offering the cheapest transport network. Every opportunity that could lead to reduced costs will be explored.

One such opportunity is to expand through acquisitions of shares in other operators. The future will show that minimum size in order to drive telenetworks in an economically effective way will increase.

Size will be a crucial competitive element. The number of BD operators will therefore shrink in number.

AV role

For the players that chose the AV role the future appears quite different. Here the market for different services will be split up considerably. Ecah service will be short-lived and hard focused on customers.

The target for an AV player remains to determine his market segment so well that the player will be sole supplier of a product. Of course this is not possible, but strong striving in this direction demands enormous flexibility in the player's different offers to customers.

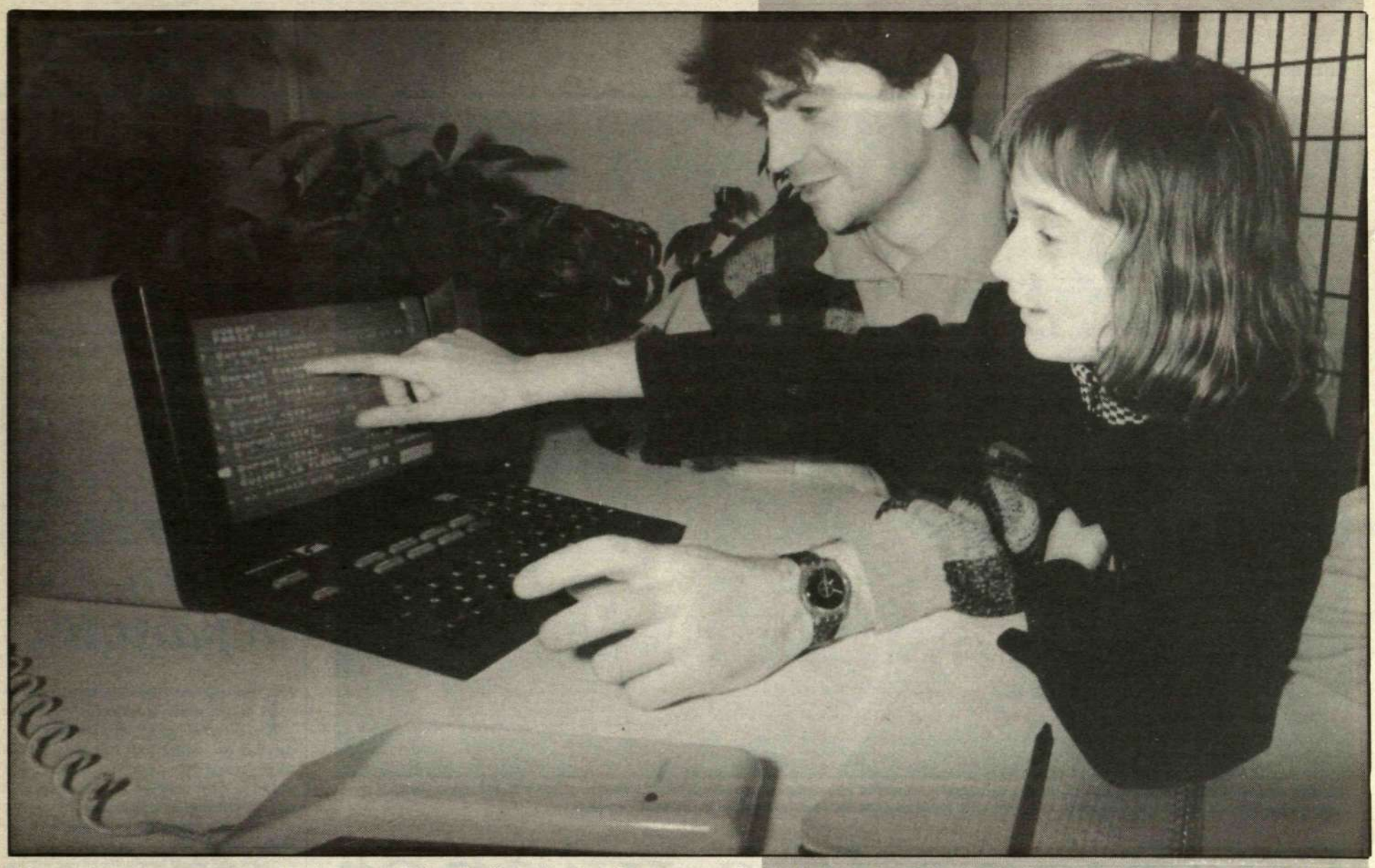
Since the AV role implies a short life cycle for products, the players will try to maximize their input to cover investment costs.

It is in the AV role that the number of players will grow. First of all it is colonizers from other industry sectors that are interested in this segment of the tele market.

Driving forces

Liberalization and increased competition mean that tele markets will again increase in terms of volume value, among others as a result of the number of players increasing on the operator market. There are four main driving forces behind the market's expansion.:

- A regulatory structure that permits competition on like terms.



In the future terminals will drive developments in telecommunications to an even greater extent. In France, which many look at as a pacesetter in terms of tele trends, Minitel has been a big success. This is a simple computer terminal , which, via a tele network, gives subscribers access to tons of information and a wide range of different services.

■ Increased access to customer-adapted products at marketable prices.
■ Increased use of capacity in the network through sales to other operators.
■ Conscious support activities for services and terminals from BD the BD operators' side, with the aim of increasing utilization of the network.

Terminals do the driving

Undoubtedly the bulk of expansion lies in terminals, as well as in services that are strongly linked to terminals.

Expansion in mobile telephony is a good example. An explosion in the terminal market is just around the corner.

The lion's hare of growth in the future will be in those market segments that are geared to customer-adapted services (AV role). The segment for pure network operators (BD role) on the other hand will stagnate in the industrialized countries.

A report recently published by the British consultancy bureau Analysis shows that the global telemarket will double in value over the next five years – if competition is introduced.

Customer suitability

Telemarkets today are geared more and more toward customers as private individuals. Customers demand ever more services that one feels are specifically designed to meet their own specific needs.

The operator who can offer services that makes each individual feel he is unique will obviously very successful.

When a market or sector reaches maturity, competition hardens in general. Here a process is effected in which customers are divided into groups and services are adapted accordingly.

The company tries very early on to make a strong link to special customer groups and to develop products in close collaboration with its customers.

We live in a society where information is one of the most important cornerstones. The quantity of accessible information is growing like an avalanche.

Information flow will cascade for many groups. It calls for suitable methods to structure this flow and to select the right channels for information.

Information needs to be filtered and composed according to the customer's needs and desires. It is also so important to adapt to people's way of communicating with others.

By using several of our senses we can more readily receive, exchange and digest this information flow.

That's why customers are increasingly asking for information to be adapted to them – instead of the other way around.

Security and ease

In the coming decade security and ease will certainly influence the market in many ways for various services.

As more and more people throng to the major cities, they will be more and more uncertain of their own and their neighbor's security. The many upheavals from habitual home environments, as many families will be forced into, contributes to this feeling of insecurity.

Already today, therefore, the branch for protection, security and arms is the fastest growing sector in the American economy. There are similar tendencies in France and Britain.

Clearly we are on the verge of dramatic change in the tele industry.The old technology view of telecom is on the way out and is being replaced by a flexible, customer-oriented, service-focused market. The new world picture will make huge demands on companies' strategic planning capabilities and their knowledge about the market.

Text: Anders Eriksson, Eva Lindqvist and Henrik Pålsson (co-writers)
Editor: Lars-Göran Hedin

Terminals take over

Development of the terminal area is one of the major driving forces on the telemarket of today and of the future. It is terminals that pave the way for new services and increased value growth on the market. The number of terminals and the different types that are available will in large measure lay the base for investments in networks.

Growth in mobile telephony is a very good example. The entire driving force for this is access to small, light terminals. When the German Mannesmann Mobilfunk launched its D2 network in Germany, it took several months before the number of subscribers took off.

It was only when there was access to portable terminals that things began to happen. Then came growth as never before.

Network operators must also actively support development of terminals to be able to develop their own buainess activity.

The greatest part of traffic increase in general tele networks stems from the increased use of telefax.

Terminals of the future will be different from those of today. A new type is the general multiservice terminals that can handle a number of different services. These are very powerful terminals that can handle several mediums simultaneously. They are popularly known as "multimedia terminals." It is a combination of different types of terminals existing today, largely influenced by today's personal computer.

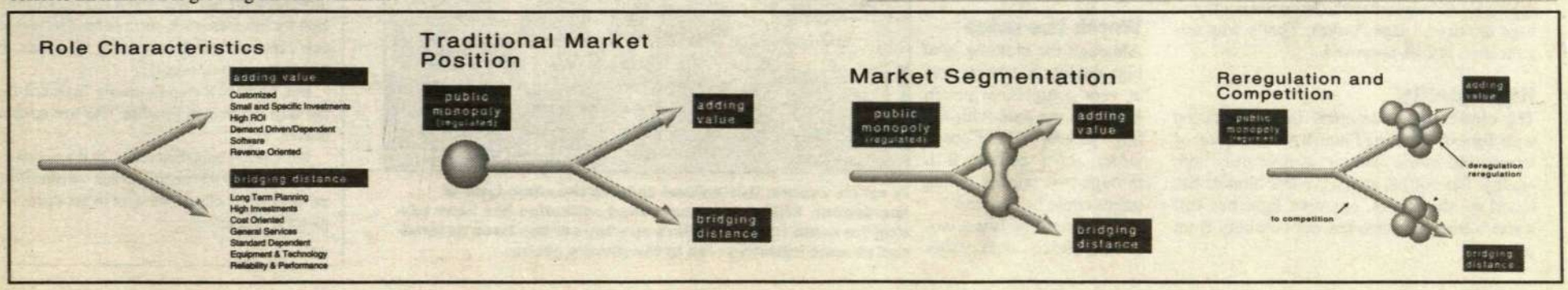
The other group is very heavily specialized terminals, closely associated with a particular service. A remote control switch can be such a terminal.

Common to most terminal types is that they will be all linked to a common infrastructure.

All terminals in a workplace are linked to a local network in a room, which in turn is connected with a department or residence network.

There are examples of successful tele services that are not driven by terminal developments. Instead, these have their origin in increased functionality in tele switches. An example of such services are the 020 and 071 toll-free numbers. These can be reached from the entire installed base of telephones.

Many recognized analysts and futurists in the tele branch say that service operators, who offer their services from a central node (as in the French Teletel concept) will represent more than a quarter of the total tele revenue already by the year 2000.



CONTACT

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The new sportswear suits many sports. It can be ordered from the personnel store in Karlstad. Anders Larsson at Ericsson Mobile Communications in Rissne, Sundyberg, can help with getting gear for special events in different sports.

Everyone is a winner with the right gear

Thousands of Ericsson employees practice aerobics and sports in some form during their spare time. There are several hundred sports clubs in the company.

A thrilling offer is made to everyone now. Ericsson has come up with a collection of sportswear, of high quality and at a low price.

Since the clothing is CVI approved, this is the clothing that must be used in sports context since the company contributes toward costs for gear, registration fees and such like.

Gymnasts and sports enthusiasts in the company have long sought a good collection of sportswear in the the range that the company's personnel shop offers. Local initiative has been taken in many places but still missing was a common design that took into consideration Ericsson's CVI rules and that really made the company's participants visible at, for example, major sports events.

Anders Larsson at Ericsson Mobile Communications in Stockholm has just come up with an entirely new sportswear collection. The guiding principle for the task was to come up with smart clothes that is easy to identify with Ericsson.

"When we designed the clothing we really put a lot of thought into it," recalls Anders. "The position of Ericsson's logo, the choice of color and design were all discussed with the CVI committee, whose job it is to see that the rules are followed when the Ericsson name and logo are used," says Anders. That's why this collection is CVI-approved.

High quality

The clothes were designed in collaboration with Terinit, a leading Finnish manufacturer of leisure and sports clothing. It is of truly high quality. Ski outfits, which Anders himself has tested on the slopes, are very light but still warm – the cloth breathes out humidity from the body.

"Terinit adapts the properties of the clothing to how it will be used," says Anders. Hence we are able to offer clothing both for the really qualified sportsman and for those who want to use it in a more relaxed tempo.

Several variations

It is not only ski outfits that have been designed.There is also a whole line of clothing for different sports and purposes. Jackets in various models, pants in various lengths, Tee shirts and linen – there is a wide selection to choose from.

"Now that We have come up with a common design program it is easy for Terinit to introduce special gear for, for example, orienters, if they have special purposes for such," Anders explains.

Worth the price

Although the clothing is of high quality, it is being sold at very competitive prices. Just as is the case with sailing jackets that Contact wrote about earlier, it is through bulk purchases that prices could be kept low.

"This clothing is not more expensive than other sportswear from specialist suppliers in the field," says Anders. "What distinguishes them from others is the quality and the Ericsson design."

Standard

It is not unusual that sports clubs in Ericsson participate in various major sports events. In this context there is often a certain sponsorship from Ericsson's side. The CVI-approved collection of sportswear facilitates getting support for leisure activities.

"I propose that managers who in future are asked to contribute to competition gear, registration fees etc. should see to it that participants from Ericsson use the new sportswear," says Ericsson's information director, Nils Ingvar Lundin. "Since this clothing so smartly displays the Ericsson name and makes it easy to identify participants from our company, the company gets more benefit from sponsorship.

"Our employees are the best ad vehicles we have for Ericsson," Nils Ingvar adds.

Text: Lars-Göran Hedin

In sports events, it is natural to have the same type of sportswear. Still, a commonly used collection has been missing for some time. Therefore sportswear has been determined at local initiative – as in the picture above.

END LINE

LARS-GÖRAN HEDIN

Return to paradise

The year was 1990. Ericsson reported its biggest profits ever. Contact's May issue confirmed logically that Ericsson was in paradise. An inviting coral island beach made the front page. Then came the tough years 1991 and 1992, where profits shrank and paradise felt far removed when one read about the ongoing recession and all the other misfortunes in the world.

Still – who would have believed one year ago that Ericsson could pull itself so quickly out of these depths.

After attending Ericsson's annual shareholders meeting on May 11 it was hard to restrain one's feelings. There were many who celebrated that evening. Rarely has a Swedish company earned such praise and a Swedish management group been applauded so fervently by its shareholders.

Harsh discussions about golden parachute agreements and misguided business afflicted other companies during the spring. The Swedish shareholders organization, Aktiespararna, is known for its tough questions to the board. Here at Ericsson's meeting they got up and called for a round of applause for Ericsson's management.

Still, in the end the question of the golden parachute came up – from an unexpected source. A faithful old servant among Swedish shareholder wondered a bit discreetly and somewhat shyly whether Ericsson had any such parachute agreements. The chairman, Björn Svedberg, said that there were such things in the company but they were not taken to excess. There are many market upheaval factors that in the mid-'80s made this a prerequirement for recruiting executives to leading companies in Sweden. Moreover, Ericsson is closely watching the results of the various committees that are working on developing rules in this area. It was typical of this celebratory occasion that the thousands in the auditorium were readily contented with this response.

Press coverage and TV broadcasts on Ericsson following the shareholders meeting and the release of the earnings report could only be described as something of a jackpot for the company. Ericsson was held up as the real winner in Swedish industry – and that we can say is well deserved.

In New York more shares than ever were bought and the price went up steeply. The rise in Stockholm the day after was a record. All-time high for Ericsson stock, word of large hirings of new personnel and constant new big orders. If that isn't paradise, what is?

But, as Lars Ramqvist clearly indicated the last time we were in paradise: "No tree reaches heaven."

It is equally important today, as it was yesterday, that we TRIM further. So that we can afford the price of a ticket if we want to get there – to paradise, that is.