


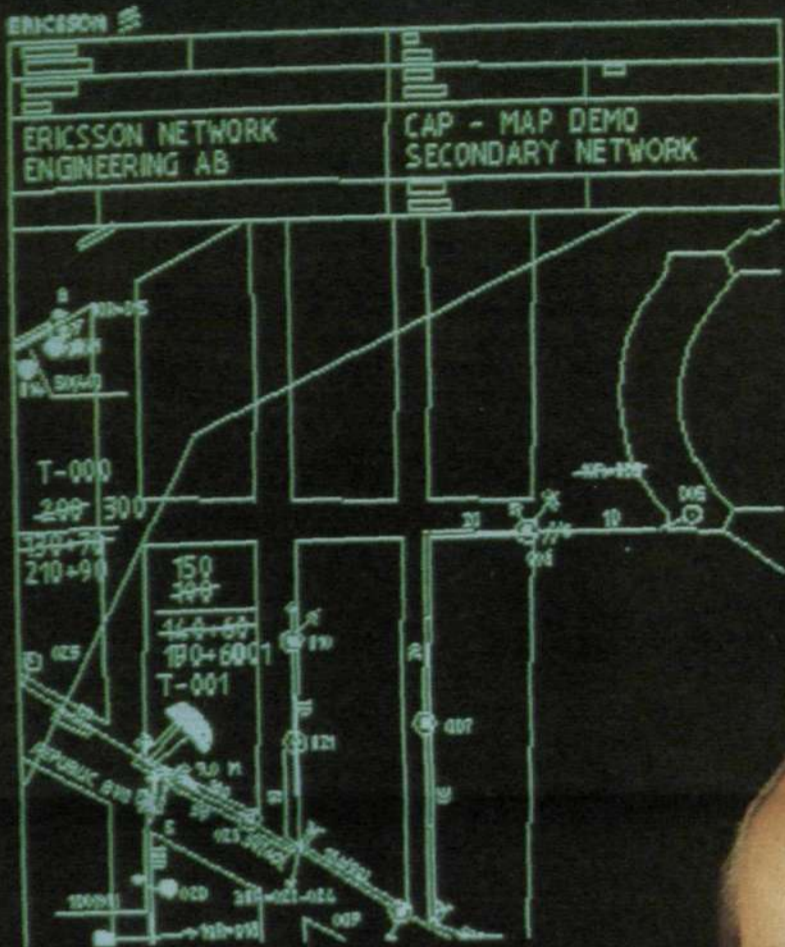
# Contact

M A N A G E M E N T

ERICSSON 

INFORMATION FOR ERICSSON MANAGERS WORLDWIDE

No 2 1989



F1= LINES TO EXIST. POINTS

F2= LINES TO NEW POINTS

F3= DELETE LINES

F4= VACANT

F5= NEW LINEMENU

F6= PLOT/ZOOM

F7= IN/OUT PARAMETERS

F8= NEW MENU



## Bridging the Atlantic

In the United States and Sweden, technicians are working side by side to combine two systems in the MD110 into one. Lars Boman, technical chief of the Communications Systems Division, is helping to build the bridge across the Atlantic.

Page 7



## Design approach

Design has always been part and parcel of many Ericsson products; but now, there is a need to apply design to a wider range of products, some of which until now have been ignored.

Center

## ERICSSON REVIEW



## Read the Review

Read Ericsson Review, editor Göran Norrman challenges us. You will find in it the result of technical work that is being done in the entire company.

Page 8

# Network builder

On February 1, Lars Berg took over as head of the Network Engineering and Construction Business Area, in addition to being head of Cables. Here, he is seen with a typical "network construction" illustration in the background, an electronic map with construction design for a public telecommunications network. The drawing was done with CAP, Computer Aided Planning.

Page 6

The Annual Earnings Report • Page 2



# Report on 1988 operations

Ericsson's consolidated sales in 1988 amounted to SEK 31,297 million (SEK 32,400 million in 1987), a decrease of 3 percent. The decline is due to substantial divestments during the year. Sales of comparable units rose 16 percent. Customers outside Sweden accounted for 81 percent of total invoicing, as against 77 percent in 1987.

Order bookings increased 7 percent, from SEK 33,405 million in 1987 to SEK 35,633 million in 1988. The increase for comparable units was 28 percent. The order backlog at year-end was SEK 26,876 million (24,171).

Consolidated operating income before appropriations and taxes improved sharply in 1988 and amounted to SEK 1,840 million (1,108), an increase of 66 percent. Income in 1988 included a net capital loss of SEK 5 million on the sale of shares and fixed assets, compared with a net capital gain of SEK 377 million in 1987.

## Operating income

Operating income after depreciation amounted to SEK 2,678 million (2,185). The conflict in the Swedish labor market in January and February seriously disrupted operations. Compensation in the amount of SEK 192 million has been received from Swedish employers' organizations.

Effective in 1988, shares of earnings in associated companies are included in operating income. Figures for the preceding year include shares for purposes of comparison.

## Business Area

(figures in SEK million)

	1988	<sup>1)</sup> 1987
Public Telecommunications	1,929	1,359
Business Communications <sup>1)</sup>	264	210
Business Communications	155	-2
Network Engineering and Construction	195	187
Cables	295	210
Components	113	88
Defence Systems <sup>1)</sup>	-87	182
Other operations <sup>2)</sup> , capital gains/losses, and general expenses	-186	-49
Ericsson, total	2,678	2,185

<sup>1)</sup> Due to organizational changes, figures for the preceding year are not comparable.

<sup>2)</sup> Operating income attributable to operations divested within Information Systems is included in "Other operations."

## Business Areas

For *Public Telecommunications*, 1988 was another year of substantially improved operating income. This was mainly due to the favourable trend of sales in many markets.

*Radio Communications* reported higher operating income. Major successes were recorded in mobile telephony operations, while the profitability of private radio communications systems was unsatisfactory.

Operating income of *Business Communications* improved sharply, due primarily to strong increases in sales, notably of the MD 110 subscriber exchange.

*Network Engineering and Construction* reported higher operating income for the fourth consecutive year, with substantial increases in order bookings and invoicing. The Italian market, which is the Business Area's largest, developed especially favorably.

*Cables* divested the greater part of its operations in the United States. This resulted in a decrease in sales, but operating income improved significantly. Major successes were recorded in the Swedish market.

Operating income of *Components* was sharply higher. The decrease in invoicing was attributable to the divestment of capacitor operations during the year.

*Defence Systems* reported a loss on operations, largely caused by high project costs for command and control systems, and for the Swedish JAS' military aircraft project.

## Financing

Consolidated net financial expense in 1988 amounted to SEK 533 million (895), a decrease of SEK 342 million. The improvement was attributable mainly to a substantial reduction in consolidated interest expense. As a result of the divestment of units with a high rate of capital turnover, this ratio declined to 0.90, compared with 0.97 in 1987. The rate of capital turnover for comparable units has continued to improve, however.

The consolidated equity ratio improved from 31.8 percent in 1987 to 33.7 percent in 1988.

## Capital expenditures

Investments in property, plant and equipment during 1988 amounted to SEK 1,739 million (1,592). Investments in Sweden totaled SEK 739 million (756).

## Parent Company

The Parent Company, Telefonaktiebolaget LM Ericsson, reported net income of SEK 578 million (495) after appropriations and provision for taxes in 1988. At year-end, the Parent Company had unappropriated earnings of SEK 1,222 million (989). The Board of Directors and the President propose a dividend of SEK 10.50 (9.00) per share, amounting to SEK 405 million (344). May 19, 1989 is proposed as the date of record.

The Annual General Meeting will be held in Stockholm on May 16.

## Outlook

Continuing improvement in income and profitability is anticipated during 1989.

## Income statement

Telefonaktiebolaget LM Ericsson and consolidated subsidiaries  
(Amounts in SEK million)

For the years ended December 31	1988	1987
Net sales	31,297	32,400
Costs of goods sold and services (exclusive of depreciation shown separately below)	-17,579	-17,952
Share in earnings of associated companies	241	166
Other operating revenues <sup>1)</sup>	452	730
	14,411	15,344
Selling, research and development, administrative and general expenses	-10,762	-11,946
Depreciation	-971	-1,213
Operating income after depreciation	2,678	2,185
Financial income	666	661
Financial expenses	-1,219	-1,556
Income after financial income and expenses	2,125	1,290
Minority interest in income before appropriations and taxes	-285	-182
Income before appropriations and taxes	1,840	1,108
<sup>1)</sup> Including capital gains	-5	377

## Consolidated condensed financial data

For years ending December 31

	1988	1987
Net sales, SEK million	31,297	32,400
Order bookings, SEK million	35,633	33,405
Order backlog at year-end, SEK million	26,876	24,171
Income before appropriations and taxes, SEK million	1,840	1,108
Income after taxes paid, SEK million	1,033	684
Income after taxes paid and estimates deferred taxes on appropriations, SEK million	1,195	736
Number of shares outstanding, millions	38.2	38.2
Income per share after taxes paid, SEK	27.06	17.90
Income per share after taxes paid and estimated deferred taxes on appropriations, SEK	31.29	19.26
Income per share after taxes paid, after full conversion, SEK	24.07	17.79
Income per share after taxes paid and estimated deferred taxes, after full conversion, SEK	27.79	19.09
Income per share in accordance with generally accepted accounting principles in the U.S. (U.S. GAAP), after full conversion, SEK	29.05	16.79
Return on equity, percent	11.5	7.5
Return on capital employed, percent	16.0	13.2
Employees at year-end	65,138	70,893

## Sales per business area

(in SEK million)

	Total 1988	Of which external	Total 1987	Of which external
Public				
Telecommunications	14,979	13,677	12,247	10,901
Radio Communications <sup>1)</sup>	4,836	4,745	2,883	2,839
Business Communications	3,703	3,540	3,314	3,139
Network Engineering and Construction	3,089	2,850	2,484	2,217
Cables	2,983	2,793	3,461	3,206
Components	1,739	707	1,810	763
Defence Systems <sup>1)</sup>	2,828	2,548	3,372	3,203
Other operations <sup>2)</sup>	997	437	6,886	6,132
Less intersegment sales	-3,854		-4,057	
	31,297	31,297	32,400	32,400

<sup>1)</sup> Due to organizational changes, figures for the preceding year are not comparable.

<sup>2)</sup> Sales attributable to divestments within Information Systems is included in "Other operations."

## Sales by geographical area

(in SEK million)

	1988	1987
Sweden	6,006	7,555
Europe, excluding Sweden	15,157	15,664
U.S. and Canada	2,237	2,614
Latin America	3,036	2,748
Africa	674	567
Middle East	1,071	600
Asia, excluding the Middle East	1,307	1,161
Australia, New Zealand and Oceania	1,809	1,491
	31,297	32,400

Two letters, and everything they stand for, have in recent years come to dominate Swedish trade debate: EC — the European Community.

The significance of the Common Market countries for the world telecommunications market can hardly be overestimated. Since Ericsson is one of the world's leading suppliers of telecommunications systems, the European Community plays a key role for us.

We are already well established in the Common Market. Forty percent of our turnover and 25 percent of our employees are already within the EC. A continued strong position within the community is of utmost importance for us.

Our goal for 1992 is, among other things, to ensure that Ericsson companies already in the EC countries are accepted as full-fledged suppliers and manufacturers for EC states.

We are continually seeking new business opportunities, at the same time always maintaining our good relations with the member states of the EC. We put especially great store in participating in research and development programs initiated by the Common Market Commission.

We are playing a very active role in the various committees that are working to define standards for industrial and trade relations with the EC. Moreover, we are working intensively to present Ericsson's activities in Europe for the various interested parties in the Common Market. We are doing this so that, even after 1992, we would be one of the leading suppliers of advanced systems and services to telecommunications purchasers in the EC.

There is no doubt that the Common Market is important for us, and we shall, in every way work to strengthen our position there. And above all, the Common Market does not pose a threat. Growth in Europe, the increased need for communications and a common market pose a positive challenge for us.

Björn Svedberg

# A view from the bridge

Today, national public networks are undergoing the greatest upheaval since the invention of automatic switching in the last century.

Yet investment in international telecommunications sometimes appears to be growing serenely to meet a growing demand — a continuing demonstration that the ownership of international gateways is a licence to print money. (Payback times for international switches are traditionally some of the shortest in the whole industry.)

But is this appearance of calm deceptive? Ericsson's Connexion magazine spoke to four very differently placed carriers to find out.

Cable & Wireless speaks as an installer and operator of networks for many different countries; British Telecom International is part of an old-established monopoly operator, now in a competitive situation; MCI is a new US competitor, now meeting its own new competitors, and Mercury is a new carrier meeting an old monopoly carrier head on.

The picture they give is not one of business-as-usual, but very much one of new opportunities to take, provided carriers can strike the right balance between investment and return, cost and price, marketing and technology.

What unites them is a desire that subscribers should take international calling for granted instead of being an adventure, international calling should become just part of the service from a subscriber's telephone.

## Matching the quality of the national network

Several elements meet in making this happen. Perhaps the most obvious is the opportunity to improve quality of service as the subscriber perceives it — speed and accuracy of connection, voice quality, lack of echo, error-free data transmission, lack of congestion.

The steady growth of digital switching and transmission in the international network contributes greatly in this area, and an end-to-end 64 kb network is a priority for many subscribers. The increased call-handling capacity of international exchanges goes a long way to reduce congestion, and rationalise the handling of calls. But increasing the size of exchanges is not an option without limits. Even with Ericsson's giant APZ 212 processor, fewer, larger switches will almost certainly be unable to handle the management of traffic growth and a growing range of services. More, smaller switches, on the other hand, carry a heavy network-management memory overhead.

Reliability is crucial. Smaller countries with very limited international traffic may have a single dedicated switch, or even a combined tall/international switch — certainly not enough to justify a fully duplicated switch installation. The crucial nature of a single international link will be even more apparent as single-access ISDN begins to spread. At the mo-

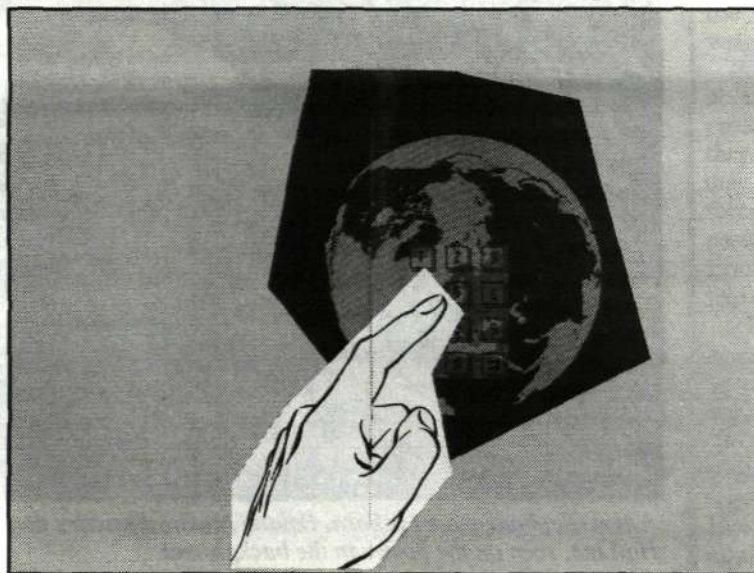
ment, loss of voice does not necessarily mean loss of telex, for example. In the ISDN, the situation is all or nothing.

## The drive for a homogeneous service

The opportunity for increasing revenue by increasing the range of services on offer is also significant. Customers themselves are looking for homogeneity with the national service. The spectacular growth in international fax is a striking demonstration of market demand. Other increasingly popular services are payment by credit card; credit-card verification

growing in importance for international carriers. However, the constraints of international operation impose a certain caution on marketing where every call is the subject of an agreement between at least two countries, it is not as simple just to try a service out, and the collection of data for monitoring acceptance and profitability is much more complex.

Technology is still as great a driving force in international networks as it is currently in national networks. There is a greater need for engineers to identify the service possibilities of technological advance, and to suggest to market-



and varieties of 0800 and 900 services; telex — still a growth service; leased lines; and data switching. But each new service means adding software to a switch which is already heavily loaded — and software is in short supply world-wide.

New services also impose new demands on network management and administration — and for the provision of comprehensive call data.

## The interdependence of marketing and technology

The carriers unite in agreement that the problem of charging is a barrier to growth. International tariffs are a function of international accounting. In an ideal world, traffic between countries would always be in balance: in practice, there is always an imbalance. And when one country tries to reduce its rates, another country tends to be out of pocket.

The result is a headache for marketers, and just as in national network operation, marketing is

ing managers that a particular service could be made available if there is a demand.

Transmission remains a major technological challenge. Nationally, the falling price of fibre-optics makes it very practical to cobweb a country to pick up services concentrated at large switches. Internationally, submarine cabling and transmission by satellite are still very expensive technologies.

There is no doubt that the apparent serenity of the international network is deceptive. It received new impetus with the introduction of international direct dialing, and it must now handle both the opportunities offered by the digital environment, and a surge in demand from subscribers for access and services.

International exchanges continue to be an important investment for any Administration with a big enough demand. But like all investments, they are increasingly complex, and need increasingly careful management.

## OUTLOOK

BY MATS HALLVARSSON

Annual reports are coming out now from the large telecommunications companies around the world. Two of Ericsson's major competitors, Siemens and Northern Telecom, report no significant gains and their forecasts are even less encouraging.

Siemens, the capital-rich colossus in Munich, which covers as many companies as Ericsson, Electrolux and Asea Brown Boveri combined, is a tradition-oriented concern.

Over as many years as journalists can recall, yearend reports have always cast an air of expectation over editorial departments. It comes with a cold winter's day at the end of January, and in Munich with its beer halls and carnival it is no less exciting. The world press listens and tries to pin down the German auxiliary verb that best describes the Siemens results.

But it is not only the auxiliary that is decisive. German auditing practices do not make it easy to penetrate the Siemens economy. The 1987-1988 yearend report was no exception.

It is obvious that Siemens' financial base is solid. But how does the company invest its tremendous capital!

This year Siemens declared 600 million DM in gross profits, that is before expenditures and taxes. The mark is worth 3.40 kronor. These results reflect a drop of 400 million DM. The decline was attributed to extraordinary write-offs of about 600 million DM, which Siemens was forced to make in the United States.

Like Ericsson, Siemens has invested heavily in the U.S., not only in telecommunications but also in other business areas. The entire Siemens U.S. operations amount to 5.7 billion DM, just about 20 billion kronor. And these operations are running at a loss of 381 million DM, almost 1.3 billion kronor.

But it is worth noting that Karlheinz Kaske, chairman of Siemens, said in an interview: "It is very important to continue with the American expansion. Siemens has 75 percent of its sales in Europe. The aim is to have the same level of sales on the other side of the Atlantic as over here." He indicated that the American operations would be up to about 30 billion kronor at the beginning of the nineties.

Siemens' continuing expansion to a great extent will be achieved through purchase of other companies. Kaske also explained that he was prepared to spend some 15 billion kronor over the coming year. And there is no question about his being able to do so.

This is clear from the interim yearend report. Net gain, after expenditures and taxes, amounted to about 1.4 billion DM.

Kaske does not hold out any particularly high hopes for 1989 either. He forecasts little change in sales and points out that the latest round of company buyouts will keep profits down in the short term. Moreover, he says, the purchase of the American office switching specialist Rolm was not expected to yield any profits over the next two years.

Similarly, Northern Telecom, the Canadian telecommunications concern, one of the largest suppliers of public switching on the American market, has tempered its earnings reports.

Northern registered a drop in net profit of 47 percent to USD 183.2 million, almost 1.15 billion kronor. Sales rose from 31 billion to 34 billion kronor.

The explanations for the decline given in the report are increased investments in product and market research as well as wider competition. To this can be added an extraordinary fourth-quarter writeoff of USD 200 million, about 1.3 billion kronor.

The Canadian giant has other problems and is currently restructuring to become more cost effective. More than 2,000 employees are expected to be laid off in the process.

Northern's chairman, Edmund Fitzgerald, does not expect a particularly strong 1989. The first quarter this year could be quite bad, with profits dropping one-third, compared with the 1988 period. But in the second half, Fitzgerald hopes, there could be an upturn so that overall annual earnings will be better than 1988.

In conclusion, we can be happy about good news from an Ericsson partner, Texas Instruments, the major U.S. chips manufacturer. Profits grew from USD 321 million, to 366 million, and sales rose USD 700 million, to USD 6.3 billion. The higher results were attributed to increased sales of memory chips.

The yearend reports are beginning to point to a mixed year for the major telecommunications companies. For many, it has been very demanding. It provides an interesting backdrop against which to measure Ericsson's results.



"Visual impression is not all. But it is realistic and important. Ericsson must be aware of it, if its products are to be seen in the right light," says Roland Lindhé.

# Designing for a common Ericsson profile

Roland Lindhé has an unusual profession. He is an industrial designer, with his own firm.

"At most, there are about 200 of us in all of Sweden doing this job," Lindhé explains. At Matsushita Electric in Japan, the parent company of Panasonic and Technics, there are just as many. This shows how the Japanese companies invest in industrial design as a means of increasing customers' knowledge about their products.

When Ericsson chooses to invest in industrial design, it does so in conjunction with Lindhé and his firm, Roland Lindhé Design AB, RLD.

Lindhé's company does not work with consumer products, such as household articles or clothing. In this area, there are a number of noted designers whose names are imprinted on their products or on labels attached to the clothing.

"We have a more anonymous approach," says Lindhé. "We are not artists who work for ourselves. Our task is not to come up with a design that end users associate with us but rather we

work with companies that manufacture products."

So, last year when an international jury awarded Ericsson the so-called IF plaque for the DIALOG 2000 family of telephone apparatus, it was Ericsson, in the first place, that got recognition and outside publicity for the products. But it was RLD that did the design.

"That's the way it should be," says Lindhé. "Industrial design does not have to do with putting the designer's personal imprint on the products. Instead, we want to produce a color and form language that coordinate Ericsson's products and that will be a launching pad for future generations of products."

DIALOG 2000 and even the mobile telephone design for which Ericsson won the Remarkable Swedish Form designation in 1987, are examples of re-



A new telephone model is born. Roland Lindhé discusses the shape of a new telephone with his colleagues, Hans Strand and Per Börjesson. Per, right, is the figure behind design of Ericsson's award-winning HotLine, seen on the poster in the background.

warding product designs. But, naturally, not all products within Ericsson fall into this category. Several product areas disappeared when the office equipment and data division in the former Ericsson Information Systems was sold.

"But there are many other product areas within Ericsson that call for design commitment," says Lindhé. "For example, we have worked on the operator position of the mobile GIRAFFE radar and we shall be moving ahead on housing for power units."

When we speak about Ericsson's commitment to design, Lindhé points out, there is a lot to be done since one is only at the beginning stage. But now there is a clear desire to go through with it.

There are many products in which Ericsson has invested in design," says Lindhé. "But one cannot really say that there has been a conscious approach to the design the way there was in the planned development of the product. In the long run, it has actually been the case that design of certain products has been nothing more than pure construction. There has been no common profile, but at most a uniform "smear" as far as design is concerned. Now, one must think, for example, about AXE and other equipment moving into the office setting. It certainly would not do to place steel cabinets around the world's most advanced telephone system."

In this area, the equipment should be complete. RLD and Ericsson Telecom's Design team have come a long way with a new generation of cabinets for AXE. We looked at models in a showroom at Ericsson in Telefonplan and at sketches and parts at RLD at Skomakargatan in the Old Town in Stockholm.

But it's like with next year's model of Volvo. Everyone knows it's on the way but Volvo has not released any picture

of the prototype. It's the same thing here. We saw no detailed pictures of what was in the works.

"What is so positive now," Lindhé explains, "is that we come in at an earlier stage than before. This is a necessity and a condition on our part. It is also challenging to move ahead with hidden "ungrateful" products, where one really has to do a thorough job. By thorough job, Lindhé means qualities in the products which influence our appreciation of them.

Realistic impressions

"Yes, visual impressions are important," notes Lindhé. "They may not be profound but they are realistic. Visual assessment can influence one's entire opinion of the company, and eventually the company's shares. For example, for

an Ericsson telephone — and, hence, Ericsson — to be taken seriously, we have placed small chunks of asphalt in the receiver so that it does not appear too flimsy, thereby giving the same impression of the company."

Advanced products often make special demands on designers. The designer must understand the technician's aims and the future development of the products. Here, Lindhé has ample experience from IBM's Nordic laboratory in Lidingö.

After a four-year course at Konstfack, Lindhé came to IBM in Lidingö in 1965 and became chief designer after some years. He remained there until 1972, after which he founded his own firm.

Lot to be learned

"One might possibly think that

IBM's products look a little sad," Lindhé says. "But the design approach is exemplary when it comes to devising and retaining a design expression."

It is in this field that Lindhé sees a great deal yet to be learned by Ericsson. "The problem for Ericsson when it comes to design is first of all twofold," notes Lindhé. "The first is that the products have so different origins and backgrounds. The other is that the base products have long sold themselves with their technical advantages."

But Lindhé believes these problems can be resolved. "At Ericsson, they have begun to realize that organizational and product changes increase the significance of qualities that come with the use and appearance of the entire product line," says Lindhé. "The company's identity changed considerably when the typewriter and personal computer divisions were sold. With the new direction, a more uniform product range has emerged, where it should be more natural to find a common design profile."

For the long term, that's what Ericsson's Design Program has as its goal.



New color for products and product logos are discussed. Roland Lindhé goes through suggestions with his colleagues.

## AXE makes the move from cellar to salon

Now, AXE has made the move from the cellar to the salon, and as such will be displayed at its best. A number of other Ericsson products have their natural place in the salon lineup and have always been satisfied with the way they were presented. Others have only just joined the band and are beginning to weigh their appearance.

We in Ericsson can indeed be proud about our technologically advanced products. But it is not enough that they be technologically advanced; they should also have an expression of form that projects and strengthens the positive aspects of Ericsson and Ericsson's products. This is the objective of Ericsson's Design Program.

There is a significant trend in telecommunications in that products are now moving from station and switching sites to the office itself. Technically, the fact that AXE stations in most instances can be delivered in modular sections is a reflection of Ericsson success in design. But, naturally, this demands a closer look at the knock-down approach, which should not only blend in with the office setting but should have color and shape as well as appearance that serve as a means of expressions in communications between Ericsson.

A wide range

Design has always been part and parcel of many Ericsson products; but now, there is a need to apply design to a wider range of products, some of which until now have been ignored.

Says Bror Lundquist, of the technical advisory staff in the corporate division of Ericsson: "What we are aiming for over the long run is that the company's products should give a uniform impression with regard to color, shape and handling. They should be seen as representing not only a specific product family and business area but rather as representing all of Ericsson. And, this, despite the fact that they originate from the different business areas."

The technical advisory unit, with representatives from the various business areas, works closely with Ericsson's design consultants, Roland Lindhé Design AB.

The goal here is for Ericsson's products and systems to be designed in such a way that they correspond to the customer's demand and expectations for technical, esthetic and ergonomic coordination. A key element in design is that it should give preference to qualities such as functional simplicity as well as esthetic form.

Design can be said to be the way in which to accomplish it all, from physical shape to presentation value — in brief, an image.

A good image reflects, among other things, that we have a thought out profile for our products. And a necessary requirement for achieving this profile is also an awareness of the impact of design.

Working in tandem

"With the rapid developments within the electronic industry, there is an imminent risk that products and systems will improve technologically with little regard for design," says Lundquist. "But if the use of technologically advanced products is impeded by faulty design, then this poses a problem that can seldom be resolved at a later stage."

In the same way, it is equally difficult to correct a misconception of a product if that misconception arises from the fact that the design did not mesh with the technological aspects.

For this reason, Ericsson develops its products and systems working closely in tandem with designers and specialists in product development, market research and production.

Cooperation is of utmost importance. It is essential that products and systems be harmonized so that they give a unique impression of Ericsson as a supplier of high-technology products and systems based on solid know-how and an awareness of users' needs. Moreover, cooperation is also important since products and systems are undergoing constant simplification and rationalization and are being hooked up to new and even more advanced products and systems.

Ericsson is conscious of design. But we do not have our own designers. Instead, for a long time now, Roland Lindhé AB has been filling that role, admirably and successfully.

## Lars Berg, head of Cables and Network

# Practical teamwork the most important

Now that Magnus Lemmel is leaving as Market Coordinator in Ericsson and is going to head the Federation of Swedish Industries, two important moves are taking place within the company: Björn Linton, head of the Network Engineering Business Area will replace Lemmel and Lars Berg, head of Cables, will be taking on the added position of head of Network Engineering. But who is Lars Berg, the 41-year-old who now has the distinction of a double command in the Ericsson concern? What is his background and how does he see the future for his business areas?

There is nothing unusual about Cables and Network Engineering headed by the same man, he says. "There are strong interacting elements between the two," he notes. "For Cables, Network Engineering is a major internal customer and the main telecable outlet to the world market. For Network, Cables is undoubtedly the largest component in the bulk of network projects. We are confident that we can have increased clout through greater collaboration between the two business areas."

Berg is well familiar with his new business area, having been a member of the ENS, Ericsson Network Engineering, board.

### Reduced in Size

Both Cable and Network have gone through restructuring recently. "To some extent, they have been reduced in size," says Berg. The American realities of 1988 and the declining market for cable shrank the business area's turnover by almost a quarter. Network has just shed its Sverige division which, at the turn of the year, joined the newly created Ericsson Sverige AB. Since then, the two

business areas are running in a far more decentralized fashion. At Cables, we have many independent units, our factories are, in many ways, self-sufficient on the home markets. Network is divided into three independent regions — one for the Far East, an Italian "link" that extends into North Africa as well as handling exports to the Middle East, directed from Sweden.

### Overseas

It was only natural that Lars Berg should take over from Björn Linton. He is not a specialized "cableman" but a more allround person, who works with several business areas in the group, and most of the time overseas.

This is a profile that becomes Network, which is currently involved in assembling products and knowhow packages from different parts of the company and selling them abroad.

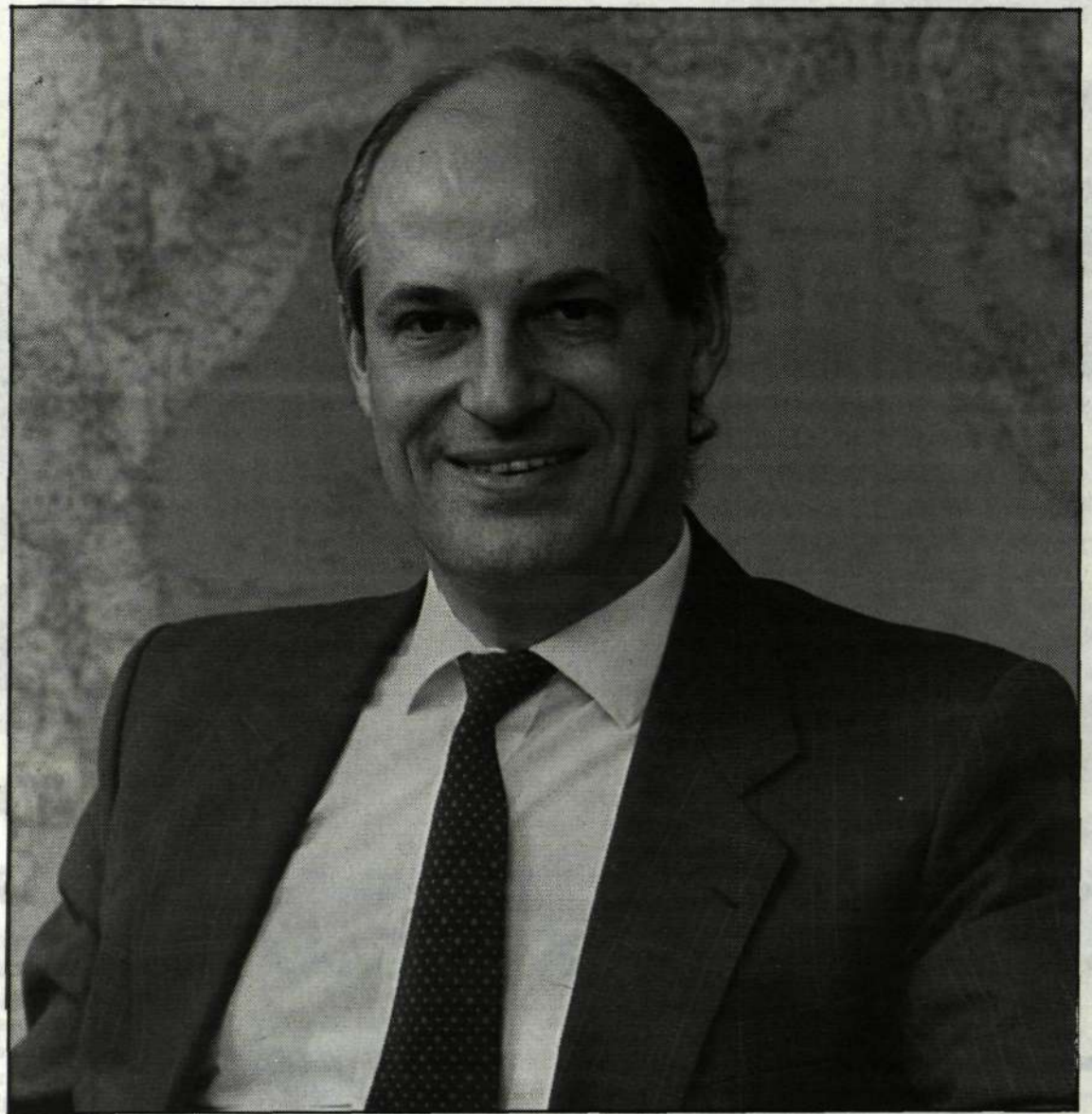
Berg, who graduated from the Gothenburg Institute of Economics, came to Ericsson in 1970, where he began dealing with economic issues in Argentina.

"I enjoyed being in Argentina," he says, recalling that already after six months he was invited to become economic chief for Colombia. "I was 23 years old then, and what a challenge! It was a company with 1,000 employees and a 40-man economics department." He stayed there for four and a half years.

At the end of 1975, Berg moved to Mexico as economic chief. It was a mixed group, among them Latincasa. "It was a rewarding period, during which I went through the entire procedure for introducing our company on the stock exchange," he recalls.

He stayed in Mexico for five years "and then I began to realize that it was time to return to Sweden."

Ericsson leadership was not too happy about that, and it was not long before Berg was asked to head company operations in Venezuela. "It was indeed an exciting job to head a company that was involved in telephone stations," he says. "I



Lars Berg, head of Business Area Cables, and in addition, Network Engineering, in his new milieu.

took a one-week crash course in AXE and then we left for Venezuela. We stayed there for four years.

### Home again

Fourteen years — and three children born — in Latin America, and now home again. Berg learned to be result-oriented abroad and it was with relish that he took on the job in July 1984 of starting a new unit in Sweden for Ericsson Radio Systems, an organizational and marketing channel for, among other things, mobile telephone sales.

"It was no easy task in the old homeland," he says. "It was tough going for results in a short time."

But his stint did not last all that long. After 15 months, he was called to head Cables Business Area when Jan Stenberg took over Public Telecommunications.

Experience within Ericsson's different business areas, cost consciousness, a knowledge of languages, working overseas and a good rapport with people are only some of the qualities that Berg brings to his role as double chief.

### Unusual leader

"When you have been overseas for as long as I have been, you get a good overview of the corporation. One meets many people on the move, often under some of the most stressing conditions that being abroad entails," Berg says.

With his economic background, Berg is a relatively unusual leader in a technology-dominated Ericsson. How does he feel about that?

"It's working out just fine as the company changes. But there are times when I felt I wanted to discuss detailed issues. But then I realized

there is a wealth of knowledge to be shared in the company."

The question that naturally arises, from both sides of the labor fence, is whether Cables and Network should come together. To that Berg responds:

"I have an undramatic view of the question. I see our role like this, we have Selga, our large electrical wholesaler, and TVAB, which produces car cabling. This, we have drawn a circle around and called Business Area Cables. On the other hand, we have Business Area Network."

"My view instead is that we have three different business aspects, cable, net and signal, each of which should be developed along its own lines. If we draw a ring around everything and call it a business area or, for that matter, two business areas, it would be basically uninteresting, as long as we realize that they are different operations with different problems and different markets. Nobody should dream of coming up with private companies within network or cable."

"Rather the question is how best can we work to develop them. There is no denying the fact that I am responsible for both. I do wear both hats when I function within marketing and directing."

What Berg is saying is that time will tell. It is more a practical question of how he and his closest collaborators can best work together.

Asked if Cables and Network are so-called core business, that is strategic entities for the company, Berg replies:

"Yes, I think so. Telenet and its accompanying products is a core business. We have an entire pro-

duct range, from telephone apparatus through cable and telephone stations. We are part of Network projections, we take responsibility for seeing them through in many countries, it is a service for our traditional telephone customers that binds together a complete ready-made package."

### 1988, a good year

Both Network and Cables can look back at a healthy 1988. Cables has had good sales and expects to show good results. Latin America has been exceptionally good. Network has received a large order, which promises a rewarding 1989, and has made headway in England, Berg says.

"In 1989, American cable will be off our books and as such we can expect an even better year. Above all, I must stress, that these two business areas have traditionally had good results and have never been crisis areas within Ericsson," Berg affirms.

He also feels that for the future Cables and Network complement each other geographically. Cables is stronger in the Western Hemisphere and Latin America while Network is solidly established in the Near and Far East. "Here we have synergy effect to develop. The two business areas can help each other to win business," Berg notes.

"Above all, I look forward to the extent that we are more open with the two business areas, to the extent that we are more open with each other, that we confer more and that we seek common ground for increasing our total capacity," Berg concludes.

Mats Hallvarsson

# We are building a bridge across the Atlantic

In the United States and Sweden, technicians are working side by side to combine two systems in the MD110 into one.

The finished product will be put into operation in the last phase of the University of Massachusetts (U. of Mass.) in mid-1990. At the same time, the system will be introduced on the world market.

MD110 appears today in two system variations, one for the American market and one for the rest of the world. Since telecommunications services are becoming more and more similar around the globe, it was decided, already at the end of 1987, to combine the two systems into one.

"With this move, we can be more effective in our development and can more rapidly provide the functions that the market demands, thereby making the MD110 system even better," says Lars Boman, technical chief for the Communications Systems Division.

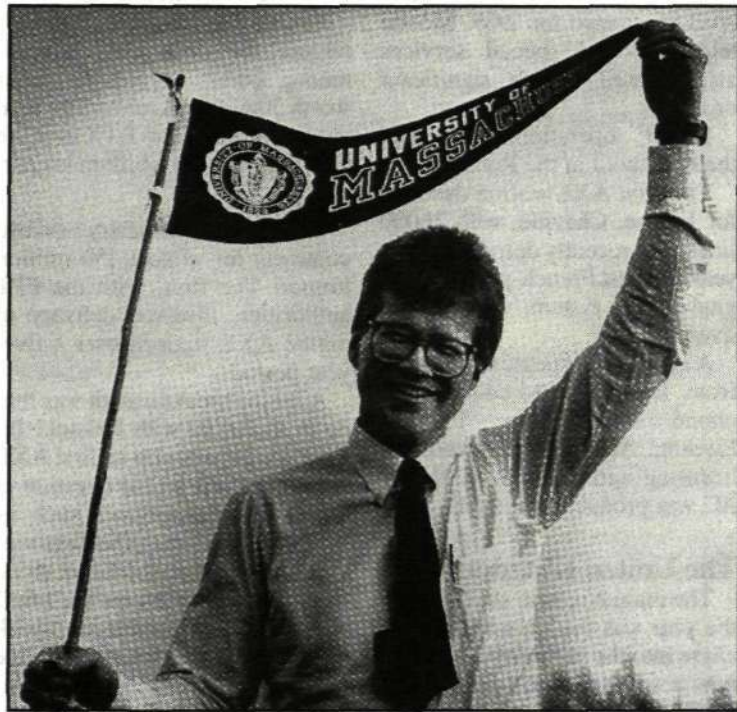
"U. of Mass. was a solid business that expanded when the project began. It is always more fun to work with tough timetables when we know from the start that we have a dedicated customer that is waiting for product," Boman adds.

Merging the MD110 into one system also means a major upheaval for the technical organizations. Previously, Sweden and America were responsible for their own systems. Now a common system is being built in which the U.S. has a hand in data communications, telephone functions and telephone support services in external data. Sweden will be responsible for the core system, connection services, network functioning and ISDN.

## A major change

"We are moving on two projects today for U. of Mass. One, the merging of MD110 into a system with the new functions that the university needs; the other, to find the best means of cooperation and to come up with a well-functioning organization for the project," says Boman.

"It is a major change that demands



Lars Boman, technical chief in the Communications Systems Division, waves the flag for the University of Massachusetts. The two systems in MD110 will be merged into one since tele services are now being unified around the world.

a lot of attention. We now have to write our reports in English and we travel very often between the States and Sweden to resolve various problems. With luck, we go there in the winter and they come here in the summer," says Boman with a grin.

The use of MEMO has increased since the project began, which means that the time difference between the U.S. and Sweden no longer exists. MEMO also means that traveling can be limited to the really necessary personal contacts.

The organization is working on the idea of an "MD110 Engineering World Team," a globe-circling organization for MD110 development. It is already in Australia, Europe and the U.S. and MD110 development goes on 24 hours a day. Those working on the project have set aside other tasks and commitments so that the new sharing of responsibilities should function.

All construction should be finished by summer 1989. After that, a test run would take place.

By the end of 1989, we hope to install the new MD110 system in Ericsson's own telenet (LMCOM) to assure us that operational stability is as good as we and our customers expect," Boman says.

The University of Massachusetts is the largest PBX business the world has ever seen. The order involves 30,000 lines, which links the university with institutions in Boston, Amherst and Worcester.

## Kept to timetable

In March 1990, the system will be tested in a real customer setting as a preparation for U. of Mass.

"No major technical problem has presented itself up to now, and we have kept to our timetable. Everybody working on the project has given fantastic input and I am confident for the future," Boman says.

MD110 is in full development. The project, in which the U. of Mass. will be one of the first deliveries, gives us an MD110 for all markets.

"But we are already preparing the next project, which I hope we can launch immediately after the summer," Boman asserts.

Text: Lena Öberg

Photo: Birgitta Rydbeck

## More and more difficult to recruit married staff for overseas jobs

It is becoming more and more difficult to woo Ericsson men into overseas jobs. And the repercussions are being felt in several Swedish companies with operations abroad.

"The more qualified the men we want to post overseas, the more qualified professions their wives often have," says Bo Erikson in the personnel department unit for overseas staff.

Often, the accompanying wife tries to take a leave of absence from her job, but she cannot have a leave for as long as she likes. And should there be a risk that she could lose her job in Sweden, she has little choice but to return home.

"It happens that the entire family returns home because of the wife's job situation or that the husband over a shorter period is alone abroad," says Erikson.

But at the same time it should be noted that Ericsson, in numerous cases, has employed wives of Ericsson men when the family comes home and when the wife has no job to return to — provided, of course, that she is competent to fill a job opening.

## Seeing the problems

Ulla Carlberger, who works in the corporate staff preparing people for overseas service, wants to emphasize the opportunities that an overseas posting offers.

"One should see the opportunities, but one should also be aware that there are problems," she cautions, citing the following instance. "The wife in a young family can, in this way, have the possibility of being with her children throughout their studies, she can improve her knowledge of foreign languages or study at university or other institutions in the foreign country."

In Sweden, there is a law that permits a leave of absence for studies. "But," Ulla stresses, "it does not cover correspondence courses; one has to be registered with a school."

Examples of schools that allow external studies during an overseas posting are the state schools for adults and the universities of Uppsala and

Lund, the latter through Hermods.

In the beginning, many staffers are positive about going overseas, but it means a lot of upheaval, Ulla warns. "France, a case in point, involves for many both a language and cultural barrier. Many have said no because their wives or partners do not want to accompany them."

## Need for support

When the man is offered an overseas posting, it often involves a career move. He advances in his job and it very often is a case of tough project work under time pressure, which necessitates his doing a lot of overtime. Back home in Sweden his wife had her own job. Now she has to live through her husband — whom she hardly ever sees.

Since wives most often do not automatically receive a work permit (England is one of the few exceptions), she has to find something to do.

"Many of the wives see this as a chance to be home with their children, who often need support in adapting to new schools and new playmates," Ulla points out.

Beyond being home with the children or studying externally, as cited above, there are other things that one can do, as Ulla indicates. "In many countries, there are opportunities for studying locally, working independently or cultivating one's own interests."

As an example of this, Ulla cites the possibilities of writing, handicrafts, weaving or painting for those who are artistically inclined. Other pursuits could take the form of golf, tennis, gymnastics, bridge, etc.

Children need to continue with their studies in Swedish, which the Swedish education authorities would subsidize provided there are at least five to six children on site. A housewife can conduct these lessons.

"To some extent, the country that one is posted to would determine what one could do," says Ulla, stressing the point that "one should see the positive experiences that come with an overseas posting."

Alf Öst

## SHARE TRADING

Ericsson's share trading (B-Free), at the beginning of March, could be said to have reached a leveling off point at about 400 kronor, following publication of the positive interim yearend earnings report about a month ago.

The professional investors feel

that they have a good grip on the company's profit potential and do not expect any surprises, positive or negative. As a result, many of them feel that the Ericsson shares will soon follow the market's overall development.

Ericsson is now a highly valued

company with a price earnings ratio around 17, compared with the Stockholm Exchange industrials, which are hovering around 13.

This means that the market has already absorbed part of the expected profit increase for 1989, an increase that the Ericsson leadership has already indicated. What is really needed now is an unexpected burst of positive news for trading to take off again.

## Switzerland chooses Ericsson's digital mobile telephone system

Ericsson-Ascom has been chosen by the Swiss PTT to supply the new pan-European mobile telephone system GSM (Groupe Spéciale Mobile) in Switzerland. In 1988, both Britain and France chose Ericsson as supplier of their digital mobile telephone system.

The Swiss system will in-

itially cover Geneva and its surroundings. The Ericsson supply includes 1 AXE Mobile Telephone Exchange, 1 Base Station Controller developed jointly by Ericsson and Matra, and 2 Radio Base Stations. The system will be operational in October 1991, with a capacity of 5,000 subscribers.

## Business Deals Boost ETX Orders

Last year was a successful one for Ericsson Telecom. Operations are expanding and incoming orders have risen considerably, compared with 1987. The following excerpt from *Switchen* gives an overview of business deals concluded during the year.

### "Triple A"

The bulk of business for the Asia, Africa and Latin American regions was conducted in Mexico and China.

In Mexico, a billion-kronor order in February was followed later in the year by one for 1.5 billion. In addition, there was an increase in orders from Colombia.

Subsidiaries in Brazil and Mexico were very successful in Export operations within Latin America.

With two large orders from China, for 438 million and 380 million kronor, Ericsson positioned itself as the leading supplier of telecommunications equipment to China, including mobile telephones.

In the Gulf, a Saudi Arabian

order amounted to 525 million kronor. Apart from the large switching order, there was also a large volume order for transmission equipment. Over a quarter of a century, Ericsson has built up the Saudi network, considered one of the most advanced in the world.

In North Africa, there were orders from Algeria and Tunisia, as well as an accord on local manufacture in Algeria.

### Europe and Oceania

In Australia, a yearend order for 740 million kronor was received, covering AXE equipment, technical maintenance and expansion of the mobile network. A bonus order was awarded for on time delivery.

In Europe, long and patient work resulted in a first order for 166 million kronor in Greece, where manufacturing license agreement was signed with a local company.

In the Eastern bloc, AXE technology made its debut in Hungary, while making a breakthrough into the Soviet Union by way of Nicola Tesa, a licensed operation in Yugoslavia.

Deliveries in Spain rose to 700,000 lines for the year, from the

earlier 200,000. One million lines will be delivered in 1989.

In the Netherlands, 400,000 lines were delivered, and the same level is planned for 1989. Mobile telephone and special services also figured among significant orders.

Italian operations extended their foothold in the Rome area.

The first AXE station destined for France, Chaville, with 21,000 lines, was recently delivered. This year, the first French-produced digital AXE system will be delivered.

A small but strategic order came from Ireland, a so-called free-phone station, for Telecom Eireann. And in Switzerland, the licensing agreement with Hasler AG was productive as ever.

### The United Kingdom

The main business event during the year was the Thorn-Emi purchase into the subsidiary, which is now a wholly owned unit within ETX.

Racal ordered 10 new AXE stations for mobile telephones (known as MTX) as well as four transit stations, for a total of 450 million kronor. Moreover, Racal signed a letter of intent worth 100 million kronor for part of a digital system that will form part of the common European mobile telephone system, which is expected to come on stream in 1991 and which will permit use of the same mobile telephone throughout Europe.

The first AXE station for Mercury Communications was sold in 1989, a digital international station for some 63 million kronor.

British Telecom, the country's largest tele company, placed, among others, a strategic order worth 50 million kronor. The total value of the order to ETX over the year would reach a billion kronor.

### Scandinavia

The Finnish subsidiary won two contracts for almost 150 million kronor. The first, with the PTT authorities, involved delivery of digital AXE stations over a five-year period.

A major breakthrough was made in an accord with Helsinki Telephone, in part with its first AXE station, in part on the question of new advanced services such as ISDN and BGS in the said station.

In Denmark, in the fall of 1988, there was an agreement with LMD with KTAS in Copenhagen, Jydsk Telephone, Fyns Telephone, Tele Sonderjylland and Statens Teletjänst. The agreement, in the current delivery contract, calls for continued deliveries of digital AXE centrals for a total value of 900 million kronor over a six-year period starting in 1990. Deliveries include new foundations such as BGS and ISDN, as well as possibilities for IN functions (Intelligence Network). In addition, Statens Teletjänst has ordered an OPS (operator subsystem) station for Copenhagen.

On the home front in Sweden, delivery deadlines are being met.

An OPE station in Stockholm city has been implemented and expansion of the Hammarby international station as well as a total project in Uppsala with both switching and transmission have been delivered. There is an agreement in Sweden to switch to APZ 212 processors in MTX stations. This is needed to keep up with the tremendous growth of subscribers,

As for the two mobile systems, Ericsson has 100 percent of the Nordic market on 450 MHz, as well as the 900 system in Norway, Denmark and Sweden.

### The United States

A total of 66 AXE stations have been installed in the United States. Some 40 of them are local, transit or STP stations while the remainder are for mobile telephones.

During the year, a contract for 66 million kronor was received from MCI Telecommunications Corporation for delivery of three digital AXE stations. These will serve as a gateway for MCI's international network.

Bell South ordered two STP stations for Nashville and Birmingham, Nynex ordered a further 6,000 lines for IMAS, and the Idaho project was expanded with some thousand lines by US West.

Moreover, orders amounting to more than 300 million kronor were placed for AXE stations that would expand the mobile telephone system in both the United States and Canada.

## Ericsson Review — a source for knowledge about the company

Read *Ericsson Review*, editor Göran Norrman challenges us. You will find in it the results of the technical work that is being done in the entire company. A wide circle of readers, including employees, customers, outside opinion makers and technology students — among them Swedes, Frenchmen, Englishmen and Spaniards — use it as a source of information.

Through *Ericsson Review*, a large circle of people the world over get an overall picture of the group's technical operations. It complements the picture of Ericsson as a world leader in its sphere of operations — modern high technology. The publication's reputation lies in its factual reporting and trustworthiness.

It presents the most important side of the group's operations. Developments can be gauged from articles about areas where development is moving at a fast pace. Moreover, the magazine reflects promptly.

Norrman, who has been editor of *Ericsson Review* since October 1986, notes that articles in the publication are often complemented with detailed informa-

tion in the form of charts and diagrams.

In the main, it is mostly the group's products, systems and services that are presented; our key operations, core business, and corporate philosophy. The results of technical innovations for the whole group, he adds.

### Product use

The thinking behind this editorial approach is that product news should be presented with the possibilities for which the products were designed and not so much for how detailed they are conceived.

Articles also cover product use, manufacture and maintenance of installations, as well as experiences in manufacturing and customer attitudes.

Reports on the progress of research and development, about methods, production and development of unfinished products complement the picture of Ericsson, an Ericsson at the forefront of world development.

Articles, portraying the latest informative aspects of the Ericsson group's standing as well as future possibilities in the field of high technology, serve as a means of arousing reader interest and desire to learn more.

The readership of *Ericsson Review* extends over a broad range. In the first place, the editorial contents are aimed at potential purchasers, customers as



Read *Ericsson Review*, Göran Norrman exhorts.

well as users of Ericsson products.

But the knowledge derived therein is no less widely disseminated within the company. Read the *Review*, Norrman exhorts. There you will find an inexhaustible source for knowledge about the company's operations, accomplishments that should be a

joy to be shared by all who work for Ericsson.

The *Review* is equally important for people who work in marketing and training. And it is no less so for those who influence the buying of systems, products and services.

Externally, the *Review* is a valuable source for opinion makers, politicians, technical

from the *Review* for use in their internal information and training programs, Norrman says. It has even occurred that authors of books dealing with technical developments have cited articles from *Ericsson Review*.

Every business areas has the option of reprinting articles that appear in the *Review* and that are relevant to specific business area. In marketing and training it is particularly helpful. It is inexpensive; the overhead costs for publication are low.

### Ideal news conduit

It is not worth it for management to be "stingy" when it comes to distributing the *Review*, Norrman stresses. It is up to the business areas to determine who should be receiving the *Review*. More business areas should see to the distribution of the publication among their staff, Norrman says.

*Ericsson Review* is distributed to libraries, schools, private individuals, large companies, such as SJ and TELI, Swedish computer companies and consulting firms.

Effective cooperation with the different business areas is, without doubt, of utmost importance if the *Review* is to maintain its high quality. "There is lot that we can improve," Norrman concludes.

Text: Inger Bengtsson  
Photo: Bo Binette

### Cited by authors

It is not unusual for noted companies to request articles