

# Contact

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PHOTO: LARS ÅSTRÖM

## A legend of continuity after 100 years in Mexico

Ericsson is approaching 100 years in Mexico, a century rich in tradition and exciting history. But it is the future that holds even more excitement. We already have 60 percent of the country's telephone network. Ericsson has just received an order for 670 million kronor for an advanced digital service network that will serve Mexico's banks, its national administration and large companies.

This is not simply a huge order for the country which, for Ericsson, constitutes the coordination for large parts of Latin America: it is also a brilliant example of group cooperation for supply of AXE, transmission, minilinks, power and cooling. The young lady in the photo above, in Ericsson's large Mexican factory, has every reason to be positive about the future. Report on pages 4-5.

### Ericsson shares seesaw as markets tumble

The upheaval on the world's stock markets on Monday, October 16, affected Ericsson shares considerably just for a day. On the Monday, shares on the Stockholm Stock Exchange fell 68 kronor to just over 750. But already on Tuesday, they climbed back to about 780 kronor. Both the fall and the subsequent rise for Ericsson shares reflected the broad swings on the Stockholm bourse.

### AXE switches for Bell unit

Ericsson has signed a five-year contract with Southwestern Bell Telephone (SWBT) for the purchase of AXE digital switches. Ericsson will be the primary supplier of the switches which SWBT will install in small and medium-sized cities it serves in Arkansas, Kansas, Missouri, Oklahoma and Texas. The switches will provide higher quality service for those customers currently being served by the older technology that is being replaced.



### APZ 212 — a memorable occasion

It was a memorable occasion when the 500th APZ 212 processor was delivered to British Telecom. Behind the success for Ericsson Telecomm in Britain was a huge investment in local manufacture of AXE for UKC (BT local). Page 3.



### Premiere in Älvsjö

About 20,000 people visited the first specialized telecommunications fair, Telecomm 89, in Älvsjö. Ericsson had an open stand with some 20 guides. Ericsson staff was also active as seminar leaders. Page 8.



### Going underground

Now Ericsson is going underground, in a manner of speaking. The MD110, which has been delivered to the English coal mines in Sharleston, is an exemplary underground communications and security system. Moreover, it links simultaneously an overhead network with an underground system. Center.

Modernizing with ERIPAX • Page 2





Today's Ericsson has strong historical links to markets and countries all over the world.

Among these is Mexico, where L.M. Ericsson was registered as a company name back in 1904. Since then, we have played a significant role in Mexico's development from a feudal agrarian economy to an industrial nation.

A few generations of Swedish Ericsson employees also have fond memories of pioneer achievements in the construction and modernization of Mexico's telecommunications network.

Thus, it is additionally rewarding to note that in the country where a telephone is often referred to as "an Ericsson" Mexico Ericsson will be supplying a digital service network worth some 670 million kronor.

The order is significant in many ways. The value and scope of the order are certainly of great worth. But what I think of in the first place is our customer, the Mexican telecommunications authority, its profound trust in us and the legislative action that played a key role in making the order a reality.

Our strong link to Mexico's social and economic life have made itself felt even more so with several recent events. Not least among these was when the ravaging earthquake of 1985 knocked out the telephone system. Ericsson's input in connection with the reconstruction was rewarded with a newly declared prize from the Mexican president.

We shall now demonstrate that we are worthy of the trust that has been placed in us — then as now, in conjunction with the current order. The order is a remarkable example of close cooperation among the different business areas. Here, it is definitely not a question of a business deal between the customer Telmex and a particular Ericsson company or business area. The deal was concluded between Telmex and Ericsson.

Moreover, the transaction is a good example of joint work among Ericsson companies in different countries. The negotiations were coordinated by our Mexican company, TIM.

We have earned a place for ourselves in Mexico's history through an active role in the country's development toward an industrial nation. Now, we shall continue to contribute toward Mexico's further development as a future information society.

*Björn Svedberg*  
Björn Svedberg

## 50 million investment in ERIPAX network

# Stockholm Stock Exchange is world's most modern

Sweden has seen a rapid expansion in stock market trading over the last eight years. The Stockholm Stock Exchange has had a starring role, surpassed only by the Hong Kong market. During the period 1980-1987, trading volume increased twentyfold and the stock value rose 75 percent.

The Stockholm bourse has risen to prominence, from a relatively inconspicuous position in a corner of Europe to one of the top 15 most active exchanges in the world.

"Growth in the share capital market during the eighties has been phenomenal, with stock quotations and volume rising at a pace that no-one could foresee just a few years ago," says Bengt Rydén, director of the exchange.

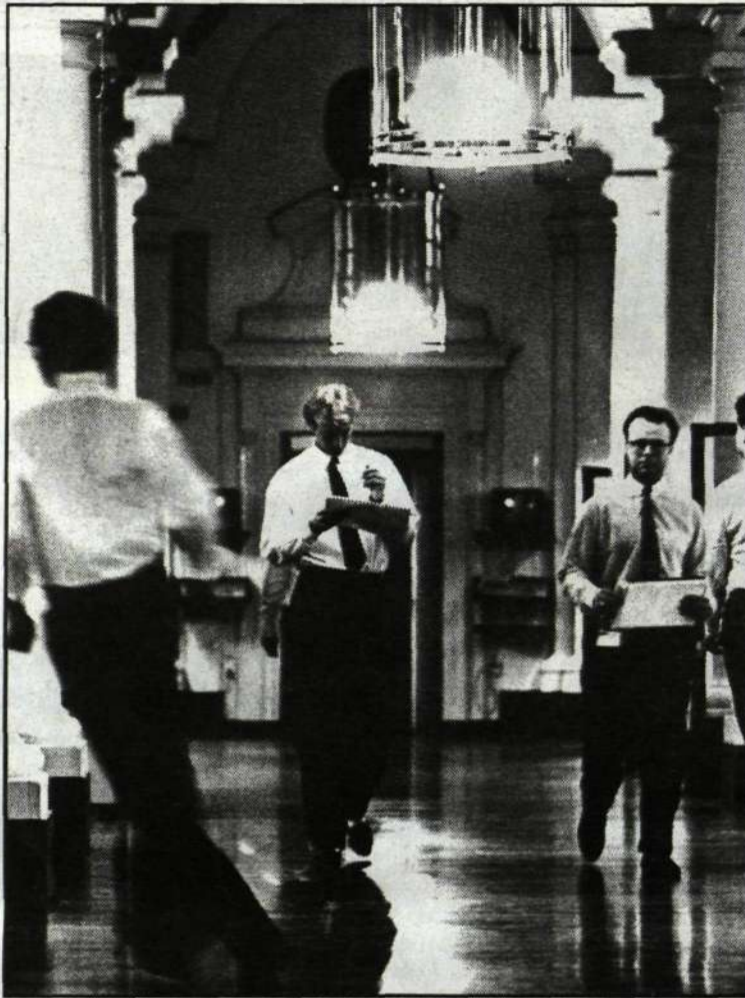
As a result of this growth, the Stockholm bourse is investing 50 million kronor over a five-year period in a technological modernisation program that will cater to both larger and small investors. It is a relatively small cost compared with investments made on other exchanges around the world.

"We took a major step 70 years ago when we set up a rather simple system on the trading floor," says Leif Vindevåg, spokesman for the bourse. "Our ongoing modernisation program has been envisaged to cope with the volume increase in the eighties. The old trading system, clearly and simply, has to be replaced."

### World's quietest

To date, there are 160 companies registered on the Stockholm bourse and an additional 70 on the over-the-counter (OTC) market, which was established in 1982. Trades are placed with desk-mounted screens and a bell signal indicates that buy and sale bids are completed. The working ambiance is quiet, compared with, for example, the trading floor of the New York Stock Exchange. The Stockholm bourse has been called "the world's quietest" ever since the first trading system with electric buttons and bell signal was introduced 70 years ago.

Hence, the new technology will not involve the same drastic changes that have taken place on other stock markets.



The goal of the Stockholm bourse is to be the world's leading exchange for Swedish commercial paper and one of Europe's foremost national marketplaces. At the end of 1988, the exchange had 30 members, of which 15 were brokerage firms and 14 were banks.

The core of the new technology is an automated trading system for shares, premium bonds, convertibles and interest-bearing bonds, which is known as the Stockholm Automated Exchange (SAX).

SAX will give exchange members access to several bid services in interplay with others. Work stations are designed on the window technology system and traders, for example, can monitor a screen with continuous update on market information while at the same time using other windows to transact business.

SAX delivers information in real time on what transpires in the market in the form of order books, market information, closings, index and different reports.

The SAX system is driven by a central Tandemdator, which is connected to the work stations on the

trading floor and the member firms' offices via ERIPAX from Ericsson Business Communications. With its packet switching system, ERIPAX forms the backbone of the bourse's data communications and can, in the future, be expanded endlessly.

The central data system of banks and brokerage houses can be directly connected with SAX.

The main aim of ERIPAX is to secure a communication system with high reliability between brokers' terminals and the bourse's base data system.

In a data system of this type, unauthorized access could pose constant problems. The ERIPAX system conforms to the X.25 standard with high-level specifications that provide security against hackers. In a system like SAX, with work stations located in different

geographic areas, the main problem is how does one approve a person who wants to use the system.

The Stockholm bourse resolved the issue with a "smart card." Each approved user has his own smart card which must be inserted in a reader that is hooked up to the work station.

"At the same time that we are making it impossible for unauthorized access, we are also making it possible to track all transactions," explains Anders Sehlin, head of data operations at the Stockholm Exchange. "We can see not only which brokerage is carrying out a certain transaction but also which specific individual is doing it."

Brokers are delighted with the new system since they get full access to updated information, thanks to the bourse's programmed information terminals. In Sweden, there are already 2,200 terminals in place. But also, in all of Europe, one can follow trading trends on the Swedish financial market second by second. The Stockholm exchange's satellite-based information system, SIX, provides information on screens all around Europe.

### Wide choice of data

With its X.25 compliance, the ERIPAX network makes for a broad assortment of data, all the more so since the bourse's future needs in data processing and communications are expected to expand. A key request specified by the bourse was for the possibility of having "broadcasting" of information simultaneously to all end-user PC-based work stations. This so as to secure rapid and accurate diffusion of information concerning order and confirmation. Access to "broadcasting" was the main reason for choosing ERIPAX. Another reason was the experience on the London international stock exchange where an ERIPAX network has been in operation since 1986.

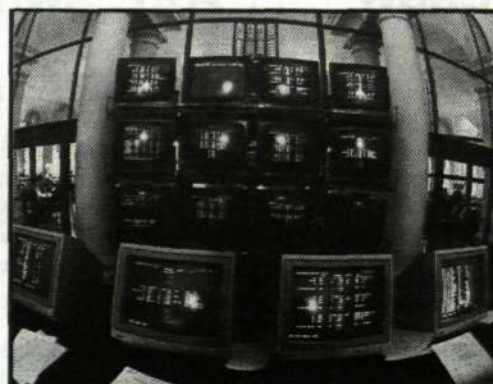
Jointly, SAX and SIX represent the most advanced in modern information and communications technology in the stock market world.

"Our goal is to be the world's best national bourse," Rydén says.

Text: Lena Öberg  
Photos: Lars Falck



Stortorget, in Old Town, has always been a trading center. In 1768-1778, Börshuset, the exchange, was built, designed by Eric Palmstedt.



Since 1988, the Stockholm bourse has been developing new data-based information services. ERIPAX plays a central role in this.



Traders sit at desk-mounted screens and a bell signal indicates that a buy and sell bid has been concluded.



# In place in time

It was an occasion that merited something special when the 500th APZ 212 processor was delivered to British Telecom.

Behind the success for Ericsson Telecom in Britain was a major investment in local manufacture of AXE in England in the first place for UKC (BT local).

Thanks to this investment, we were able to meet delivery of the two millionth line from the Scunthorpe plant to BT, and it was not at all unexpected that the 500th of our most powerful processors could take its place at BT.

Neatly packed and with perfect delivery timing, there it was — the 500th APZ 212 processor, which was delivered to British Telecom in Chelmsford, northeast of London.

And, naturally, the handing over was almost a royal event. BT's East Anglia district turned up with several of their top executives, led by Richard (Dick) Spanner.

"We are honoured to be chosen by Ericsson for this special delivery," says Spanner.

Shipping the APZ from the Älvsjö plant was a momentous occasion.

On the trip to England, was Leone Moroni, who works in testing at the Älvsjö factory. Leone had tested this very processor and, selected by his colleagues as their representative, he now had the opportunity to see his product received by the customer.

"WE at BT East Anglia are very

The processor arrived safely at British Telecom's Chelmsford station and lifting the equipment into the building went very smoothly.



happy with Ericsson as a business partner," affirms Dick Spanner, adding that "since the very start, we have seen many improvements at Ericsson and I feel that our collaboration has developed satisfactorily."

Irving Fuller, unit head for the digital equipment in Chelmsford, also felt that AXE functions very well, but he admitted: "We were doubtful at the beginning, first and foremost because Ericsson's equipment was different from what we were accustomed to, for example the connection contact in the circuit board."

Once you understand the differences, however, there is no doubt about what purposes the functions in AXE serve.

"No, we have been able to shed any earlier doubts we had for the stations are functioning fine," he says.

One detail that has been specially refined is precisely the connections, which facilitates the positioning of the cabinet. Since there is no need to enter

the rear of it, it can be placed against a wall, or back to back, which saves space.

Fuller appreciates the fact that we rallied our forces and did what we could to satisfy their demands, but he points out a detail that he would like to see improved — the cabinet doors in AXE.

But in general the people at BT are delighted with Ericsson as the supplier of their tele network. BT's customers are also satisfied with the service they get.

And they will be even happier yet when an AXE station with the advanced APZ 212 processor goes into operation.

The fact that BT has invested in such a powerful processor is a good indication just now of what investments it would make to supply its customers with sophisticated telecommunications services in the nineties.

Text and photos: Alf Öst

## OUTLOOK

BY MATS HALLVARSSON

Profits of close to 6 billion and sales of 60 billion in 1993! Is this really possible for Ericsson? Yes, indeed, says Credit Suisse First Boston, one of the largest American investment banks, in a recent report.

Few Ericsson employees have the chance to share in the views that foreign financial analysts have of Ericsson. The analyses reach only a very tight circle of investors.

Since so many Ericsson personnel are shareowners or convertible holders today, it could be interesting to look a little more closely at what the telecommunications experts think about the company.

Recently, the American investment bank Credit Suisse First Boston (CSFB) came out with its annual update of its financial analysis of Ericsson. It contains many interesting points most already known, but also some warnings.

The analysis was carried out totally independent of the company and it reflects in no way Ericsson's assessments. Figures, forecasts and estimations are entirely those of the analysts. Hence, it is very common to make forecasts for several years ahead even if there is a lot of uncertainty.

CSFB sees Ericsson's relative strength along the following lines:

- An increase in gains per share of 100 percent this year and 26 percent in 1990.
- A very strong market position. Ericsson has won market shares recently in all important business areas.
- Ericsson is a world leader in mobile telephony, the fastest-growing sector in telecommunications. Its joint cooperation with General Electric strengthens that position.
- Margins will continue to grow.
- A strong positive cash flow.
- Ericsson is used to competition, which all competitors with protected domestic markets are not.
- Telecommunications is a priority in the development of many countries.

Ericsson's risks are the following:

- The market is very competitive. Prices and profit margins in its branch are being squeezed in all markets.
- There is a danger of exaggerated expectations in Ericsson.

The company cannot continue to grow at the same rate as it has over the past two years. Growth is expected to level off at the beginning of the nineties. Siemens has had considerable success in the United States, making it the third largest supplier. Ericsson has

been only marginally successful. In total, Ericsson has lost some 50 million kronor in the U.S. this year.

CSFB estimates now that Ericsson's sales for this year will amount to 40 billion kronor, an increase of 26 percent. Operating profit, before writeoffs, could increase a hefty 61 percent to 43 billion kronor. That allows for a pretax profit of 93 percent to 3.5 billion kronor.

The analysis is optimistic about 1990. It foresees an additional increase in sales of more than 47 billion kronor. Net profit and gains per share should grow by 26 percent.

The challenge next year, according to CSFB, is to achieve success in the U.S. But it is still too early to draw any conclusions as to whether investments in the U.S. will be profitable or not. In Europe, there is also the threat of a head-on clash with Motorola in mobile telephony.

In the little longer term, CSFB sees continued growth of close to 30 percent up to and including 1993. Operating margins, profits after writeoffs in terms of percent of sales, could improve additionally from 9 to 11.5 percent in 1993.

That year, the company could have sales of 60 billion kronor, an operating profit of 7 billion and a pretax profit of 5.9 billion.

These exact figures appear very reassuring, give or take a few decimal points. But it is best not to take these forecasts too seriously, even if the American analysts are very well known.

Ericsson still has a painful memory of the bright forecasts which in the first half of the eighties led to a near crisis for the company. Satisfaction that it is going well for the company this year and that it looks good for next year too is well founded. But one cannot pick out the victors in advance in the increasingly competitive telecommunications markets in 1990.

The stock market crash in mid-October is a reminder that one cannot count one's chickens before they are hatched. In a single day, Ericsson shares fell 60-70 kronor, and this without any real global upheavals.

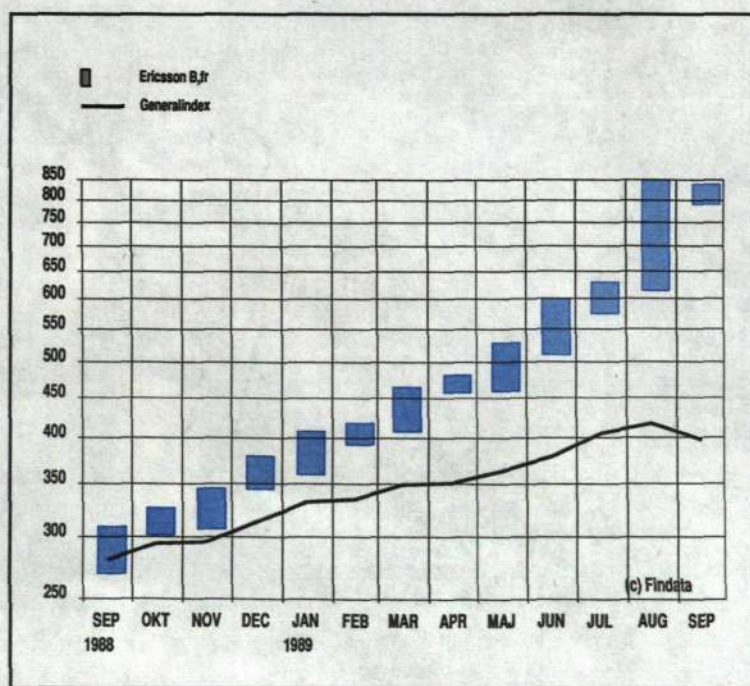
On stock markets around the world, feelings are often as decisive as the clever conclusions of the analysts. And the only safe forecast is that no forecast can accurately predict the future.

## SHARE TRADING

The steep drop on the world's stock markets on Monday, October 16, did not leave Ericsson stock untouched. Ericsson B-free shares on the Stockholm bourse fell in line with the general index, that is almost 7 percent. The dip came after a couple weeks of a steady rise to a level of 820-825 kronor, which put Ericsson in one of the top rankings on the bourse with a share price increase of 123 percent so far this year.

The majority of observers agree that the dramatic downturn on the market was not related to any sudden change in the outlook for world economy, or, for that matter, the Swedish economy. As such, there are no real underlying factors that would prompt Ericsson to change its outlook.

However, the downturn could be a hint that the brisk economic activity enjoyed for so many years was now at an ebb and that this must have some effects on the stock market. Both from a historic perspective and in comparison with other industrials on the Stockholm bourse, Ericsson shares were seen as being highly valued, though not with any alarming consequence. The p/e ratio of 17 was close to the industrials average of 16. A direct yield of 1.5 could be compared with the average of 2.5. The shares are still being recommended as a good buy by the majority of Swedish and foreign analysts.



### ERICSSON'S SHARES

	Mutual Fund		Share Savings Fund	
	Share Price (SEK)	Assets (MSEK)	Share Price (SEK)	Assets (MSEK)
31 Dec 1987	70	27,1	147	31,7
31 Dec 1988	135	52,2	343	56,0
31 Aug 1989	285	98,0	763	82,6
30 Sept 1989	284	94,5	765	79,6

In September, the assets of both funds were reduced slightly as result of the market downturn.

So far this year, withdrawals from the fund have reached 24.9 million

kronor in the share saving fund and 14.4 million in the mutual fund. Intake in the mutual fund during the same period amounted to 3.6 million kronor.





# Mineworkers' lifeline

Ericsson telephone lines have long since spanned the earth's surface. But in Yorkshire in England, they go deep underground. The coal mine in Sharleston, with maximum safety demands, has installed an MD110.

There are not many workplaces where good communications are more meaningful than in a coal mine. The coal miners often work in isolated shafts many kilometers underground, and it is not just production progress and questions about equipment that have to surface readily above ground. It can also be a call for help, when accidents occur.

The Sharleston coal mine, near Wakefield in Yorkshire's coal mining district in England, is somewhat larger than the normal mine, with its output of 1 million tons of coal per year. Here, communications cannot afford to break down. Should operations be halted for just an hour, it could mean a production loss of 200,000 kroner.

#### Rigid safety standards

The mine must, therefore, have a very secure communication system that allows flexibility to be

**In a coal mine, a phone can save a life**

adapted to both the general telephone network and the company's British Coals lines, as well as the communications network underground. And the safety standards are rigid, since the least spark can end in catastrophe.

The Sharleston coal mine already has a good underground network from the British firm NEI-DAC, specialists in such systems.

"That is our only means of communicating when underground, our lifeline. It is not like in a factory, where people can shout across the floor to each other," explains John Blackwood, systems engineer in the area.

The mine recently decided to tie in the underground network with an overhead network in a more effective way and with increased capacity, since the old switch will soon be obsolete after ten years. After looking at several alter-

natives, Sharleston settled on Ericsson MD110. An unusual choice, says Blackwood, since the electronic Ericsson switch has never been used together with an underground system such as the one Sharleston had.

#### Over a weekend

But Ericsson's unfamiliarity with this type of network was soon resolved working together with NEI-DAC. Several discussions laid the groundwork for a very successful "interface," that's to say match up. The entire system was prepared and tested above ground and installed and set into motion over a weekend. Naturally, there was some nervousness in the first few days, since the mine is so large. The most crucial connections lie 7 to 8 kilometers from the switch.

But everything went very smoothly. Both workers and ser-

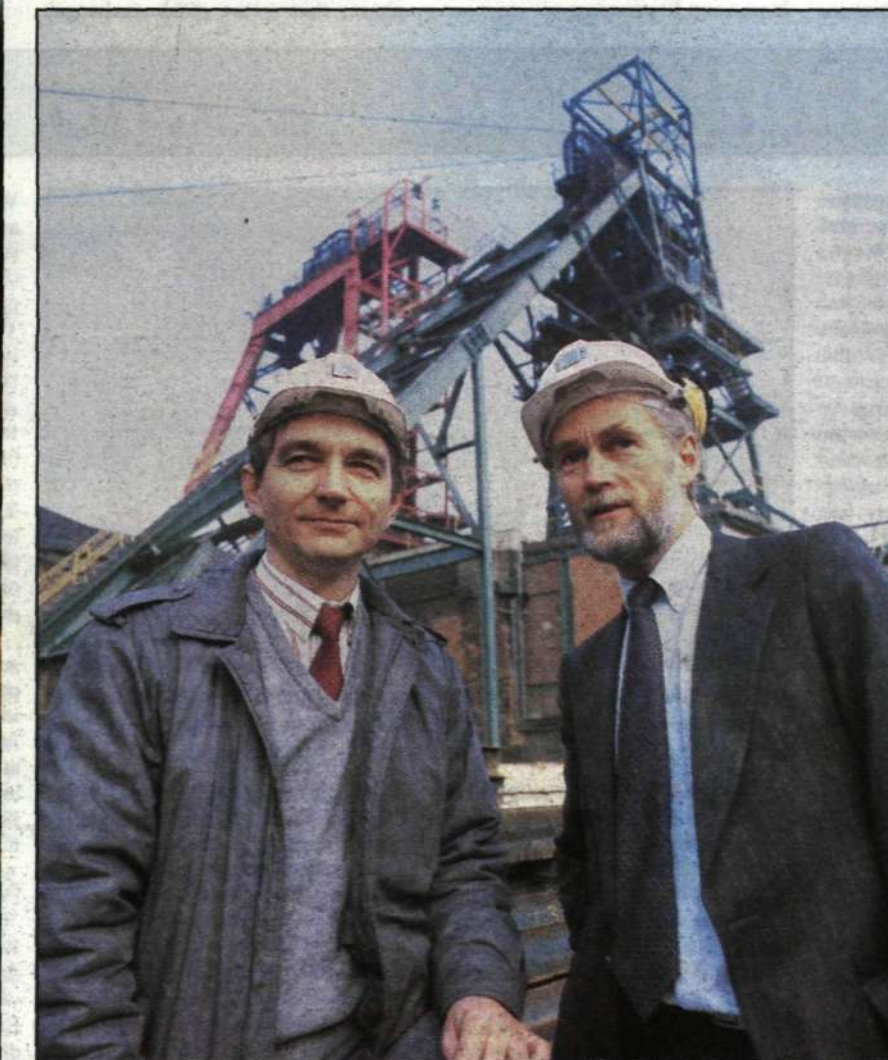
vice personnel use the many advanced and new functions an unusually great deal, compared with what is considered normal in a newly installed system. It involves, for example, automatic call-back and redialing. Traffic in the system has increased tremendously.

#### Distance control

A special function that has proved very valuable in the MD110 system is the possibility to control the system's functioning from a distance. This is important, not least with safety in mind and with locating the cause of a problem without interrupting production. A couple of minor problems could also be resolved without any great loss of time.

Also, the reserve power system is very well designed. If an accident occurs, there are other communications possibilities. Therefore, it is important that all other reserve power be available for bringing people up by elevator from the mines.

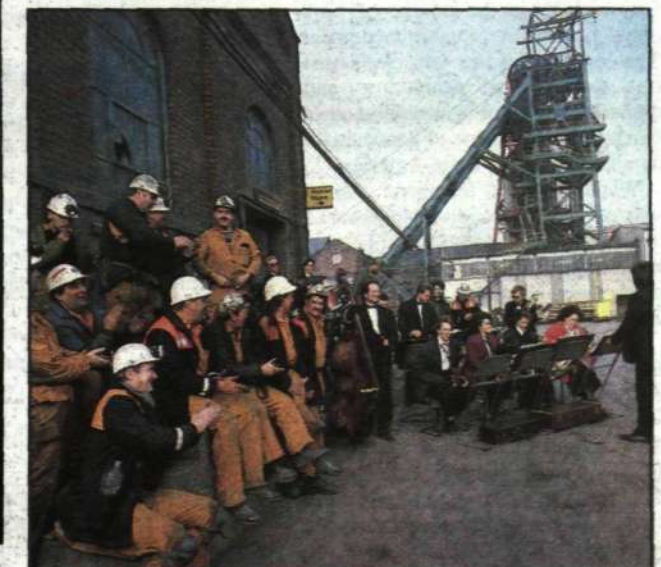
**Text: Mats Hallvarsson  
Photos: Communications News  
and Hans T. Dahlskog,  
Pressens Bild.**



An interruption in operations is very costly for us. But the communications system's most important function is to assure safety in the mines, say Brian Wood, electrical engineer, and John Blackwood, systems engineer.



A new milieu for Ericsson's MD110. The central monitor operation is the miner's roving eye. The switch is a lifeline.



Lunch break in the Sharleston mine. The mine orchestra plays some tunes before it's time to go underground again.

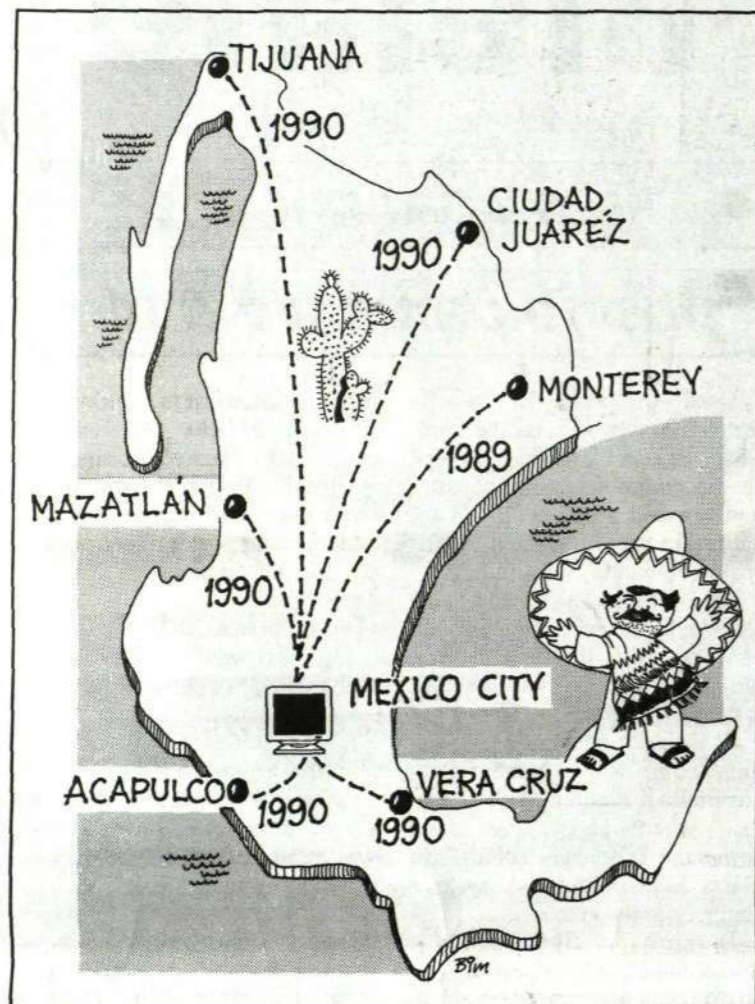


# Huge order for Ericsson in Mexico

Red Superpuerta is the name given by the Mexican telecommunications authority, Telefonos de Mexico, Telmex, to the nation's new digital network. Ericsson, which already has 60 percent of the country's telecommunications network, has received a giant order for AXE, transmission and mini-links, power and cooling. "This is cooperative Ericsson telecommunications in its fully developed form," says Hans Liljeqvist at Transmission. An intensive group effort is now under way to fulfil the order.

Mexico currently has a conventional telephone network that covers the country from north to south. Within this network, is represented Ericsson's entire history in telecommunications, from the old AGF, the first automatic system, to AXE. It also includes transmission and power. Today's network is geared to voice, but Mexico's development has a clear need for digital transmission. In the face of threats that every huge company might procure its own private digital network, Telmex is building a nationwide digital network, designated Red Superpuerta, in order to sell services later on to large Mexican customers.

Ericsson has received an order worth 670 million kronor for an advanced digital service network that will serve Mexico's banks, the national administration and large companies. Ericsson already has more



than 60 percent of the Mexican telecommunications market. The order involves the first two extensions for the end of 1989, which in-

cludes Mexico City and Monterrey, one of the major industry sites. Phase Two takes in Chihuahua, Ciudad Juarez and Reynosa.

Negotiations have allowed for three additional expansion phases up to 1993.

### Red Superpuerta

Red Superpuerta (Overlay Network) is a digital overlay network which is being built parallel with the existing communications network. The AXE system makes it possible to hook up analog and digital subscriber switches to a service network for a number of advanced services: direct dialing, private links, virtual network and business communications.

### Group cooperation

The happy note is that the project involves Ericsson telecommunication in all its aspects," says Hans Liljeqvist at Transmission. We are supplying the latest group technology, among which is the 7000 serie.

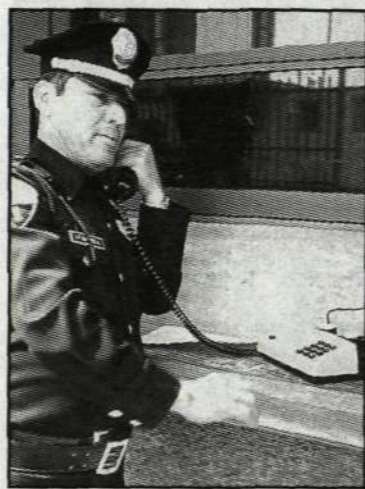
Group cooperation is in full swing. Switching, Transmission, to fulfil the order. Intensive daily contacts and meetings are weaving together the Mexican network.

### Pieces come together

Coordination of the project was allocated by the purchaser, Telmex, to Teleindustria Ericsson, TIM, which has been appointed as the supplier. All the pieces come together here.

In Sweden, Transmission, in Kungens Kurva, is working with those responsible for minilinks in Mölndal and Switching with Power and Cooling.

Switching, from Ericsson Telecom, has two AXE stations in the first phase and three in the second. Subscriber stage, RSSar, is 80 in the first phase, that is the stock exchange,



A Mexican guard with a Swedish phone at the entrance to an Ericsson plant.



Raimo Lindgren has two careers in TIM behind him. First, as head of sales and then after a tour in Colombia, he was managing director from 1983-89.

banks, insurance companies or large corporations. Each stage covers 128 subscribers.

Transmission, at Ericsson Telecom, has the lion's share of the project, with the largest order quantities. It is above all a matter of fiber optic systems.

The huge quantities in relation to



TIM manufactures and sells AXE switches to Ecuador, El Salvador, Costa Rica and Panama, as well as digital switches to all of Latin America, except Brazil and Venezuela. Shown above, a cross-section of a rear section of AXE.

Switching result from many fixed direct connections, transmission links, between banks, factories and administrative authorities where the connection is not "switched" and consequently does not have to go through AXE. Huge quantities of information will be processed daily between fixed determined points.

MINI-LINKS, radio links from Ericsson Radar Electronics in Mölndal, is one of a new generation which has an advanced monitoring system for operations and maintenance.

POWER, from Ericsson Components, has had immense success in the project. AXE needs a lot of power,

for the subscriber stage (RSSerna) and for the transmission centers. "The entire power serie is to be found in the high-frequency technology of the latest concepts," says Arne Hansen of the POWER division.

COOLING, from Ericsson Components in Kungens Kurva, has made



Project Red Superpuerta in Mexico is a joint project within Ericsson, represented here by, standing from the left, Arne Hansen and Hans Severin, Ericsson Components and Cooling, respectively, and Lars Buråker and, sitting Ingrid Svedelius, Ericsson Telecom, AXE and Transmission respectively.

its first move into the Mexican market. It is in four of the five AXE stations. MOBILE TELEPHONY, from Ericsson Radio, will in the long run be involved in the transmission network.

### Bourse and bank

Mexico's three largest banks and the Mexican stock exchange are under

contract in the first phase. In mid-October, the first showing of the two AXE stations took place. The stations will be fully operational at the beginning of 1990.

Text: Inger Bengtsson  
Illustration: Bim Ericsson  
Photos: Lars Åström and Per-Erik Berglund

## From revolutionaries and Pancho Villa to a telecommunications base in Latin America

Ericsson's soon-to-be 100-year history in Mexico can be traced to 1903, when the Hungarian-American businessman José Sittenstatter wandered into the Ericsson office in London to seek a bid for a telephone system for Mexico City

From a commercial point of view, it appeared extremely worthwhile for L.M. Ericsson to establish an expanding telephone company in Mexico City, which in the course of time could become a valuable customer. The company, it was felt, could also be used as a promotion and demonstration tool in attracting other markets in other parts of the country, as well as in all of Latin America.

When the first telephone station was ready, the Swedish Mexikanska Telefon AB Stockholm (MTE) was established, which in Mexico went by the name Empresa de Telefonos Ericsson, abbreviated to ETE.

Competition with Mextelco, the first concessionaire, which was backed by the American Western Electric, was tough but ETE grew rapidly. Mextelco later became known as CTTM, an abbreviation of Compañia Telefonica y Telegrafica Mexicana. The initial operations started with a telephone station and a network for 15,000 subscribers as well as responsibility for installation operations. The station was named "Victoria," after the street where it was located, in the center of the city.

Over the span of ten years, governments and revolutionaries came and went. Inadvertently, the Victoria central was hit with grenades, resulting in a few deaths. Despite the attacks, dozens of operators kept the services going, earning for themselves the praise of the city government.

For ETE it was a difficult time. At one point, it established contact with the legendary and feared revolutionary leader Pancho Villa, urging that the company's property be respected and not be destroyed in the wake of his onslaught.

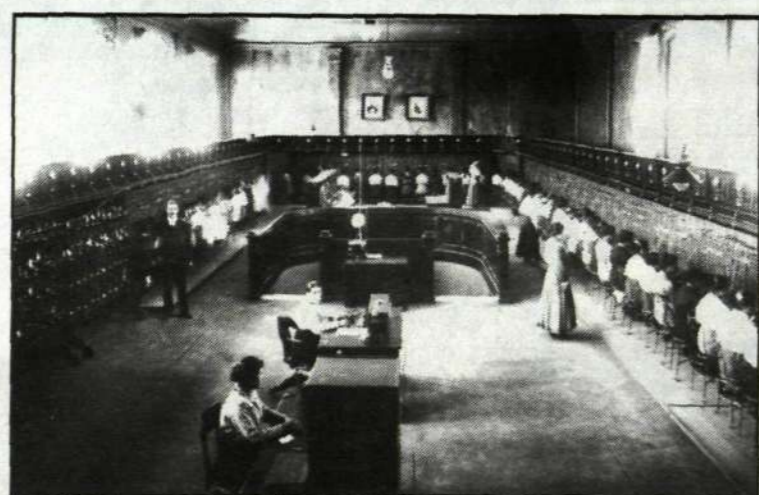
The twenties ushered in a new optimism in the country and a new epoch in Ericsson's history in Mexico.

### Still works today

As a testing ground, the Rome station was opened for automatic traffic in April 1925 alongside the manual traffic with the Victoria station. The result was a resounding success and the basic equipment functions even to this day. This success laid the foundation for the decision to completely automate the telephone system in Mexico City, a technical challenge in itself.

With this investment, Mexico City became the first Latin American city to have automatic telephone traffic and ever since then has been a leader in telecommunications in that part of the world.

But competition also intensified and in 1925 the Bell Company revived the



This is Victoria station in Mexico City. During the revolution, several employees were killed as the result of grenade attacks. The picture dates to 1912.

the failing CTTM. Eventually, it was bought out by International Telephone and Telegraph (ITT), founded by the American colonel Sosthenes Behn in 1920.

In 1934, the 30-year-old traffic expert Gunnar Hugo Beckman, who came to Mexico in 1929, was appointed head of ETE. He led ETE through many a difficult period and remained in charge until his death in 1967, first in ETE and then in Telmex.

During World War II, the anti-American politics in Mexico changed. ITT suggested that it should have majority ownership in the company

that would be run by ETE and CCTM. But thanks to Gunnar Beckman's good relations with the Mexican government, he was able to prevent ITT from taking over the Mexican market.

### Axel Wenner-Gren

The complicated ownership structure in telephone operations, the need for an intertraffic system and the demands for continued expansion called for urgent solution. This came through a Swedish industrialist, Axel Wenner-Gren, with significant resources after the sale of stock in the Swedish forestry company SCA.

Wenner-Gren was resident in Mexico and negotiations between him, Ericsson and ETE led to an agreement in October 1947. A new Mexican company was founded with the name Telefonos de Mexico, S.A., generally known as Telmex. The natural choice to head the company was Gunnar Beckman. Wenner-Gren went further and also acquired half of the block of shares that Ericsson had in the Mexico ITT company CTTM. The thinking was that the three interested parties — Ericsson, Wenner-Gren and ITT — should each own one-third in "Televerket" Telefonos de Mexico.

With time, Ericsson in Stockholm succeeded in resolving the intertraffic problem, which culminated in Mexico's president, Miguel Aleman, on January 9, 1948, officially inaugurating and setting in operation the intertraffic machinery that set in motion the telephone system for Mexico City.

### Nationalized

In 1953, Ericsson bought out Wenner-Gren's shares at the same time that an accord was reached between ITT and Wenner-Gren and Ericsson and ITT with the understanding that Ericsson and ITT should each have half of the share capital in Telmex.

In the course of time, the Mexican government succeeded in taking over more than 51 percent of the shares through telephone taxes, and Telé-

fonos de Mexico was nationalized on August 16, 1972.

They were turbulent and eventful years in the sixties when the modern Ericsson in Mexico began to grow. In 1963, Ericsson ended an agreement with a Mexican firm, Teleindustria SA de CV, for piece work, that is local manufacturing of parts that went into the equipment which Ericsson, in its turn, sold to Telmex. In 1965, Teleindustria was bought out and renamed Teleindustria Ericsson S.A., hereafter referred to as TIM.

Operations in Mexico continue with strong growth. A whole new generation of LMers traveled to Mexico.

### All from TIM

The introduction of electronics in the telecommunications network made its real breakthrough at the beginning of the eighties. Telmex's ambitious digitalization program involves a successive step-up of orders for AXE switches at the same time that coordinate selector stations are being phased out from the order program. Despite the fact that the total market shrank in 1984-1989, TIM was able to increase its market share at the cost of ITT, which had problems with its System 1240. Its market share rose to 70 percent, which is sensational when one considers that TIM had only had 25 percent of the market for the five-year period 1982-1986. When ITT's problem came into the open, Telmex ordered all its digital stations from TIM for the period 1987-1988.



Ericsson's huge plant in Tlalneplanta. Here, about half a million telephone station lines are produced annually. The first phase of the plant was completed in 1971. The picture dates to 1983.

TIM, which during 1983-1986, lost its market share for PABX, could, with the introduction of and through the office switch MD110 for voice and data, regain its leading position.

A strong market presence and prudent financing made possible a new investment project for some 25 million dollars for the period 1989-1990, first for technical updating and an investment in Mexican mobile telephony with a fully automated cell system, with an initial system already installed in the Tijuana area in Baja California, on the border with the United States.

The eighties also involved a stra-

tecgic shift in Ericsson's apportioning of the business areas and their geographic responsibilities. TIM was given increased export responsibilities and it began to sell AXE switches to Ecuador, El Salvador, Costa Rica and Panama, as well as PABX switches to all of Latin America, with the exception of Brazil and Venezuela, which have their own local manufacture. In 1988, exports surpassed 35 million dollars. This plus factor in Mexico's trade balance has enhanced TIM's image in the country.

In November 1969, ground was broken for a new factory. The construction will be carried out in two stages. The first was ready for moving in at the beginning of 1971, and the other, which was completed in 1973, was inaugurated by the country's president. The managing director for TIM during the construction period was Nils Kjellander (1967-1976), who was succeeded by Nils Söderqvist (1976-1982). Raimo Lindgren, former head of sales with TIM and managing director for Ericsson de Colombia, took over the leadership of TIM in 1983, at a time when total chaos pervaded the country in the wake of its economic crisis. (\*\*)

The other large Ericsson-directed company in Mexico is "Latincasa," the joint cable company Conductores Latincasa, S.A. de CV, in which Ericsson owns 25 percent of the shares.

Soon, Ericsson will be able to look back on 100 years of operations in Mexico, first as a small supplier of

telephone apparatus, then as a "Televerket" (PTT) and today as an advanced supplier of complicated telephone systems, with a substantial local production deeply anchored in Mexico's social and economic life.

Ericsson demonstrated ample proof of this anchoring when several large telephone stations in the 18-million-inhabitant Mexico City were knocked out during the devastating earthquake of September 19-20, 1985, when all telephone links with the outside world were interrupted. Thanks to its immense and extraordinary resources, Ericsson could rapidly fly in new equipment from Sweden and the United States, while at the same time TIM operated three shifts to help with the reconstruction.

Extract from a planned book section by Harald Mohlström. Excerpted by Mats Hallvarsson and Bengt Plomgren.

Harald Mohlström was born in Mexico and from 1941-1985 held various positions in ETE, Telmex, TIM and Ericsson.

\*\*Since this article was written, a shift in Ericsson's international management circle has taken place. On September 1, 1989, Raimo Lindgren was named managing director for Industrias de Telecomunicacion, S.A. (Intelsa) in Spain and the new director in Mexico is Gerhard Weise, from Brazil.

### 2,400 employees

TIM, together with its affiliates,



*Opening address at Telecomm 89*

# BJÖRN SVEDBERG SEES CONTINUED PROGRESS

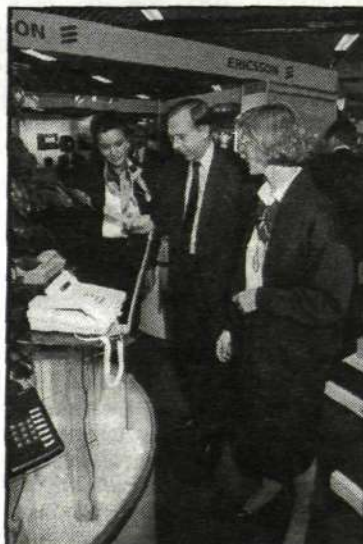


*"Technology is moving ahead, with ever smaller and cheaper components. The cheaper it becomes, the greater will be the demand. The longer the series, the less costly the production and the price in a continuous spiral," says Björn Svedberg in his opening address at Telecomm 89.*

FOTO: KARL-EVERT EKLUND



*Ericsson's stand was one of the largest at the exhibition and demonstrated the group's interaction in different fields. A number of new products were also introduced. This was how it looked shortly before the opening day.*



*Eva Gavalius and Anne-Charlotte Persson show Björn Svedberg some of the displays in the Ericsson stand.*

**"We have never seen any saturation of the market for telephony. There is still a colossal potential! Every time I see a forecast for, let's say, mobile telephony, I say that can't be right. It is higher"**

It was an optimistic Björn Svedberg that inaugurated the huge Telcomm 89 exhibition in Stockholm during the first week of October. Ericsson's chief executive painted a bright picture of the industry and predicted a shining future for telecommunications around the world.

"There is a strong connection, dating back a century already, between economic growth of telephone traffic," says Björn Svedberg. "As long as we have growth we will also have an increase in demand for Ericsson systems."

Nevertheless, until now the connection has been based mostly on voice traffic, that is telephone conversations between people.

But now, there is built-in data diffusion in telenetworks and data traffic, as well as paper via fax.

"At Ericsson, we seldom send letters through the post without notifying the addresses through fax. The telecommunications networks are toughening competition for the postal services.

The rapidly increasing data traffic, the explosive growth in mobile telephony and the expansion needs of the developing world makes for colossal potential in this field, he notes, adding that all the forecasts up to now for mobile telephony have been off. Growth has been significantly greater overall.

### Vast liberty

With mobile telephony, there is also vast scope for freeing up communications. Today, telecommunications are bound to fixed networks and fixed phones. We call up another phone and we hope that the person we are seeking is in the immediate vicinity.

"All of this will change in the future. I will call YOU, you personally, wherever you are — in your car, your summer house, your work or your home," Svedberg says.

This will be possible, thanks to mobile telephony and the technical developments that will have soon made "pocket phones" in the size of cigarette packets that people can carry around and grasp easily.

"This development will be of utmost importance and will go a long way in the history of telecommunications," Svedberg believes.

There is a risk that development is moving so fast that authorities in different countries quite simply are unable to cope with manufacturers in arriving at a common standard.

### Can slip

Svedberg voices some concern that Sweden can lag in the area of standardization.

"In the European Community, they are working toward common standards, and Sweden is not participating in this work. As a result, we are simply not part of tomorrow's world," he says.

And, indeed, tomorrow's world was also the underlying theme at the Telecomm fair, at which 87 exhibitors showed their products and solutions, not only for today's needs but also for those of the nineties.

Equipment for mobile telephony, business switches and business networks was a very strong theme among the exhibitors, as well as modems and network services.

Parallel with Telecomm 89, there was the DataKontorMiljö 89 exhibition, where visitors could see products from 803 different companies from 24 countries.

The Ericsson stand was one of the largest at the entire fair and, typically, was heavily future oriented with integrated communications technology of the nineties as its theme.

The group displayed a broad spectrum of tele, data and mobile communications, with emphasis on how their interplay could become an important competition tool for all companies and a way for more efficient administration for organizations and government authorities.

Attracting wide attention at the fair was a number of user areas involving so-called ISDN (integrated services digital network), which Ericsson was able to demonstrate in full operation. ISDN is expected to be introduced throughout Europe during the nineties and could lead to new technical quality in telephone transmission and a host of new integrated services.

### New products

Ericsson also had a number of new products on display:

A new family of circuit boards, which allows flexible connection for local personal data networks with other networks and public data bases.

A series of high-speed modems for use on rapid lines between two or more points, with upgrading according to need.

A multimodem with high user security, specially designed for huge customers like banks, insurance companies, airlines and public administrations, where the need for data security is very large.

The introduction of the two latest switches in the BCB 90 family, new even on the Swedish market. The larger one can be expanded to 48 extensions and 18 central circuits and the smaller one to 15 extensions and 8 central circuits.

A matching unit that made it possible to connect a "Token-Ring" to a coaxial network aroused considerable interest.

About 75,000 visitors attended the fair. Ericsson personnel was also active as leaders in the exhibition's seminar program. The twenty or so Ericsson employees, who guided visitors and provided information, in their attractive dark blue outfits, were happy with their results. Upward of a thousand customer contacts will now be followed up with telephone calls and reinforced with more information.

Mats Hallvarsson