

## FAVORABLE TREND OF EARNINGS

### Ericsson Scores In Germany

Within the space of three days last month Ericsson Information Systems was able to announce two "breakthrough" orders totaling SEK 285 m. in West Germany, one of the world's toughest markets for information systems and products. Both contracts were placed by Bundespost, the West German telecommunication and postal administration.

The first order, valued at SEK 250 m., covers the supply of 6,000 upgraded Ericsson WS 286 (AT version) personal computers and Alfaskop terminals.

Ericsson Information Systems won the contract in competition with more than 30 of the world's leading manufacturers of personal computers and terminals.

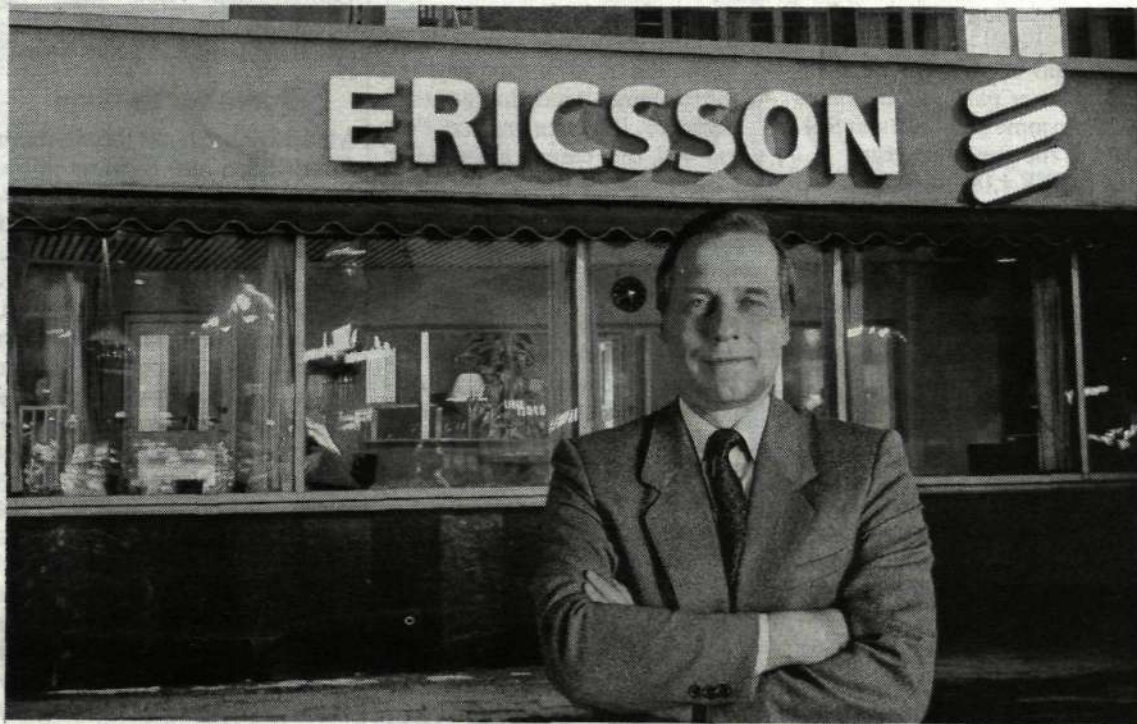
The second order, valued at SEK 35 m., calls for the delivery of Alfaskop terminals to be installed in West German post offices during the next two years.

#### Breakthrough

"Our successes in West Germany represent an important breakthrough on one of the toughest markets for information systems," Stig Larsson, president of Ericsson Information Systems AB, said following receipt of the two orders.

Earlier, characterizing the Bundespost as one of the world's

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In the 1986 Annual Report being released in late April, CEO Björn Svedberg expresses "cautious optimism" about the trend of Ericsson's profitability in 1987. (See accompanying story on 1986 operating results.)

Ericsson is slowly but surely recovering from the decline in earnings recorded during the past two fiscal years. That's the basic message of the report on 1986 operations.

Following a continuing improvement in earnings during the fourth quarter of last year, consolidated operating income before appropriations and taxes was SEK 911 m., compared with earnings of SEK 878 m. a year earlier.

Net income per share after taxes paid was SEK 14.96, up from SEK 12.62 in 1985. After taxes and estimated deferred taxes on appropriations, net income per share rose from SEK 15.15 to SEK 17.21.

#### Positive trend

"It is gratifying to note a positive trend of earnings during the second half of 1986 and to be able to look ahead with a certain optimism," Björn Svedberg, Ericsson's president and chief executive officer, said.

"We must at the same time remember that we are in an industry with great changes and severe competition," he noted. "Continued strong efforts are required from all employees, as well as a concentration of resources in areas where we have a strong position."

#### Dollar rate dropped

The sharp drop in the exchange rate for the U.S. dollar affected sales and order bookings adversely in 1986. Ericsson's sales declined three percent, to SEK 31,644 m. Excluding divestments, sales increased one percent, however.

The significant reduction of losses in Information Systems, from SEK 806 m. in 1985 to SEK 284 m. in 1986, was mainly responsible for the improvement in

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### BellSouth Picks AXE Switches

Ericsson now has contracts with four of the seven Bell holding companies that dominate the market for public network equipment in the U.S.

BellSouth Services, Inc. last month became the fourth Bell company to select Ericsson equipment when it placed a contract for two AXE signal transfer point (STP) switches.

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### SEK 1,300 M. IN ORDERS FROM LATIN AMERICA

Ericsson has received contracts totaling SEK 1,300 m. to supply AXE digital telephone exchanges and other telecommunications equipment in Mexico and Venezuela since the first of the year.

The largest single contract, valued at SEK 650 m. was received from TELMEX (Telefonos de Mexico S.A.), the national telecommunications authority. It covers the delivery of new local, transit and tandem exchanges, as well as equipment to expand existing exchanges.

A second TELMEX order, in

the amount of SEK 292.5 m., calls for the delivery of equipment to expand existing ARF crossbar exchanges and for the supply of digital and analog transmission equipment.

TELNOR, the authority serving the northern region of Mexico, has awarded a SEK 58.5 m. contract for a new AXE exchange to handle national and international traffic, plus material for existing exchanges.

The recent orders, placed with Teleindustria Ericsson S.A., the Mexico subsidiary, boost to more than 1.26 million the number of lines of Ericsson's AXE equipment sold in Mexico to date. More than 542,000 AXE lines are

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**SIEMENS**  
**A tough competitor**

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**RISK MANAGER**  
**A demanding job**

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**FIBER OPTICS**  
**A hot technology**

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## 1986 IN BRIEF

# Strong Performance During Fourth Quarter Is Basis for Optimism

Ericsson's sales in 1986 amounted to SEK 31,644 m., compared with SEK 32,496 m. in 1985. Excluding divested operations, sales of comparable units increased one percent.

Order bookings totaled SEK 32,794 m. in 1986, as against SEK 33,812 m. a year earlier. The sharp decline in the exchange rate for the U.S. dollar affected order bookings and sales adversely.

Following continued improvement in earnings in the fourth quarter, income before appropriations and taxes for the full year 1986 was SEK 911 m. including capital gains of SEK 378 m., compared with SEK 878 m. in 1985, including capital gains of SEK 333 m.

Net income per share after taxes paid was SEK 14.96, compared with SEK 12.62 in 1985. After taxes paid and estimated deferred taxes on appropriations, net income per share was SEK 17.21 in 1986, as against SEK 15.15 in the preceding year.

Net financial expense amounted to SEK 1,180 m. in 1986 and SEK 952 m. in 1985.

### DISTRIBUTION OF OPERATING RESULTS AND SALES BY BUSINESS AREA

	Operating Income*		Sales	
	1986	1985	1986	1985
Public Telecommunications	1,165	1,282	11,506	10,593
Information Systems	-284	-806	9,571	10,561
Cable	261	336	3,833	4,409
Defense Systems	255	178	3,000	2,161
Radio Communications	254	253	2,752	2,656
Network Engineering and Construction	153	154	2,335	2,113
Components	31	22	1,509	1,461
Other operations	-14	83	652	1,482
Capital gains/losses and corporate expenses	293	135		
Less Intersegment sales			3,514	2,940
<b>TOTAL</b>	<b>2,114</b>	<b>1,637</b>	<b>31,644</b>	<b>32,496</b>

\* After depreciation, before financial income and expense

### NOTES ON BUSINESS AREAS' PERFORMANCE

**Public Telecommunications.** Somewhat lower income was due to investments for the future through development and adaptation of the AXE system to the North American and British markets.

**Information Systems.** Substantial reduction in losses was achieved through improved operating performance. Income includes capital gain of SEK 88 m. on sales of buildings, which was offset by costs of restructuring program.

**Cables.** Income was reduced as result of sale of majority interest in FICAP, former Brazilian subsidiary. Decline in demand for fiber optical cable in U.S. was also a factor. Operations in Sweden developed favorably.

**Defense Systems.** Good operating results. Improvement was due in part to the transfer of certain operations from the Radio Communications Business Area.

**Radio Communications.** Income of comparable units was higher after major successes in the North American market, among others.

**Network Engineering and Construction.** Operating in a difficult market, achieved virtually the same income as a year earlier.

**Components.** Utilization of capacity was low, due to reduced demand for capacitors and standard products. Improvement in income was due to good trend of sales of microcircuits.

# Analysts Seem Pleased, Too!

Some of the toughest judges of corporate performance in the world today — American financial analysts — were pleasantly surprised by Ericsson's comeback performance in 1986, as recorded in the operating results released last month.

And they are cautiously optimistic about Ericsson's chance to obtain volume orders in the U.S. Ericsson and Siemens seem to have the best opportunities to establish themselves in the world's largest market for telecom equipment.

By their penetrating and frequent evaluations of companies, financial analysts — employed by investment firms, brokerages, banks and investment advisory services — influence the share-buying (and selling) decisions of investors throughout the world. If too many evaluations of a company are negative, leading to an avalanche of selling, a company's reputation in financial markets suffers. It becomes difficult, and more expensive to raise capital.

American analysts are noted for their aggressive pursuit of information about a company, and for the tough-mindedness of their decisions. If a company is not doing well, they cannot afford to be sentimental. Their own reputations are at stake in a very competitive and well-paid profession.

### Good news

So it's good news that leading U.S. analysts, among many who have been disappointed with Ericsson's performance in recent years, now think the company is on the right track. Four of them expressed their views recently.



Maria Sbrilli

Maria Sbrilli, the telecommunications analyst at Smith Barney, one of the leading American financial firms, is among those who believe that Ericsson and Siemens are best equipped to break into the giant U.S. market. But she does not think the task will be easy. And if Ericsson receives volume orders in the immediate future, she points out, the results will not be reflected in the company's profits until 1988 or 1989.

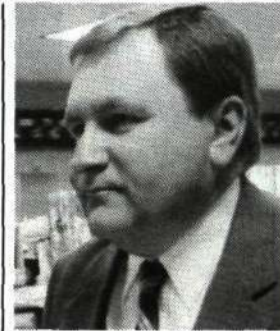
### Good things

Ms. Sbrilli has good things to say about the information Ericsson provides demanding analysts. "It has improved steadily and is now in a class with that provided by the best non-American companies," she says.

George Kelly, at Morgan Stanley, one of the pillars of the American and international financial community, has been following Ericsson for a number of years.

A year ago he thought Ericsson's 1986 earnings would improve substantially. Later, he adjusted his forecast downward and issued a "hold" recommendation, rather than a recommendation to buy. (Analysts normally issue one of three recommendations: "buy," "hold" or "sell.")

"But the preliminary 1986



George Kelly

report recently was favorable," George Kelly now says. "It strengthens my belief that Ericsson is on its way to better times?"

### Room for Ericsson

Mr. Kelly also thinks there is room for Ericsson and Siemens in the U.S. market. Ericsson could possibly capture five to ten percent of the market, he believes. "That would give Ericsson sales of between 200 and 400 million dollars. In the best of cases, that means an increase of 25 percent in the Group's sales of public telecommunications equipment."

At Merrill Lynch, the largest U.S. financial firm in many categories, the Ericsson analyst for the past three years has been John Abbink. He, too, has been forced to adjust his forecasts during that period. But he thinks Ericsson has all the prerequisites to continue to be one of the truly large companies in the industry — if it succeeds in penetrating the public telecom market in the U.S.

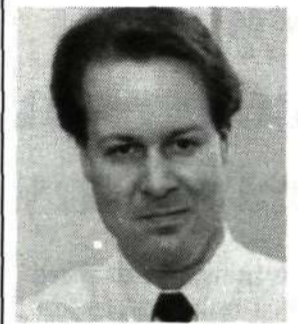
"I think its strategy now is good," he notes. "Ericsson is concentrating on areas where it has traditionally shown that it has strong expertise. The company has many good products and the management knows what it is doing. Much of Ericsson's recovery depends on how skillful the Group is in reducing costs."

Like his analyst colleague, Charles Nichols at E. F. Hutton, another of the large American financial houses, has reduced his "Ericsson forecasts" a number of

times. He is still somewhat cautious in his evaluation.

"But Ericsson is on the right track," he says, conceding that American investors are less patient than their counterparts in Europe when it comes to "turning a company around."

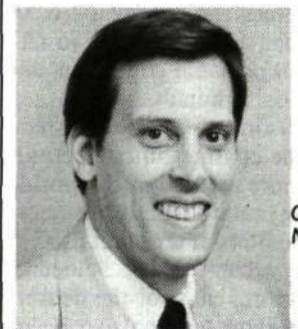
"Ericsson probably reached the bottom of its downward (income) curve at the end of 1985," Charles Nichols suggests. "And despite hard competition the Group is getting large orders at regular intervals. The mobile telephony program in the U.S. is particularly im-



John Abbink

pressive. A breakthrough with orders for public telephone exchanges in the U.S. can occur this year, but it won't show up in profits until 1988, at the earliest.

He agrees the report on 1986 earnings was a favorable surprise. "Income was better than expected, and a sign that the cost-cutting is beginning to produce results." Another result is that Charles Nichols is now recommending that investors "buy" Ericsson shares, replacing his earlier neutral "hold" recommendation.



Charles Nichols

## STOCK QUOTATIONS

1986	Stockholm Stock Exchange SEK			NASDAQ USD		
	HIGH	LOW	VOLUME	HIGH	LOW	VOLUME
Week of:						
Jan 5	226	213	185,040	33 3/4	31 1/2	183,000
Jan 12	213	197	423,493	32	30 1/2	188,200
Jan 19	212	197	201,900	31 3/4	30 1/8	106,400
Jan 26	198	187	1,229,718	30 1/4	29 1/4	346,100
Feb 2	224	198	495,460	34	31	304,400
Feb 9	223	216	187,100	34 1/8	33	186,800
Feb 16	226	214	323,450	34 7/8	33 3/4	167,300
Feb 23	237	198	1,332,298	36 3/4	34 1/8	360,000
Mar 2	252	236	579,35	39 3/8	37	469,200
Mar 9	254	247	408,765	39 1/2	38 3/8	415,500
Mar 16	265	247	332,704	41 1/8	39 1/4	438,200
Mar 23	280	246	578,800	43 1/8	41 1/4	578,800

The tables above show the highest and lowest prices paid for LM Ericsson Class "B" shares on the Stockholm Stock Exchange, and the highest and lowest quotations reported by NASDAQ for these shares (represented by American Depositary Receipts) in the United States. The quotations are reproduced only to indicate the general trends of Ericsson share prices in two countries.

## Ericsson Fiber Optics

## KEY ROLE IN NEW TECHNOLOGY

Ericsson Fiber Optics AB (EFO) may be one of the smallest and youngest Ericsson companies — it was formed May 1, 1985 as a subsidiary of Ericsson Cables AB — but it already occupies a distinctive and promising niche in the organization.

EFO's operations are concentrated in two fields: cabling systems for local area networks, and splicing equipment for optical fiber. In both fields the company has proprietary technology and products that are vital to Ericsson's future as a supplier of superior communications systems.

EFO cabling systems are based on a completely new approach. They permit the use of a single wall outlet for the connection of both telephone and computer equipment. And the same outlet can be used regardless of the make, or makes, of computers involved.

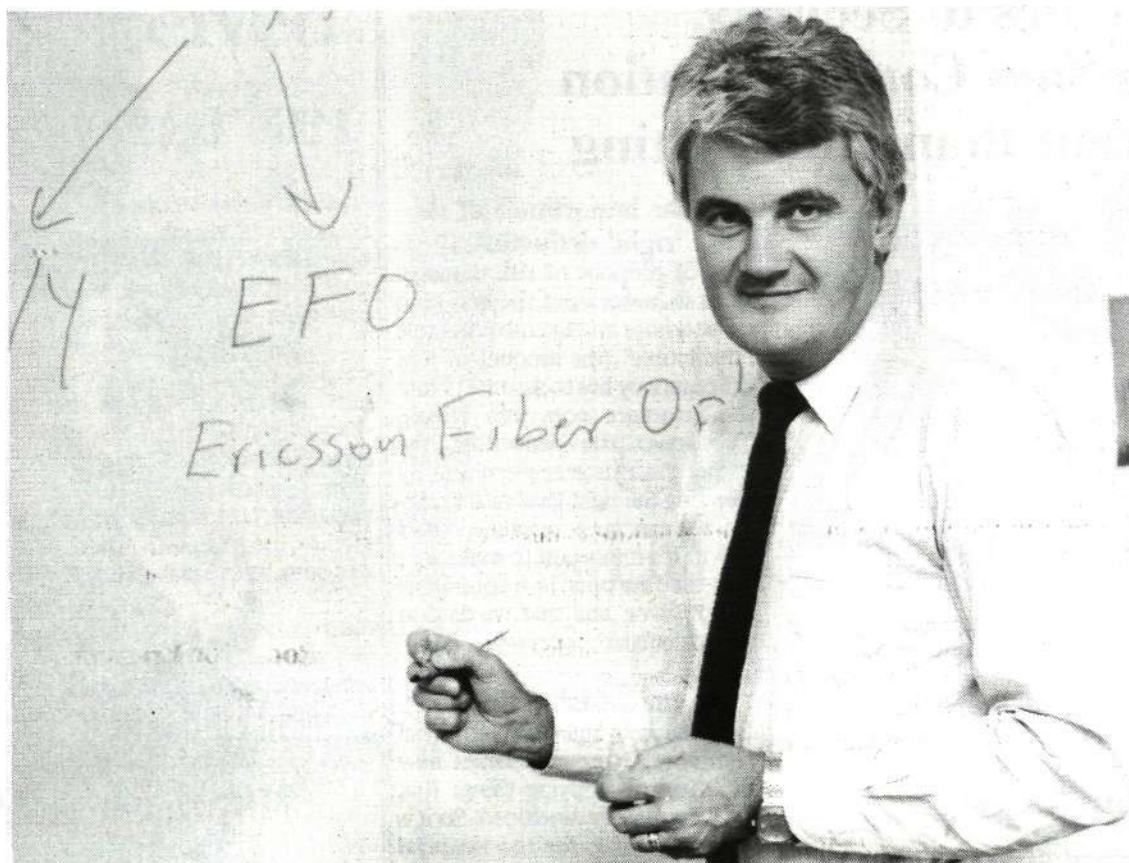
"The old days, when various types of computers were operated as isolated islands in a company, are gone," says Viesturs Vucins, president of the new company. "Today, people want networks that permit equipment to communicate fast and reliably."

## New system

The new cabling system not only eliminates the need for parallel networks for different types of data traffic but also makes it a simple matter to shift equipment from one part of a building to another. An employee who is assigned to a new office, for example, can take his or her telephone, PC or terminal and simply plug it into the outlet in the new location.

A large part of the EFO cabling system is based on optical fiber technology that will play a greater role in both public and private networks in the future.

Viesturs Vucins notes that the distinction between public and private networks is becoming more blurred and he foresees the day when the distinction between exchanges and transmission sys-



Viesturs Vucins, president of Ericsson Fiber Optics

tems will also blur. Longer-term, he forecasts, subscriber switchboards will probably have to handle higher-speed data transmission. And this will require efficient networks for the local distribution of telephone and data traffic from public networks.

With data security becoming an increasingly serious problem in modern society, EFO is particularly proud of its patented method for safeguarding fiber optical networks from "wire tapping." Optical fiber as a transmission medium is inherently superior to all other media in this respect as well. EFO's optical fiber splicing equipment and methods are recognized as among the finest in the world. The technical demands are exacting. The light-conducting core in the type of optical cable used in public networks, for example, is only 0.01 mm in diameter. And if the fiber cores are not positioned precisely during splicing, much of the signal can be lost in transmission.

Although the greater part of EFO's production is handled by subcontractors, the company's FSU 850 splicing machine is so advanced that no final assembly or testing is permitted outside the

company's production department. EFO wants to safeguard the quality of the machine as well as its technology.

## High-tech

Ericsson Fiber Optics is active in another high-tech field, the development of so-called gate arrays, a more powerful alternative to integrated circuits. In contrast to IC's, which are available in a large number of standard versions, each gate array has to be custom-tailored for a specific function.

Gate arrays are expected to be used increasingly in EFO products. Most of EFO's approximately 70 employees worked at Ericsson Cable before the new company was spun off to specialize in local area networks two years ago.

EFO had sales of more than SEK 75 m. in its first full calendar year of operations in 1986.

## Ericsson and Optical Fiber

Half a dozen Ericsson units are active in the field of fiber technology today.

*Ericsson Telecom:* (transmission in public networks and cable TV systems).

*Ericsson Cables:* (production of fiber and fiber cable).

*RIFA:* (production of components).

*Network Engineering:* (planning and installation of optical networks).

*Ericsson, Inc.:* (production of fiber cable for the U.S. market).

*Ericsson Fiber Optics:* (equipment for local networks and splicing equipment).

## HOW OPTO WORKS

In optical fiber systems, one or more optical (glass) fibers replace the metal conductors used in conventional cable systems. The electrical signal at the transmitting end is adapted for transmission via the fibers and is then converted to light by means of a light diode or laser diode. The light pulses are then fed into the fiber.

At the receiving end, another type of diode reconverts the light pulses to electrical signals in their original form.

Fiber optical cable offers a number of specific benefits:

- Extremely rapid transmission of large quantities of information.
- Long transmission distances
- Insensitivity to magnetic and other disturbances
- Difficult to tap
- Requires little space
- Inexpensive, easy to install

A typical installation that would require 400 amplifiers with the use of metallic cable needs only 20 when fiber optical cable is used.

And with today's technology, 8,000 telephone channels can be carried via a single optical fiber. The limit is determined not by the fiber but by the peripheral electronics.

## Lighting The Way For Signals

The history of fiber optical technology began in the mid-1960s when Dr. Charles Kao, who was later to receive the Ericsson Prize for his contribution to telecommunications, demonstrated the theoretical possibilities of glass fiber as an exceptionally efficient transmission medium.

The problem was to produce fiber of adequate purity, with acceptably low levels of signal loss.

Based on Dr. Kao's pioneering work, Corning Glass and Bell Laboratories in the U.S. and British Telecom in the U.K. began research projects to develop optical fiber for transmission purposes.

## Began study

By 1970 technicians had developed both fibers and lasers that performed adequately at room temperatures and Ericsson began to monitor the new technology more closely. Gerhard Gobl headed the project, assisted by Gyorgy Endersz and Viesturs Vucins, today the president of Ericsson Fiber Optics AB.

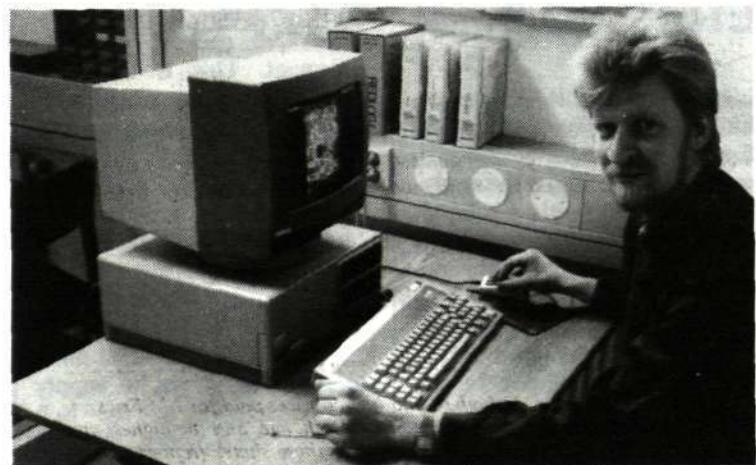
The Parent Company opened a fiber laboratory with a staff of ten in Bollmora in 1976. Three years later the company placed a 34 Mbits system in operation in the public network in the Stockholm area. In July 1981, a special department for fiber optics technology was formed. The 80-person department had a "public" segment, working on conductor systems, and a "private" segment that concentrated on military applications, data networks and cable TV, among other fields.

## 60 persons

The department had expanded to include about 60 persons in the winter of 1984/1985 and operations had become excessively diversified for a single organization. It was at this point that the decision was made to assign the public segment to Ericsson Telecom and to organize Ericsson Fiber Optics as a subsidiary of Ericsson Cables.

While the EFO cabling system is based on a "total concept," a number of its products are distinctive in themselves. These include the ZAT 128-1 data multiplexor, the ZAT 4 privacy link, the ZAT 9144 "channel extender," and, of course, the FSU 850 fiber optical cable splicer. The latter is one of the few units of its type that permits precision splicing in the field and not merely in a laboratory.

It is rated one of the "absolute leaders in the market," EFO says.



Peter Rehnström works on gate arrays, a high-tech alternative to integrated circuits.

# HOW TO SAVE MILLIONS, PREVENT PROBLEMS

## When it Comes to Security, Peter Flensburg Says Communication Is More Important than Rule-Setting

The shadowy figure lurking in the upper right-hand corner of this page may be planning to kidnap an Ericsson executive in an unstable part of the world . . . steal a draft copy of a tender for a half-billion-dollar contract . . . or gain access to information on Ericsson's next-generation switching system.

Worrying about shadowy figures in dark glasses is only part of the job of Peter Flensburg, who assumed the title and responsibilities of Risk Manager, a new position in Ericsson, just over a year ago.

Peter — a graduate of the Swedish Institute of Technology, a former department head at the National Office of Explosives and Flammables, and a former insurance broker — has many less dramatic problems to worry about as well. These include saving Ericsson millions of kronor a year through a new approach to insurance coverage and promoting the message that "Safety is a matter of communication."

Here, Peter comments on some aspects of his work:

### Scope of the job

At most other Swedish com-



panies, a risk manager deals only with insurance. My job takes in all forms of safety and security, as well as risk analyses and loss prevention in production.

### On Ericsson's new 'captive' insurance company in Luxemburg

Ericsson pays between SEK 75 m. and SEK 100 m. a year in insurance premiums to companies who, in turn, reinsure these policies with Lloyds of London and other companies. By forming a captive reinsurance company, we can consolidate our policies and do the reinsuring ourselves.

### On Ericsson's loss record

Over the past ten years, we've paid an estimated SEK 250 m. (to insure properties) all over the world. Over the same period, a maximum of SEK 10 m. has been paid out to us in indemnities. This is a point that we can use as leverage when we negotiate with insurance companies.

### On the importance of the 'right' deductible

One of the jobs of risk management is to work out the best kind of insurance and the most suitable "deductible" (the amount of loss the company has to assume before the insurance goes into effect). The lower the deductible, the higher the insurance premium. By selecting the right level of deductible we can keep insurance costs down. It's important to make sure that the fine print in a contract is in our favor, and that we dare to take calculated, acceptable risks.

### On industrial espionage

Ericsson is a high-tech industrial company. Other companies may be intent on copying things that we have already developed. So it is extremely vital, for the financial security of our company and the job security of our personnel, that certain information does not fall into the hands of competitors. This involves not only designs and technologies but problems we may be having, as well as manufacturing costs, sales margins and the like. Our actions are closely monitored by our rivals and foreign governments. We must become more aware of this.

### On communication

By employing communications, we can create understanding and a sense of common values among all employees. That's more important than setting down laws for security.



### On data security

As experts in data communications, we should strive to become experts in data security. We have several data processing systems in operation. Data security will gain much greater attention throughout Ericsson in the future.

### On preventing losses of property

You try to determine if there are any parts of production in which there is a major risk of fire or other catastrophe, and if any machinery or processes are con-

sidered vital for production. We check and provide advice. We make sure that safety facilities are in good working order, and that safety regulations are followed.

### On the threat of terrorism

We're providing training courses and extra precautions to protect Ericsson personnel. We constantly analyze developments in all the countries in which Ericsson operates, to determine whether extra steps are needed to provide more security for our people.

## Strong acceptance worldwide

### MD 110 ORDERS NOTED

Dublin, Ireland: 1,000-line system for Trinity College, to be expanded later to 1,500 lines.

Milan, Italy: System selected for Italian subsidiary of Bayer, West German pharmaceutical giant.

Dublin, Ireland: 200-line system for RTE, the Irish radio and television company. System choice, leading to an increase to 2,000 lines within several years.

The Netherlands: Two power supply companies, in central and eastern part of the country, select a total of four MD 110 systems.

Copenhagen, Denmark: KTAS, largest of four Danish telephone operating companies, selects five units with a total of 3,300 lines, to be used by Danish Radio.

Caracas, Venezuela: Three systems totaling 1,016 lines for Metro de Caracas underground railway system.

Australia: 1,800-line system for National Bank. System's five units will be located in Melbourne area (3), Brisbane and Adelaide.

## Norsk Data Buys EIS PC's

Ericsson Information Systems' Norwegian subsidiary has received a contract to supply upgraded Ericsson personal computers for inclusion in a new line of work-

stations introduced recently by Norsk Data. The upgraded PC, designated WS 286, is marketed in Norway as the "Butterfly." The contract is valued at SEK 50 m.

## US WEST BUYS AXE EXCHANGES

Ericsson has been awarded a contract from US West Inc. for its AXE digital local exchanges. The equipment will be used in the state of Idaho by Mountain Bell, one of US West's three telephone operating companies, for local telephone exchanges.

The contract provides for the replacement of more than fifty older electro-mechanical exchanges in Idaho with new AXE digital equipment. Mountain Bell awarded Ericsson the contract after a competition in which all of the leading local exchange suppliers in the North American market were invited to submit proposals.

Mountain Bell will place the first Ericsson AXE local exchange into service before the end of this year. The project is expected to be completed by the end of 1991.

The replacement program follows an agreement between

Mountain Bell and the public utilities commission in Idaho that calls for Mountain Bell to convert a substantial part of its Idaho telephone network from analogue to digital technology over the next five years.

**ERICSSON** 

The contract is Ericsson's third with US West's units for digital exchanges. Ericsson presently has contracts to supply Mountain Bell with a digital local exchange for Canon City, Colorado, and to provide Mountain Bell, Northwestern Bell and Pacific Northwest Bell with signal transfer point (STP) switches for installation in six cities.

Commenting on this latest order from a Bell operating company, Jan Stenberg, ex-

ecutive vice president and head of Ericsson Telecom, said: "The order represents an important step towards our becoming established in the United States. The contract, to date Ericsson's largest from a regional Bell operating company, was obtained in competition with the established suppliers in the U.S. besides a general purchase agreement. This is the third order US West has placed with Ericsson, which demonstrates its strong confidence in the AXE system."

Peter Thomas, president and chief executive officer of Ericsson's North American subsidiary, added: "The contract for Idaho, which is our largest with US West, is an important milestone in our efforts to supply local exchanges to the Bell operating companies, a goal we've been working steadily towards for some time."

## 20th Mobile Radio Contract Received In The U.S. Market

Ericsson Radio Systems AB has received its 20th contract for mobile radio equipment in the United States, and the fourth to be delivered in the state of California.

The most recent order, valued initially at US \$10 m. calls for the supply of two Ericsson CMS8800 systems to be operated by mobile telephone companies in the Sacramento/San Joaquin Valley area of central California.

Ericsson Radio will also deliver software for fully automatic roaming and "hand off" of calls between adjacent Ericsson cellular radio systems. The automatic roaming feature will ultimately

permit automatic access to Ericsson systems already in operation in Los Angeles, San Francisco and San José and will provide a base for a large-area mobile telephone system.

The customer, Cellular One, is a major supplier of mobile telephone systems in attractive markets throughout the United States. It is currently creating a pan-California system that will offer customers uninterrupted service between Los Angeles and the San Joaquin Valley.

More than 18 million of California's residents are in areas that will be served by Ericsson systems.

## State of Arkansas Signs Contract for MD 110 To Link Government Agencies

Ericsson Information Systems has received a five-year contract valued at US \$8.7 m. to deliver an integrated voice-and-data communications system that will link Government agencies in the state of Arkansas in the U.S.

The MD 110 digital network, to be installed in Little Rock, the state capital, will connect approx-

imately 8,000 users in three locations, including the state capital building and the University of Arkansas. The three sites will be interconnected via a fiber optic backbone network, also to be installed by Ericsson.

Seven other leading manufacturers competed for the contract.

## EIS To Supply MD 110 To University in California

Sonoma State University in California last month became the seventh U.S. institution of higher learning to select an MD 110 communications system to be supplied by Ericsson Information Systems.

The system designed for installation at Sonoma includes an Ericsson MD 110 digital private

branch exchange and a broad band local area network. The value of the contract is US \$1.4 m.

U.S. educational institutions that have already installed MD 110 systems include San Diego State University in California and Mansfield State College in Pennsylvania.

## Ericsson Buys Signal Unit Of Finnish Fiskars

Ericsson is strengthening its competitive position in the field of road signaling systems through acquisition of the traffic electronics operations of Finland's Fiskars Group. The agreement covering the acquisition was announced late in February.

The Fiskars operations will be

merged with those of Ericsson Signal Systems AB to form a new unit within the Network Engineering and Construction Business Area. Ericsson Signal Systems has annual sales of slightly less than SEK 600 m., with 1,000 employees. It has subsidiaries in Denmark, Italy, Spain and Australia.

# THEY KNOW WE'RE IN U.S.

THE WALL STREET JOURNAL THURSDAY, MARCH 19, 1987 23

We have a word or two in response to AT&T's tough talk about us to the United States House of Representatives.

Thank you.

On March 5, 1987 a spokesperson for AT&T addressed the Commerce Consumer Protection and Competitiveness Subcommittee of the House of Representatives Committee on Energy and Commerce, and indicated that Ericsson was a major competitor to AT&T's effort in selling its telecommunications equipment in America.

For this endorsement, we are most grateful. Because we've been so busy meeting specs, making delivery deadlines and designing quality products, that we haven't taken enough time to blow our own horn. Especially when it comes to our recent successes in the United States. It took AT&T to do it for us.

AT&T asked the subcommittee to recommend that Sweden, our international headquarters, be targeted for fair-trade priorities due to our competitiveness here in the States. We couldn't agree more. We welcome AT&T and all

comers in the world telecommunications marketplace. After all, for more than 110 years we've faced fierce competition around the globe. We've had to earn our stripes everyday.

We also appreciate AT&T's challenge, because it signals to us that we are doing something right. That our products must be getting the recognition they deserve for technical excellence. That the service our people offer — while pleasing customers — must be bothering our competitors. That our business practices worry those who haven't faced open competition before. It's nice to know that one leader in the communications field recognizes the strength of another.

And for this reason, as well as their tough words, we'll be forever grateful to AT&T for their acknowledgement. Remember, we're Ericsson and we're here when you need us. And AT&T knows that as well as anyone.

**ERICSSON**  
We're here when you need us.

730 International Parkway, Richardson, Texas 75081 1-800-331-5215 (In Texas 1-800-642-6090)

**Is Ericsson a competitive factor in the U.S. market? The affirmative answer came from an unexpected source last month.**

In testimony before a subcommittee of the U.S. House of Representatives, a representative of AT&T — which long had a virtual monopoly on telecommunications in its home market — identified Ericsson as a competitor and argued for "fair trade" action against Sweden.

Ericsson's response? A full-page advertisement in The Wall Street Journal of March 19, thanking AT&T for the compliment!

**The full text of the advertisement:** "On March 5, 1987, a spokesperson for AT&T addressed the Commerce Consumer Protection and Competitiveness Subcommittee of the House of Representatives Committee on Energy and Commerce and indicated that Ericsson

was a major competitor to AT&T's effort in selling its telecommunications equipment in America.

"For this endorsement, we are most grateful. Because we've been so busy meeting specs, making delivery deadlines and designing quality products that we haven't taken enough time to blow our



own horn. Especially when it comes to our recent successes in the United States. It took AT&T to do it for us.

"AT&T asked the subcommittee to recommend that Sweden, our international headquarters, be targeted for fair-trade priorities due to our competitiveness here in

the States. We couldn't agree more. We welcome AT&T and all comers in the world telecommunications marketplace. After all, for more than 110 years, we've faced fierce competition around the globe. We've had to earn our stripes everyday.

"We also appreciate AT&T's challenge because it signals to us that we are doing something right. That our products must be getting the recognition they deserve for technical excellence. That the service our people offer — while pleasing customers — must be bothering our competitors. That our business practices worry those who haven't faced open competition before. It's nice to know that one leader in the telecommunications field recognizes the strength of another.

"And for this reason, as well as their tough words, we'll be forever grateful to AT&T for their acknowledgement. Remember, we're Ericsson, and we're here when you need us. And AT&T knows that as well as anyone."

# SIEMENS — A MULTIFACETED INTERNATIONAL COMPETITOR

Take Ericsson, put it together with Asea, add a few large Swedish computer companies, most medical instrument companies in Sweden plus graphic instruments and the production of light bulbs as well as a broad range of other industrial equipment and you get a fairly accurate picture of Siemens.

During recent years, Ericsson's West German competitor has become an increasingly tough opponent in telecommunications markets throughout the world.

Siemens is one of the largest companies in West Germany, with annual sales of nearly DEM 50 billion (more than SEK 170 billion) and approximately 300,000 employees.

For nearly 100 years, the Group has been a symbol of sophisticated German engineering. Siemens has a reputation as a stable, reliable and quality-conscious company, but is also said to be slightly "dull" and sluggish.

To a certain extent, Siemens shares its image with Ericsson. However, like the Swedish company, Siemens is now undergoing rapid transformation. Changes in the information industry, which have been close to revolutionary during recent years, call for flexibility and immediate adjustment to new market demand.

## SIEMENS

During the second half of the 1970s, the Munich-based company's profits started to decline. Widespread opinion held that management was bureaucratic and far too cautious. The appointment in 1981 of Karlheinz Kaske as President of Siemens marked the beginning of a new, aggressive era.

### Two divisions

Kaske focused future business activities on four growth areas:

- factory automation
- microcircuits
- office automation
- telecommunications

In 1981, allocations to the four areas above were equal to 25 percent of the Group's R&D budget. Corresponding allocations today have risen to 50 percent.

Combined sales of the four

One of a Series on Ericsson's Major Competitors

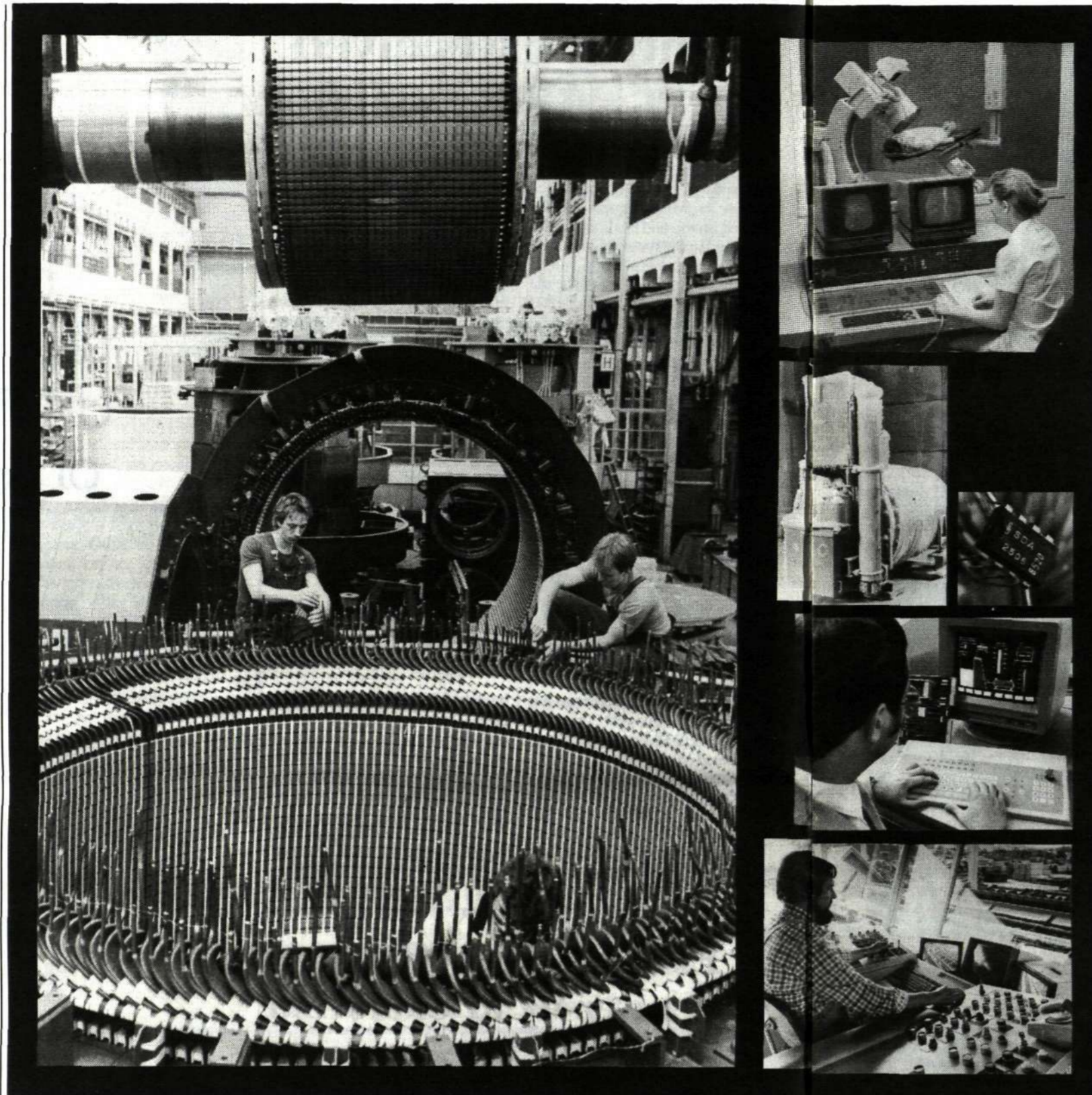
business areas now account for nearly 40 percent of consolidated invoicing by Siemens.

Telecommunications is the largest sector of Siemens today. Sales have surpassed DEM 17 billion (about SEK 60 billion), compared with Ericsson's total invoicing of slightly more than SEK 30 billion.

The business activities are divided into two divisions: one for telecommunications and security, the other for communications and information. The two divisions, whose sales are virtually equal, correspond largely with Ericsson's marketing organization, which is divided roughly between telecommunications for public networks and information systems for private networks.

## SIEMENS

But Siemens is so much more. It also includes an entire Asea for high-tension electrical equipment, from complete atomic power plants to small special engines. Sales by two large divisions of this business area amount to approximately SEK 60 billion, compared with Asea's consolidated sales of



1. Siemens supplied the equipment for one of the most powerful heavy-gauge rolling mills in the world, at AG Dillinger Hüttenwerke in West Germany. 2. The company produces advanced medical equipment. 3. A compact switchgear, assembled in the plant, ready for installation. 4. This circuit can store data for more than ten years, without risk of losing vital information. 5. Siemens has a PC system, too. 6. The company's latest computer-controlled equipment is well known in the forest products industry.

about SEK 45 billion.

### Five times larger

Siemens is one of the largest manufacturers of medical equipment in Europe, with special emphasis on X-ray equipment and pacemakers. The German company is also striving to become one of the world's leading producers of semi-conductors. In cooperation with Philips of Holland, Siemens is now involved in the so-called Mega Project, a joint project set up to develop the next generation of highly condensed memory circuits — Europe's challenge to American and Japanese manufacturers. In addition, Siemens is a large manufacturer of different types of process equipment, graphic instruments, light bulbs (Osram) and other industrial equipment.

It is thus a true giant that Ericsson competes with, more than five times larger than Ericsson (including all of Siemens) and twice as big in the field of telecommunications alone.

## SIEMENS

Like most other manufacturers of telecommunications systems throughout the world, Siemens has always been highly dependent on its domestic market. Ericsson and ITT have been unique in the industry with their high shares of invoicing in foreign markets.

### More than 40 countries

In practice, the domestic market in West Germany has always been divided between Siemens and

Standard Elektrik Lorenz, an ITT subsidiary, with Siemens holding a market share of nearly 60 percent. The West German market, one of the largest in the world, has thus been more or less closed to Ericsson.

Siemens has expanded rapidly in the international market, however, and now encounters Ericsson in virtually all parts of the world. The West German group's major competitive weapon is its digital EWSD exchange, Siemens' reply to AXE. According to widespread speculation, however, the development of EWSD involved substantial development expenses and the exchange still does not yield any profit.

It is always difficult to estimate market shares and the number of lines supplied. However, independent analysts have estimated the



Triangles show Siemens subsidiaries in more than 40 countries. Circles indicate location of sales offices in approximately 70 countries.

Siemens also says the EWSD has been sold in more than 40 countries, compared with more than 60 for AXE.

### Concentrating on the U.S.

Regardless of the reliability or accuracy of statistics published by competitors, there is no doubt that Siemens is one of the leading suppliers of public telecommunications in the world. Neither is there any doubt that the German company is a leader in the fields of office automation and private communications networks. As opposed to the losses suffered by Ericsson and other companies in information systems, the corresponding sector of Siemens is probably the German group's most profitable and expansive.

Analysts believe that Siemens has between 10 and 15 percent of the world market for private telephone exchanges and perhaps eight percent of the European computer market. Like Ericsson, Siemens is now trying hard to penetrate the American market for public exchanges. This year it seems obvious that Siemens has become Ericsson's major competitor in the battle against AT&T and Northern Telecom of the U.S. for American market shares.

### Large acquisitions

AXE and EWSD have passed the first phase of the so-called Bellcore analysis, a mandatory test of equipment, service and documentation in the U.S. Ericsson is ahead of Siemens in terms of time, however. Both companies have also won several test orders for public exchanges; Ericsson has

booked four and Siemens four.

Because of its solid financial position and profits, Siemens has also been able to make some large acquisitions in the U.S. The German group paid nearly SEK 3 billion to GTE, the American telecommunications company, for its transmission business. The acquisition included three subsidiaries in Italy, Belgium and Taiwan, all of which manufacture public exchanges.

## SIEMENS

The latter activities have been incorporated in a company owned jointly by Siemens and GTE; Siemens is the majority shareholder with 80 percent.

Siemens also controls 50 percent of Secor, the second largest U.S. supplier of fiber optics — an area characterized by rapid growth — as well as several small American telephone companies.

### Provoked authorities

The Siemens Group's large international ambitions are also reflected in its recent interest in France. Ericsson and the West Germans are on a collision course in bidding for 16 percent of CGCT, the French telecommunications company. The French Government had more or less reached a final agreement a long time ago with AT&T and Philips. Last year, however, the Government opened the bidding for a partnership in CGCT to other companies.

American telecommunications

authorities are extremely provoked over the manner in which Siemens applied political pressure to become a prospective partner in CGCT and have threatened indirectly to apply countermeasures against Siemens in the U.S. market. The outcome of the situation is still highly uncertain.

### Stronger base

Siemens has clearly strengthened its base in international telecommunications markets during the 1980s. The company is making determined efforts to build a stronger market base for its digital EWSD system. EWSD exchanges are already produced in nine

countries and the U.S. will be added to the list if order bookings warrant local production.

Backed by its highly favorable financial position (SEK 70 billion in cash assets) and large profits, Siemens will continue to be one of the world's leading international telecommunications companies and a very tough competitor for Ericsson during the years immediately ahead.

Mats Hallvarsson  
Affärsvärlden's\* New York correspondent

\* Affärsvärlden is a Swedish language business magazine.

## SIEMENS SALES AND EARNINGS (DEM billion)

	1982	1983	1984	1985	Forecast 1986
Sales	40,106	39,471	45,819	54,616	47,100
Operating earnings	2,300	2,670	3,820	4,480	5,000
Earnings before tax	2,790	3,680	5,280	6,410	6,450
Net earnings	1,320	1,780	2,170	2,840	2,980

## Forecast sales per business area, 1986, DEM billion

Components	2,100
Power equipment	12,500
Electrical installation	3,200
Communications, information	8,900
Medical technology	4,500
Telecommunications, security	8,799
Power plants	4,300
Other activities	2,900
Total	47,100

Source: Goldman Sachs

## COOPERATIVE COMPETITORS

Ericsson and Siemens may be fierce competitors in the world market for telecommunications switching equipment but they are also able to cooperate in other areas.

Earlier this year the two companies announced an agreement to cooperate on the development of a standard pan-European digital mobile telephone system. The system will be based on a "narrowband TDMA" technology and on a new structure that differs from that of present analog systems.

The "Ericsson-Siemens" system, which is part of a project supervised by CEPT/GSM, the European standards committee, is scheduled to be in commercial service around the end of 1990.

The cooperation agreement does not include switching technology for the system.

## Ericsson in Switzerland

## ON RIGHT TRACK WITH AXE, HASLER SAYS

In the three years since the Swiss PTT selected AXE for its public telephone network and decided to introduce the NMT 900 system for mobile telephony, Switzerland has become an increasingly important market for Ericsson.

By the end of this year 14 AXE exchanges are scheduled to be installed in various Swiss cities and many of the 30 mobile radio base stations now under construction are expected to be serving a total of about 25,000 subscribers.

The growing Ericsson presence in Switzerland is due in large measure to a successful cooperation with Hasler AG, its Swiss licensee. Hasler has long been recognized as one of Europe's leading suppliers of telecommunications and electronic equipment.

**Evaluation due**

Until 1984, when AXE was approved as one of three standard switching systems, Siemens and ITT had been the traditional suppliers of public network equipment to the Swiss PTT. Now the three companies share the market and the PTT plans to evaluate their systems this autumn. The evaluation had been scheduled earlier but was deferred when ITT fell nearly a year behind schedule.

Four AXE exchanges, adapted slightly to meet local Swiss requirements, have already been installed, two in Lucerne and one each in Zürich and Fribourg (a trunk exchange).

**Challenging growth**

The growth possibilities in Switzerland, a country with a population of six and a half million, are challenging.

Werner Kreis, executive vice president of Hasler, estimates that there is a potential market for 1,000 exchanges, with 3.5 million lines.

"And we are convinced that Ericsson's AXE is a very good product," he adds. "Only minor adjustments have been necessary to adapt AXE to Swiss conditions. We at Hasler have done most of the design work to adapt the system to the PTT's requirements. The work was done

here in our main plant in Bern and together with Ericsson personnel in Stockholm."

**'On right track'**

Dr. Emanuel Hafner, manager of Hasler's public telecommunications business area since October 1985, is optimistic about the future for AXE in Switzerland.

"I have a feeling we are on the right track," he says. "We delivered the first two exchanges on time and we completed the job before the others. That gives us a certain advantage. But it's not the most important one. Quality of production, and price, will be decisive."

**'Good product'**

Dr. Hafner thinks that the Swiss PTT will want a "European" system. "And we know that they are also interested in ISDN, another good Ericsson product."

A small ISDN network (Integrated Services Digital Network) serving 128 subscribers will be installed in Zürich during the latter part of the year.

"Looking back, we made the completely right choice when we selected AXE," Dr. Hafner concludes.

The Swiss market may be small but it is one of the most prestigious in the world.

Switzerland has a population of approximately 6.5 million. Zürich, famed for its banking and commercial activities, has about 357,000 inhabitants in the central city and another 835,000 in its suburbs. The capital city of Bern has about 140,000 people.

The Swiss Federal Republic was founded in 1291.

To date, all production of AXE for Switzerland has taken place in Sweden, but Hasler expects to assume responsibility for about 60 percent of the manufacturing next year.

The license also gives Hasler rights to sell AXE in Lichtenstein.

## Switzerland



Hasler has delivered four Ericsson AXE exchanges to the Swiss PTT to date. Two are in Lucerne and single exchanges have been installed in Zürich and Fribourg (a trunk exchange).

**400 Base Stations Foreseen****BRIGHT FUTURE SEEN FOR MOBILE SYSTEMS**

"We plan to install eight MTX exchanges and our goal is to attract 100,000 subscribers by the end of 1980s. We have 12,000 today."

The speaker is Kurt Klöpfer, managing director of Ericsson Radio's subsidiary in Switzerland who is also responsible for coordinating Ericsson's operations within the country.

The MTX exchange he cites is a version of the AXE exchange used in Ericsson's mobile radio systems. The figures he projects reflect only part of the anticipated growth of cellular radio in Switzerland.

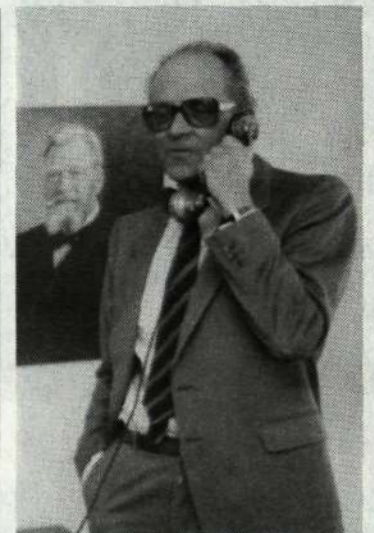
Today, for example, there are only about 30 base exchanges in the country. Plans call for a total of between 400 and 500, with a capacity to serve 250,000 mobile subscribers.

Finding suitable sites for base stations presents a special problem in Switzerland. Local municipalities and property owners fre-

quently exercise their right to refuse to allow a station to be erected. "We get an OK for only about one out of three suitable sites," Kurt Klöpfer notes.

Walter Zuberbühler, Hasler AG's marketing manager, estimates that there will be 25,000 mobile subscribers by September of this year. And he thinks this figure could rise to 160,000 by the middle of 1991.

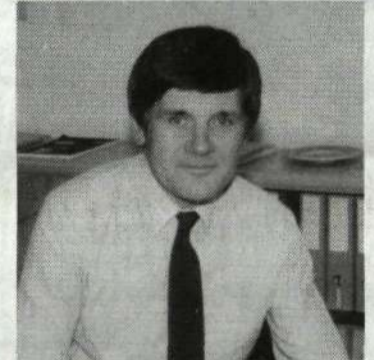
Meanwhile Hasler salesman have been busy lining up Swiss car distributors to promote the use of mobile radio systems. The General Motors organization, which sells 120,000 cars a year in Switzerland, is now installing Ericsson telephones upon request. Scan Cars, which handles Saabs, does the same.



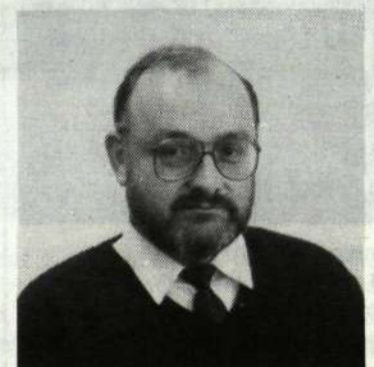
Kurt Klöpfer



Dr. Emanuel Hafner



Werner Kreis



Walter Zuberbühler

**HASLER AG**

Ericsson can claim a link with Hasler AG that even predates the establishment of the Swedish telecommunications company. Lars Magnus Ericsson began his technical career with a six-month apprenticeship at Hasler in 1874, two years before he established his own business!

And half a century later, in the 1920s, Hasler was licensed to handle Ericsson's 500-line selector switch which, in much-modified form, is still in use in parts of Switzerland.

Hasler, headquartered in Bern, makes and markets telephone and telex equipment, teleprinters, PABXs, paging systems and postage meters, among other equipment.

During 1987 Hasler is merging with Autophone, which manufactures telephone instruments, to form Ascom Holding AG. The merged organization will have annual sales of about SEK 9.1 billion, with around 13,000 employees.



Hasler AG's plant in Bern.

# ERICSSON TEAM HELPS AUSTRALIANS PLAN ISDN-PRAC

Ericsson personnel in Sweden and Australia, among other countries, are involved in a pioneering project for Telecom Australia that marks a new step in the development of the Integrated Services Digital Network (ISDN).

The project, which has already added a new bit of terminology to the lexicon of telecommunications, is known as ISDN-PRAC.

The full designation is Integrated Services Digital Network-Primary Rate Access Commercial. The CCITT technical designation is "ISDN-30B+D."

What the designations stand for is a method of connecting PABXs with ISDN subscribers to a public (AXE) telephone exchange.

Telecom Australia has classified this type of telephony and data facility as a "premium service," with banks, insurance companies and other "major" users likely to be the first subscribers.

## 100,000 man-hours required for job

It is estimated that about 100,000 man-hours of work will be required to prepare all the new designs for the ISDN-PRAC project.

The project schedule is a tight one. Telecom Australia has requested that the project be completed by January 1, and ready to be implemented commercially six months later, on July 1.

## Tests to run for six months

The six-months period will be used to conduct a number of comprehensive tests, including test commercial operations during the second quarter of 1988.

A total of eleven exchanges are being delivered to the Australian authorities in connection with the project. One, a model exchange, is being delivered to Ericsson's Australian subsidiary, LM Ericsson Pty Ltd, in Broadmeadows, outside Melbourne.

Two model exchanges will go to Telecom Australia, along with eight commercial exchanges. A total of approximately 1,200 primary accesses are involved.

## Eight exchanges set for 1987

Eight of the exchanges are being delivered during the current year and the remaining three will be delivered in 1988. The exchanges are being built in Australia as well as Sweden.

Ericsson Telecom in Stockholm is responsible for producing all the system designs. This involves a large number of new designs, notably in the "Data Transcript" area, in order to permit the handling of ISDN-specific data.

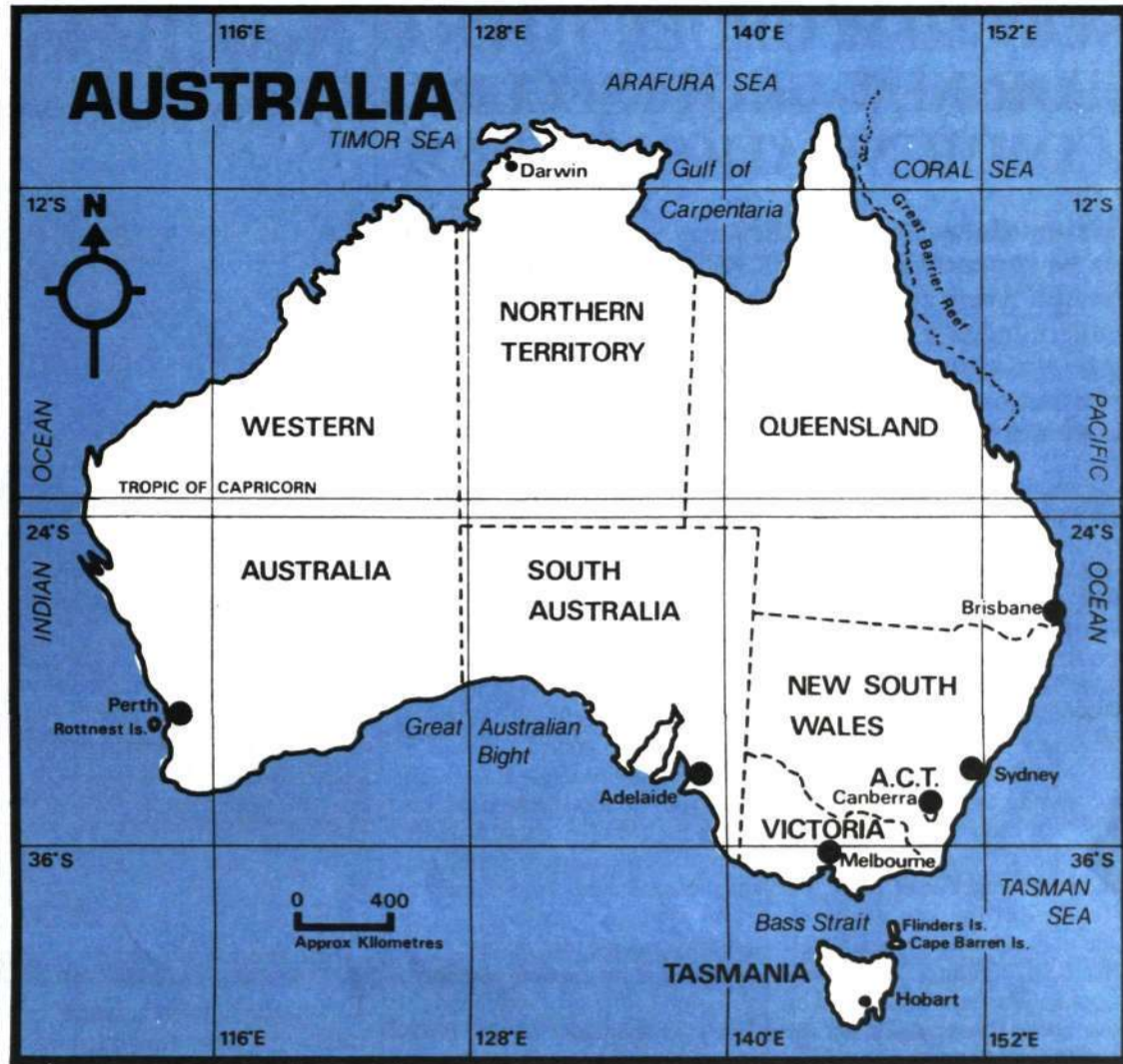
Ericsson Telecom and Ericsson Broadmeadows will install and start up the three model exchanges and will assist Telecom Australia with installation of the eight commercial exchanges.

## Will be available in six cities

Initially, the new ISDN-PRAC service will be available to subscribers in six Australian cities: Sydney, Melbourne, Canberra, Brisbane, Adelaide and Perth.

Ericsson Telecom's training department is developing and administering most of the training programs for customer personnel who will be involved in operation of the new system.

Tom-Åke Hellberg heads the group handling the project within Ericsson Telecom's marketing department for Australia.



The ISDN-PRAC service is scheduled to be offered initially in the six Australian cities indicated with the circles: Sydney, Melbourne, Canberra, Brisbane, Adelaide and Perth. The systems are due to be in commercial operation during the second half of 1988.

## Europe's first space shuttle

# ERICSSON DEVELOPING ANTENNAS

The first flight of a European space shuttle is still about a decade away but Ericsson Radio Systems (ERA) in Mölndal is already busy developing S-band antennas and other equipment for the Hermes, as the new European space vehicle has been designated.

The prime contractor for the project is CNES, the French space agency that is coordinating the preliminary studies and development work.

ERA has also submitted bids for all 19 antennas that will be part of the Hermes' equipment, as well as for a fiber optical communications network.

## Complicated project

The current project is technically complex. The antennas being designed must be able to withstand temperatures exceeding 1,200° Celsius when the shuttle reenters the atmosphere.

## HERMES

ERA is also developing a heat-diverting radome for the Hermes, assisted by the silicate research institute at Chalmers Institute of Technology.

A total of seven space shuttles in the Hermes class are planned. Four will be used during the qualification program and one will be held in reserve. Only two are scheduled to ultimately carry payloads.

The 19 antennas in each shuttle are used for seven different functions. Ericsson intends to subcontract the work on the antenna for vocal communications. The six other antenna models are used for data communication, navigation via satellite, ground stations and

space beacons, instrument flying and special radar functions.

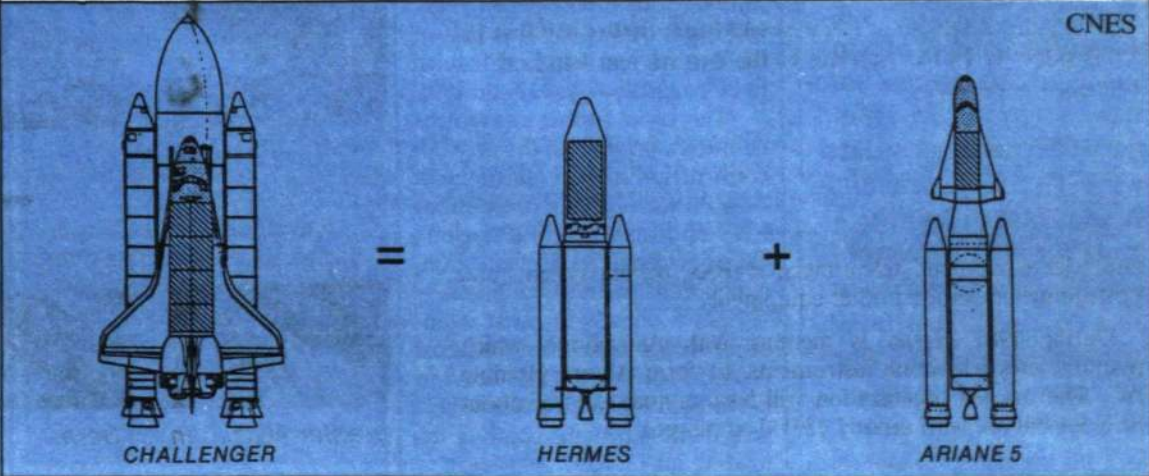
The Hermes shuttles will be used for various technical purposes and for scientific purposes. They will also be able to dock with permanent space stations and will ferry personnel between these stations and the earth.

The Hermes is considerably smaller than its American predecessors, only about half the size of the Columbia, for example. The European space vehicle is 18 meters long, ten meters wide between the wing tips, and 3.5 meters high. It will carry a crew of six.

The Hermes will be launched some time in the mid-1990s by an Ariane 5 rocket and is designed to be in space as long as 30 days before landing like a conventional aircraft. Each Hermes is expected to be used about 30 times over a 15-year period.



Here's the team handling the ISDN-PRAC project in Ericsson Telecom's marketing department for Australia. Left to right: Tor Marklund, Peter Forsström, Annica Lindqvist, Gunnar Andersson, Tom-Åke Hellberg (group leader), and Nael Salab.





## SEK 850 M. ORDER TO ERA FOR NEW ULTRA-SECURE COMMUNICATION SYSTEM

Ericsson Radio Systems (ERA) has received an order valued at approximately SEK 850 m. to supply the Swedish Army and Navy with one of the world's most modern military radio communications systems. The order was placed by the Swedish Defense Materiel Administration (FMV), which also has options for additional deliveries to be made during the years 1989-1993.

The new system, designated StarCom "Troop Radio 8000," was developed in cooperation with FMV and Marconi Defense Systems (Portsmouth, England), with whom Ericsson has worked for nearly 70 years.

"This is a breakthrough for a completely new technology and the Swedish Defense Forces will rank among the world leaders in terms of tactical radio communications," according to Åke Lundqvist, president of ERA.

Features of the new system include unusual security against interference ("jamming") and eavesdropping. The latter is achieved by transmitting ("hopping") over the entire frequency band many times per second and simultaneously encoding the transmission.

In "frequency hopping," only a limited amount of information is

transmitted over a given frequency for a fraction of a second before a new frequency is used. And it is impossible to anticipate which new frequency will be employed, since the selection is made by a built-in crypto system. In addition, the speech and data is transmitted in code.

The system includes a built-in function for transmission of text. With the aid of a special data terminal, the message can be fed into the system and transmitted in short "bursts," offering good security against interference.

The first attempts to develop a program of this type were made at ERA as long ago as the 1960s, Åke Lundqvist recalls. He is optimistic about the opportunities to market the system to defense authorities outside of Sweden.

## New Turkish Company Doing Well



Ericsson will provide a new network in the largest sector of Istanbul.

Ericsson Network Engineering's new company in Turkey has already received orders totaling SEK 220 m. and is at work on a major project to supply a local telephone network in the city of Istanbul. The company will also install local networks in Ankara, the capital city, and other locations.

The Istanbul project alone is valued at SEK 200 m. The new company, Ericsson Sebeke Insaati A.S., is supplying the network for the largest of three areas into which the city has been divided by the Turkish PTT. The Istanbul

network is scheduled to be placed in operation in 1989 and the early part of 1990.

Ericsson Sebeke Insaati, with about 140 Turkish employees, is a majority-owned subsidiary of Ericsson Network Engineering AB (ENS). ENS is supplying network construction and turnkey-project management expertise, while the Turkish owners are providing market know-how. John Erik Vesterlund is president of the Turkish company.

## ALGERIAN PTT PICKS AXE TO EXPAND TELECOM NETWORK

Ericsson's AXE system has been selected for the future expansion of the Algerian telecommunications network.

A contract, with an initial value of SEK 400 m., was signed with the Algerian Ministry of Telecommunications late in March.

"The order represents a breakthrough for us in Algeria," according to Knut Albertsson, Ericsson Telecom's marketing manager. "We have again demonstrated that the AXE system is the leader in terms of level of technology and market acceptance."

The Algerian contract, won in severe competition with other leading suppliers, is part of a long-term program of cooperation in the telecommunications field. In April 1986, during an official visit to Sweden by President Chadli of Algeria, the Swedish and Algerian Governments signed an agreement covering cooperation in telecommunications.

An agreement on industrial cooperation, involving local production of AXE equipment, has also been signed with Algerian authorities.

## SEK 500 M. CONTRACT IN THAILAND FOR MAJOR NETWORK PROJECT

Ericsson Thai Networks Company Ltd in Bangkok has received an order valued at nearly SEK 500 m. to expand the telecommunications network in Thailand. The contract, placed by the Thai Telecommunications Administration, covers the enlargement of local telecom networks in 156 locations in northeast Thailand, as well as in certain areas of Bangkok.

will be handled by Ericsson Thai Networks, a subsidiary of Ericsson Network Engineering (ENS), will begin during the first half of the current year and is scheduled to be completed by year-end 1991.

"This order further strengthens Ericsson's position in the network construction market in Southeast Asia," Björn Linton, president of ENS and manager of Ericsson's Network Engineering and Construction Business Area, noted.

ENS is already involved in another major project in Southeast Asia, supplying a large telecom network in Malaysia under a four-year, SEK 1,600 m. contract extending into 1988.

Work on the new project, which

### AXE INSTALLATIONS

- More than 3,000,000 lines of AXE were installed during 1986, an increase of 36 percent over the number installed in 1985. About 2,500,000 lines were installed in local exchanges.
- A total of 289 new AXE exchanges were placed in service in 1986.
- Including AXE exchanges in mobile cellular networks, the number of lines installed last year was 3.4 million.
- In April, 1987, 11,057,975 lines of AXE had been installed in 1,141 exchanges in 59 countries, and 6,979,073 lines were on order.
- Orders for AXE equipment have been received from a total of 69 countries.

Detailed data on AXE installations throughout the world appears in the latest (April, 1987) edition of "AXE World Survey," available from External Relations, Ericsson Telecom, S-126 25 Stockholm.

### People's Republic of China

## GROWING MARKET ACCEPTANCE AXE LINES TOP 250,000 . . .

Ericsson Telecom has now sold AXE exchanges with a total capacity of more than 250,000 lines in the People's Republic of China. The quarter-million mark was exceeded at the close of 1986 with the receipt of contracts to expand four existing AXE exchanges in the cities of Benxi and Fushun (Liaoning Province) and Shenzhen (Quandong Province).

More than 100,000 lines of AXE equipment are already in service in the People's Republic.

The recent contracts include the supply of transmission equipment and installation and training services.

Ericsson Telecom has also been selected as the approved supplier of long-distance toll exchanges in 19 Chinese cities.

## . . . and ERA Supplies Radio Systems

Ericsson Radio Systems (ERA) is currently supplying advanced radio communications systems to a number of authorities in the People's Republic of China. The systems, based on ERA's new TC 549 radio exchange, comprise base stations as well as mobile and portable equipment. A number of the

systems include mobile control centers and coding equipment.

ERA has signed a contract with a Beijing company, Jing An, whereby the latter will service the equipment. A service center for this purpose is being built in Beijing.

**Annual General Meeting  
Telefonaktiebolaget LM Ericsson  
May 19, 1987  
Stockholm**

# 'PRIORITIES IN 1987'

## New Focus Now on Business Orientation

Ericsson has three major priority areas for 1987:

### Business Orientation, Management Development, and Asset and Liability Management

CEO Björn Svedberg announced the new targets in a letter to Ericsson managers late in February in which he noted the "very positive results" of the 1986 priorities campaign.

The 1986 program had focused on efficient use of capital, cooperation between Business Areas, delivery reliability, and management development.

The new campaign represents partly an extension of last year's program — with one important addition: the emphasis on business orientation.

"We shall seize every opportunity to do business — at good prices," Mr. Svedberg said. He noted that, as a result of the rationalization and restructuring work within Ericsson during the past two years, there may have been a tendency to become "defensive" in marketing.

### Go after business

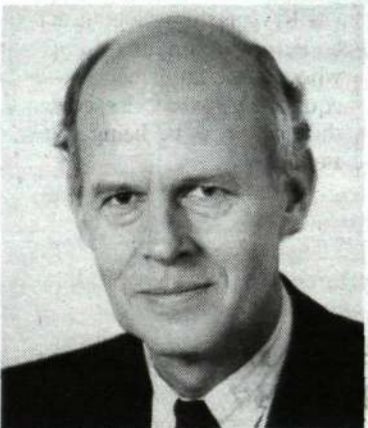
"In some areas of our operations we had to be very tough on new investments and had to reduce costs and impose other restraints. I am afraid that some people had a tendency to be defensive, not to be aggressive in the market place. We want them to release their energies and talents and go after business, sell their products in an aggressive way."

The background, strategies, long-term objectives and "instruments" of the "Priorities 1987" program are spelled out in detail in a presentation binder prepared for Ericsson managers. Additional views and comments by management executives are presented in a video film taped in English and Swedish.

Responsibility for coordinating and supervising the "Priorities 87" program has been assigned as follows.

Magnus Lemmel, Senior Vice President, Corporate Market Coordination, has been named to monitor the "Business Orientation" drive.

Rolf Skillner, Senior Vice President, Human Resources and Or-



Magnus Lemmel  
"We must not let any business opportunities slip through our fingers."

## 'Priorities 1987' in Brief

### Business Orientation

**Objective:**  
Capture each contract that "fits us."

**Strategy:**

- Target the business we want and define the resources we can apply.
- Adopt an entrepreneurial spirit.
- Be creative in going after business.
- Be persistent.

### Management Development

**Objective**  
Management through leadership, motivating all employees

**Strategy:**

- Define, distribute responsibility and authority.
- Arrange planning and development presentations.
- Develop improved, more efficient work environment.
- Sensitivity, and response, to employee attitudes.

### Asset and Liability Management

**Objective:**  
Improved cash flow, higher return on equity

**Strategy:**

- Positive cash flow (as a minimum)
- Reduce working capital by SEK 2 billion by midyear.
- No increase in working capital through 1987, despite 5-percent increase in sales.

ganization, heads the "Management Development" segment.

Carl Wilhelm Ros, Executive Vice President and Chief Financial Officer, is in charge of the "Asset and Liability Management" program.

All Ericsson managers are expected to plan appropriate activities in line with "Priorities 87" within their areas of responsibility and report regularly to the three program supervisors.

Mr. Svedberg stressed the close linkage between the three priority areas.

### Reflects change

"Our Management Development priority, for example, reflects our awareness of changing conditions in the market," he said. "We have had very good managers in Ericsson, otherwise we would not occupy the positions we have achieved through AXE and mobile telephony. But the market is changing. There is a faster pace of development in our customers' operations. And we have to change, too, to take advantage of the new opportunities. We have traditionally been functionally oriented, with specialists in marketing, technology and production. I would like to see broader-based managers — managers who are expert in a particular field but who are also able to deal knowledgeably with financial matters, who are always watching the bottom line. And that means we have to train and



Carl Wilhelm Ros  
"No increase in net working capital in 1987 despite an anticipated 5-percent increase in sales."

encourage people to think and act like presidents of their units, able to assume responsibility for total operations."

In his message to Ericsson managers accompanying materials describing "Priorities 87," Magnus Lemmel spelled out some of the objectives of the "Business Orientation" program.

"We will now proceed to more aggressive marketing ventures. Our thinking and acting and our relations with customers must be imbued with a strong will to increase business orientation."

### Customer relations

Mr. Lemmel said business orientation should be taken to mean that "we must increase pressure and

smartness in our customer relations. We must not let any business opportunities slip through our fingers."

He said this will require "creativity, persistence, professionalism, entrepreneurial spirit and — not least — ability to charge a good price, and to get it."

Carl Wilhelm Ros spelled out a number of specific short- and long-term objectives for the "Asset and Liability Management" portion of "Priorities 87."

- Working capital must not exceed 40 percent of net sales.
- Total assets must be less than total consolidated net sales.
- Positive cash flow.
- Reduction of working capital by SEK 2 billion by midyear.
- No increase in net working capital in 1987 despite an anticipated 5-percent increase in net sales.

### Tough goals

Mr. Ros concedes that these may be "tough" goals. But they are attainable and imperative, he points out. He urges Ericsson managers to be equally tough in developing and implementing measures in their own units. He notes that managers are free to use the same tools they applied during the "Efficient use of capital" campaign last year.

Reduced costs and financial strength are the most obvious

steps towards better profitability, he emphasizes.

Rolf Skillner says the purpose of the "Management Development" segment of "Priorities 87" is to "stimulate managers to interact and complement each other" as a means of achieving efficient management and leadership. Another important objective, he suggests, is to create stability in management and to continuously develop the competence of managers.

### Mature way

Referring to what he describes as a tendency of some executives to "smooth things over" rather than face problems head-on, Mr. Skillner says: "Ericsson managers have to master all aspects of leadership in a mature way."

He says experience has shown that the most effective methods of creating efficient management functions include the following:

- Clarify responsibility and authority.
- Arrange planning and development presentations.
- Be sensitive to the attitudes of all staff members and take appropriate measures.

In his letter to Ericsson managers, Björn Svedberg reminded them that "Delivery reliability" had been a priority area in 1986. This continues to be an important area, he said, indicating that the results and experience gained in 1986 now made it possible to deal with deliveries in a "normal" way this year.

### Positive program

Mr. Svedberg and the other Ericsson executives emphasized that "Priorities 87" is a positive program, based on substantial gains made throughout the organization during the past two years, and that it is not directed exclusively to managers. "We have been through a difficult period but we now have good operating routines, fine products, good marketing people — and we are beginning to move upward in an expansive market. But the competition is tough. I am confident that we have a fine platform for continuing growth, but we all have to work extremely hard to realize our objectives," he said.



Rolf Skillner  
"Ericsson managers have to master all aspects of leadership in a mature way."

# 'PROGRESS IN 1986'

## Brief Summaries of Four Projects

### How the Goals Were Defined

The case histories in the adjoining columns are examples of progress made in areas that were assigned priority in 1986 — and which continue to be important in 1987. Two of the 1986 priority areas — "Efficient use of capital" and "Management development" — have been incorporated in the "Priorities 1987" program described on another page.

Last year's priorities were defined by CEO Björn Svedberg in the following terms:

#### Efficient use of capital

"How we manage our capital is an important area. I am thinking not only of the major steps we are taking to reduce working capital. This is extremely important and has a great impact on our earnings. But we should not forget other measures to reduce the amount of capital (tied up in operations) . . .

"Prompt and concrete measures in this area will have a direct effect on our income for 1986."

#### Cooperation between Business Areas

"We must have certain basic principles with respect to cooperation, responsibility and authority between and within our Business Areas. Cooperation, however, can never be imposed through edicts and rules; it must be based on a conviction that cooperation is a good thing and that it benefits business operations . . .

"Joint action strengthens our competitiveness."

#### Delivery reliability

"Cooperation, capital management and delivery reliability are closely related. Good delivery schedules make it possible to obtain prompt payments from customers. Customers normally do not pay until 100 percent of the goods have been delivered. If one percent is missing, the delivery is not complete . . .

"Everyone who has responsibility for operating results also has a responsibility for delivery reliability . . .

"We have to achieve the same businesslike thinking and action internally as well!"

#### Management

"The manner in which we manage and control projects can significantly improve our delivery reliability. We should therefore conduct careful analyses and attempt to find ways to develop project organizations and the role of the project manager. There is a great potential for improvement and efficiency in this area . . .

"The intention is to define and broaden the role of managers so that our managers at various levels can exercise more leadership and spend less time checking details."

## EFFICIENT USE OF CAPITAL

1986

### Telecable Division Raised ROCE

The Telecable Division of Ericsson Cables has impressive figures to show for its efforts to rationalize use of capital in its operations.

While sales of the Division rose from SEK 385 m. to SEK 425 m. during 1986, capital employed in operations declined from SEK 214 m. to SEK 172 m., equivalent to a 37-percent increase in the rate of capital turnover. Most important, the Division well exceeded its prime objective, which was to achieve a return of 24 percent on capital employed.

Roger Runesson, Division Manager, notes that his unit began to get a real grip on its capital-rationalization program when Telecable was moved to Hudiksvall in 1983 and became a decentralized profit center.

The program was intensified in 1986. The overall objectives were broken down into "subobjectives" for each department and specific measures were begun throughout the Division.

Accounts receivable were reduced through more efficient supervision and follow-up. The number of versions of raw materials were limited, and various cable designs were standardized. A new production plan provided a more uniform flow of products and helped isolate — and correct — bottlenecks in production.

Inventories were cut through improved recording and control systems and the development of the computerized system used in handling orders, stockpiling and sales. Employees were encouraged to participate in setting goals and were given an opportunity to earn bonuses based on the Division's ability to exceed its return-on-capital-employed target. All supervisory personnel took part in a two-day course in capital management.

## BUSINESS AREA COORDINATION

1986

### 40 'Country Coordinators' Appointed

More than 40 "country coordinators" were appointed recently to help strengthen the basic Ericsson identity in markets where more than one Business Area is active. The appointments represented an important step toward implementing a major 1986 priority: increased cooperation among the Business Areas.

Carl-Henrik Ström, in charge of market coordination in Europe (excluding the Nordic region) and North America, is quick to point out that the country coordinators do not become operationally involved in all Ericsson activities in a given market. They serve primarily as monitors and consultants dealing in matters of general concern to Ericsson.

Their guidelines include the following responsibilities:

- To represent Ericsson on general matters, notably policy matters related to Ericsson operations in a country.
- To coordinate personnel recruiting, real estate matters, financing, advertising, contacts with public authorities and similar formalities.
- To monitor new-business opportunities.
- To coordinate the selection of consultants and agents in certain circumstances.
- To coordinate the collection and distribution of information in cooperation with the Corporate Relations staff.

The key objective, of course, is to strengthen the image of Ericsson as a single organization.

## DELIVERY RELIABILITY

1986

### Defense Division Cut Delays

The Defense Communications Division of Ericsson Radio Systems has not yet achieved its target of zero delivery delays, but it made substantial progress toward that goal during 1986.

This was the situation last spring: 52 percent of all deliveries behind schedule, average delivery delay of 30 weeks, and between 8 and 10 percent of total invoicing tied up in missed delivery schedules.

The picture was much brighter at year-end. The Division had hoped to cut the percentage of delayed deliveries to 15 percent. It actually reduced them to 33 percent, an improvement of 19 percentage units. The average 30-week delay in deliveries had been reduced to nine weeks, one week better than had been targeted. The amount of capital tied up in delayed deliveries had been cut to 6 percent of total invoicing. The target, 3 percent, was actually achieved two months later, in February.

Håkan Lundberg, Quality Control Manager of the Division, says that the encouraging results were achieved by concentrating on three areas: Maintenance of schedules, Production quality, and "Completeness," reducing the number of incomplete deliveries in a 12-month period.

"Good reliability in deliveries is of great importance for our finances and for relations with our customers," Håkan Lundberg points out. "It was important for us to reduce our poor figures. The long-term objective is naturally to reduce all the figures close to zero. By December of 1987 we should have reached that objective."

## MANAGEMENT DEVELOPMENT

1986

### An alternative to traditional careers

Ericsson Telecom took a major step in 1986 to expand the career potentials of the technicians, engineers and scientists upon whom it is highly dependent.

Taking a new approach to management development, ET introduced three new classifications for specialized personnel. The designations are designed to recognize various levels of specialist competence and to provide rewarding alternative careers paralleling those of traditional managers.

The new job classifications for specialists — the first of whom will be named this spring — may be summarized as follows:

**Specialist.** Work performed is analytical, investigative or evaluative in nature. It requires the ability to define and solve new problems, and to select work methods based on earlier experience.

**Department specialist.** The work is developmental and creative in character, involving the solution of complex problems that are largely undefined and that require new approaches.

**Expert.** To qualify for this classification, a person must have a doctoral degree or equivalent competence. The work requires continuous, demanding contacts inside and outside the organization. "Experts" will be persons who are Ericsson's leading authority in a given field, and so recognized by Ericsson's customers and business partners.

"We need our specialists," says Anne Christine Carlsson, in charge of management development at Ericsson Telecom. "Now we are taking care of them in a better way and giving them the same opportunities as our managers."

## Major Signaling Contract For Queensland Ry. Marks System Choice

Early in April Ericsson received a major order, valued at nearly SEK 60 million, to supply a signaling and fail-safe system for installation on lines operated by Queensland Railways, the railway administration of the state of Queensland, Australia.

Ericab 700, Ericsson's computerized system for automatic train control (ATC) will monitor traffic along a 600-kilometer main railway line in eastern Australia. Installation of the advanced equipment will substantially reduce the risk of train accidents and reduce stress on train operating personnel.

The system monitors a train's movements continuously, ensuring that speed limits are not exceeded. Information is transmitted from track-mounted sensors (beacons) to a microcomputer in the locomotive cab.

### Possibility for additional deliveries

"This contract indicates that Queensland Railways has now made a choice of ATC systems," Bengt Gustafsson, Manager of Ericsson's Signal Systems says. "This will give us the possibility to make additional deliveries to the Administration."

Installation of the Ericab 700 system will give Queensland Railways one of the most advanced train signaling systems in the Southern Hemisphere.

Ericsson's Signal Systems AB currently has annual sales of approximately SEK 600 m., with 1,000 employees. It is active mainly in the Nordic countries, as well as in Italy, Spain and Australia.

### EFO CONTRACT WITH U.S. CO.

Ericsson Fiber Optics AB and Luxcom Inc. of California have signed a multimillion-dollar agreement covering the manufacture of a family of fiber optic-based data communication products. The products, designed primarily for use in large buildings and campus-like environments, will be available for marketing by both companies under a cross-licensing agreement.

The agreement involves exchange of technological know-how, joint use of development resources, and provision for manufacturing cross-licenses.

The first product of the new cooperation is the Luxcom LC100/Ericsson ZAT 128-1 universal multiplexer. Among other applications, this unit supports IBM 3270 type A and BS-2332 data transmission programs.

## Setemer Shares Well Received On Milan Bourse

Published reports from Milan indicate that the listing of the shares of Ericsson's subsidiary, Setemer S.p.A., on the Milan Stock Exchange has been well received in the Italian financial market.

Public trading in the shares began early in April, following the decision last September by Ericsson and the minority shareholder to sell a small percentage of their holdings. The price of the shares rose sharply during the first week of trading. Setemer is a holding company for approximately a dozen Italian operating companies.

Setemer had a strong increase in earnings in 1986, reporting income of 34 billion lire, compared with 12 billion in 1985. Revenues in 1986 amounted to 815 billion lire.

# CONVERTIBLE DEBENTURES

## Proposed Issue To Be Limited To Employees

Ericsson's Board of Directors will ask the stockholders at the Company's Annual General Meeting on May 19 to approve the issuance of convertible debentures to Ericsson employees, giving them a further opportunity to participate in the Company's future development.

Assuming that the proposal is approved, it is expected that the subscription for shares will take place during September and October.

Under terms of the proposal, all employees in Sweden would be eligible to subscribe for the convertibles and subscription opportunities for employees in Ericsson companies outside Sweden will vary, depending on local laws and regulations. A country-by-country survey of these opportunities is currently under way.

All persons entitled to subscribe will be guaranteed an allotment of convertibles, representing 50 Ericsson shares following conversion, at a cost of about SEK 15,000 at current market prices.

A total of approximately 225 persons in management positions will be offered higher debenture allotments that vary in size depending on the level of managerial responsibility.

### Financial aid

To the degree that convertibles are available, the maximum allotment at current market prices would amount to approximately SEK 300,000. Employees will receive assistance from outside financial institutions if they wish to finance their purchases.

The Board had originally announced that it might have to reconsider its proposal if Ericsson employees could not be exempted from certain new regulations in Sweden. Under these rules, persons who borrowed money with which to purchase the convertibles



Stephan Almqvist

would have to amortize their loans at a rate of at least six percent a year.

Employees of other Swedish companies that issued convertible debentures prior to the new ruling did not have to meet this requirement.

Stephan Almqvist, Senior Vice President, Corporate Finance, does not believe the new rules will prevent the issue.

"The new rules require that loans be amortized by at least six percent per year," he notes. "Amortizing simply means that you are paying money to yourself. It should therefore be regarded as savings. You eventually get this money back, by redeeming the convertibles or by converting them to shares and selling them."

"We cannot offer our employees convertibles on the same advantageous terms employed by many other companies. But we think we have found a solution that will still make our offering attractive."

### Interest-bearing

The interest-bearing convertibles will have a maturity of slightly more than five years, according to the Board's announcement. Beginning in the second year, they may be exchanged for Ericsson B shares at a price that will be set at

the time of the offering. This price is expected to be the market price (Stock Exchange price) at the time of subscription, plus a small upward adjustment.

While the convertible debenture loan might be expected to raise an estimated SEK 700 million in new capital for Ericsson, this is not the principal reason for the proposed issue, according to Mr. Almqvist.

"The capital we will obtain can naturally help us to strengthen the trend of earnings through investments in research and development and other projects," he points out.

### Minimum risk

"But we currently have the funds we need for this. The Board's objective is to do something that is regarded as favorable by the employees. At a low cost, and with minimum risk, there will now be an opportunity to participate directly in Ericsson's future development."

Ericsson's Board and Management have been considering the possibility of an issue of convertibles for some time, Mr. Almqvist says, but action has been deferred due to the trend of earnings in recent years.

### Improvement seen

"We felt that an issue should hardly be made before a long-term improvement in earnings seemed to be discernible" he says. "The trend during the last half of 1986 indicates a gradual improvement."

Ericsson employees have had an opportunity to purchase the Company's shares with financial assistance from the Company since 1973. In addition, favorable loan terms have been offered for indirect share savings via Ericsson's Share Savings Fund and its successor, Ericssons Allemansfond (Ericsson General Savings Fund).

## Questions and Answers on Ericsson's Debenture Issue

### How will I be able to get more information on the convertible debenture offering?

If the Board's proposal is approved by the Annual General Meeting on May 19, "sales managers" will be designated in locations throughout Sweden and in other countries where the debentures can be offered. The sales managers will be responsible for providing information locally.

In addition, a brochure describing the offering and containing application forms will be sent to the home address of all eligible employees in September.

Information will also be provided through various Ericsson publications.

### What is the difference between investing in debentures and investing in Ericsson shares?

A share is a portion of the Company. When you own shares, you are entitled to vote at meetings of stockholders, to receive dividends and to participate in new issues of shares. If the price of your shares rises, you gain. If the price falls, you lose money.

A convertible debenture certificate, in contrast, is a promissory note whereby you lend money to the Company. Since you are lending the money, the Company pays you interest each year for the five-year period. The rate of interest you receive is considerably higher than the per-share dividend the

Company pays on its shares.

### How soon can I recover the money I lend the Company?

After a period of two years, and not longer than five years, you can do one of two things:

You can get your money back directly. Or you can exchange your convertible debentures for shares in the Company and then sell those shares for cash. If the market price of the shares has risen, you will have a profit on the deal (plus the interest you have received for lending the money).

If the market price has fallen, you would naturally choose to turn in your convertibles and receive the full amount you loaned

the company (plus interest). You would not be affected by a decline in the price of the shares.

### As a debenture holder, can I vote at stockholders' meetings?

No. You have to wait until you convert your debentures to shares.

### Will the debentures be traded on a stock exchange, like shares?

No. There are no plans for such trading.

### How will I know the price at which I can convert my debentures for shares?

The price will be set when the of-

fering is formally made and will remain the same during the period the debentures are outstanding.

### Why are employees in some countries likely to be excluded from the offering?

The Board has indicated that it would like to make the offering available to all of Ericsson's more than 70,000 employees throughout the world. In certain countries, however, laws and regulations related to taxes, transfers of funds, financing, registrations of loans, etc. may make this impossible or may impose special burdens on employees. The Corporate Legal Affairs Staff is studying this matter closely.

## ERA Net In Oman Completed

Ericsson Radio Systems (ERA) engineers and technicians have completed the last of 22 installations of base stations under a series of contracts that has given the Sultanate of Oman a small but highly modern mobile radio network. The initial order, placed in 1984, called for 15 base stations but was later expanded.

The 250-channel NMT 450 system today covers large parts of the national highway between the capital city of Muscat and southern Oman. Most of the subscribers are VIPs living in the area around Muscat. In addition to providing mobile connections, the system will probably also be used to provide service in homes in isolated villages along the main highways. These communities lack normal telephone connections and a "mobile" phone can become a permanent fixture in some residences. It may also be possible to use pay telephones in the Omani network in the future.

There are plans to link the Omani system with the similar NMT 450 system in neighboring Saudi Arabia.

## First ERILOCK Rail System Sold Abroad

Ericsson Signal Systems (ENR) has received its first foreign order for its ERILOCK 850 fully electronic signal-interlocking system for railways. The system will replace the existing interlocking system in the Swiss town of Gossau, in the canton of St. Gallen, served by the Swiss State Railways.

The contract was received from ENR's Swiss licensee since 1985, Integra AG, in Wallisellen. The Gossau installation is scheduled to be completed during the current year.

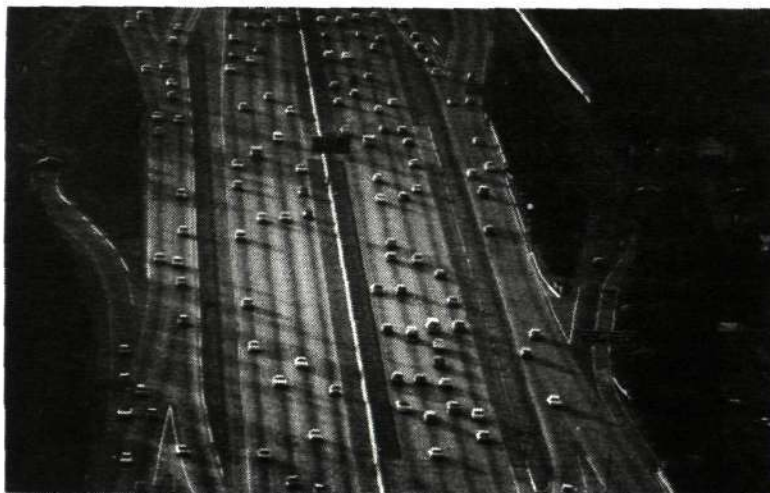
## Ericsson's Management Team January 1, 1987

Björn Svedberg, President and Chief Executive Officer.  
Arne Mohlin, Executive Vice President  
Lars Ramqvist, Executive Vice President  
Carl Wilhelm Ros, Executive Vice President

Jan Stenberg continues to be an executive vice president of the Parent Company but has left the Corporate Executive Committee to concentrate on his duties as head of the Public Telecommunications Business Area.

# CARRYING THE ERICSSON MESSAGE

## YOU'RE LOOKING AT THE VERY LATEST IN TELECOMMUNICATIONS



U.S. Route 10. The Santa Monica Freeway. One of the busiest, most congested highways in America. From the middle of a traffic jam here, Los Angeles commuters can make phone calls to anywhere in the world, and never talk to an operator.

Ericsson is providing cellular mobile telephone systems to non-wireline companies throughout California. Soon these systems will cover the Los Angeles and San Francisco/Greater Bay areas, providing the potential for one giant system serving most of the state's 24 million people.

Californians spend a great deal of time in their cars, and cellular telephoning has become popular. Businesspeople especially appreciate how effective they can be during hours spent on the road. They can even use the system to transmit data to their offices.

You'll find Ericsson cellular systems in 22 countries on five continents. In the U.S., Ericsson holds a 35% share by population of the top 90 non-wireline markets. That includes five of the top 10: Los Angeles, San Francisco, Chicago, Detroit, and Houston.

Cellular telephone systems. The latest way for you to keep business rolling.

**ERICSSON** 

Ericsson Radio Systems AB  
S-16382 Stockholm, Sweden. Telephone: +46-8-7937000.

## Ericsson Radio promotes mobile systems . . .

## THE ERICSSON CONNECTION.

This is the easy new way to spread computer power within your company.

Yesterday, computer power was reserved for the company's "heavy users" and the natural solution was to hook up a separate data network.

Tomorrow, information and computer power must be available to everyone. Throughout the company. And most people will use their equipment only a few hours each day.

Therefore our idea is the only feasible one. With our new digital office exchange you can use your existing telephone network! And plug in personal computers, word processors and terminals as easily as telephones.

This simplicity is one half of our strategy. The other half is "openness".

"Openness" to other systems, to international standards and to the future.

One example: on our new generation of terminals all you need to do is press a button to shift from IBM to DEC to Sperry, etc.

We know that this "openness" is good for our customers. But it's just as important to us at Ericsson. Without it we couldn't break into



other computer worlds and build the functional and economical information systems you need.

That's why "openness" is fundamental to us at Ericsson.

It should be equally fundamental to you. In fact, we have common interests.

**ERICSSON** 

Ericsson Information Systems.

Ericsson Information Systems AB. S-163 98 Stockholm, Sweden. Telephone: Int. +46-8-7937000.

## . . . and Information Systems makes a connection

You do not have to be very much of an old-timer at Ericsson to recall the days when large-scale international advertising was virtually unheard of.

Times change. Markets change. Customer categories change. And Ericsson changes with them. Witness the Ericsson advertising that has appeared recently in the inter-

national edition of "Business Week," one of the most respected and widely circulated magazines for business managers. Four-color double-page spreads placed by Ericsson Business Area companies are helping to consolidate their positions in international markets.

Ericsson Radio Systems AB

uses a dramatic aerial view of one of America's most heavily-traveled highways — U.S. route 10, the Santa Monica Freeway — as the background for the message that Ericsson is a world leader in the market for mobile telephone systems.

Ericsson Information Systems AB uses a powerful illustration to

promote "The Ericsson Connection," emphasizing the "openness" of the company's new digital office exchange.

The two advertisements, part of continuing Ericsson information and promotional programs, are dramatic examples of the new focus on aggressive marketing.

## 'On The Right Track'

While income and profitability in 1986 were only a little higher than in 1985, experience gained during the year indicates that, in many respects, we now seem to have learned from our mistakes. The trend of business during the second half of the year was definitely favorable.

Most of the units within Ericsson were able to fulfill their plans. The Radio Communications, Defense Systems, Network Engineering and Construction, Cables and Components Business Areas — in particular — can be proud of their achievements.

The plans were characterized by realism. Negative surprises in the form of deviations from budget or delays were avoided.

### Positive cash flow

For the first time in many years, we have had a clearly positive cash flow. Our equity ratio is almost back to its 1983 level. Many units have devoted an exceptional amount of work to the problem of handling their capital resources more efficiently.

Like the financial analysts who study us (see separate article), we are beginning to understand that we have to compare ourselves with our competitors. If conditions require that we have to live with margins that are lower than in other industries, we naturally have to adapt our operations and our resources to these conditions. More and more analysts are beginning to understand the unusual market in which we operate, and our strategy for long-term growth and for maintaining our position as an independent enterprise.

### Self-confidence

We now have the experience of 1986 behind us, and we have seen the results of our restructuring efforts during the second half of the year. We can now tackle 1987 with greater self-confidence. Continued emphasis on EFFICIENT USE OF CAPITAL, a priority area in 1986, should give us greater freedom of action to put all our energies behind BUSINESS ORIENTATION, a new priority area in 1987.

If we then focus on stepping up the pace of our efforts to achieve a more profitable Ericsson, we will be in a secure position to concentrate on the proposed issue of convertible debentures.

C W Ros  
Executive Vice President  
and Chief Financial Officer

## 'ROAD SHOWS'

The good marks that Ericsson has received lately for the quality of its financial reporting are not the result of a continuing flow of press releases alone. Top management has contributed — and is contributing — significantly. Chief Executive Officer Björn Svedberg and other senior executives not only meet members of the financial community frequently in Stockholm, they also "take the show on the road," presenting the Ericsson story in key international financial centers.

During the space of a single week recently, the Svedberg team traveled more than 10,000 miles to meet with stockholders, professional investors and financial analysts in New York, Boston, Los Angeles and London.

And the trip was only one of a number that are scheduled at regular intervals.

## Earnings Up

Continued from page 1

operating income. All other Business Areas operated profitably, with Defense Systems showing the largest gain.

The lower level of investments in the Middle East, Southeast Asia and a large part of Latin America — traditionally important markets for Ericsson — were a factor in the lower sales and order bookings in 1986.

The decline in these areas was offset to a degree by growth in Europe, where Ericsson strengthened its market positions.

As a result of the rationalization measures undertaken last year, Ericsson entered 1987 in a much stronger financial position. The rate of capital turnover improved and the amount of money tied up in accounts receivable and inventories both declined.

## Bundespost Contract

Continued from page 1

most demanding customers for information systems, Mr. Larsson said of the first contract: "We are proud of the fact that the Bundespost has chosen Ericsson. The contract is a clear signal to all companies thinking of investing in information systems that Ericsson is ahead in this market."

Claes Thorson, Ericsson Information's press spokesman, noted that the Bundespost had selected Ericsson equipment "because it includes the very latest technology" and because of the equipment's modular design, "which permits optimal adaptation to the customer's needs."

# Ericsson in Bid for CGCT

Senior officers of telecommunications companies in the United States, West Germany, Sweden and Holland, among other countries, will be anxiously awaiting a telephone call from Paris on or about April 30.

No later than that date, according to published reports, the French government is expected to announce the name of the company that will be permitted to acquire all or part of CGCT (Cie. des Constructions Telephoniques), the state-controlled telecommunications manufacturer.

The successful nominee will win a rich prize — access to about 16 percent of the French market for telecom switching systems — but will also face problems in restructuring CGCT to make it profitable.

Ericsson is part of a French-

**STOP  
PRESS  
APRIL 23  
ERICSSON AND  
PARTNERS BID  
ACCEPTED**

Swedish consortium that has submitted a proposal for the privatization of CGCT. The other leading bidders, all except one of whom presented their proposals early in March, include AT&T-Philips and Siemens. Italtel has requested an extension of time that would permit it to prepare a more detailed proposal.

Ericsson's French partners are

the Matra Group, a diversified group with substantial operations in the telecommunications field; the Bouygues Group, a world leader in the construction field; and Bank Indosuez, one of France's most-respected financial institutions.

The announcement of the French-Swedish proposal, as translated, said:

"The partners have the deep conviction that they can make CGCT a profitable company, with a lasting French majority, exploiting in France the outstanding technological capability of Ericsson in public switching, and CGCT experience and know-how.

"Matra and Ericsson intend to develop intensively their industrial and technological cooperation, in which Bouygues will participate in telecommunications services."

## Latin American Orders

Continued from page 1

already in service in the country.

In Venezuela, CANTV, the national authority, has placed a SEK 344.5 m. contract for digital AXE telephone exchanges and related systems for the Venezuelan public telephone network.

Under the contract, 22 new digital exchanges will be added to the network and an Ericsson "AOM" network management system will be installed, along with transmission and power equipment.

The order from CANTV was the second large contract placed

with Ericsson in a period of six months. Last August CANTV ordered a number of digital AXE exchanges valued at SEK 84.5 m. The first unit, a 6,000-line local exchange, was placed in service at the end of December, only four months following the contract signing.

The equipment being supplied by Ericsson is part of the program to provide a fully digital network for approximately one million Venezuelan subscribers, giving them access to one of the most modern public networks in Latin America.

## Contract from BellSouth

Continued from page 1

The switches will be used in BellSouth's common channel signaling 7 network, which transfers signals and data between telephone central offices (exchanges).

The switches will be implemented in a mated pair in Memphis, Tennessee for an initial BellSouth office application early in 1988.

Ted Franks, vice president of Network Systems Division in

Ericsson's U.S. subsidiary, described AXE as a "multi-application product."

"It can serve the needs of an operating company as STP," he said, "or in the forms of Class 5 end-office and access tandem in one switch, if so equipped."

"Ericsson is on target for U.S. market development," Mr. Franks noted.

## ERICSSON SELLS INTEREST IN PROGRAMATIC

Ericsson has sold its 60-percent interest in Ericsson Programatic, a software and data processing consultancy, to the former joint owner, Programator. The Programatic organization, which is represented in Germany, Holland, Belgium, Austria, Switzerland and Spain, as well as in Sweden, will continue to provide customer support to users of Ericsson's data products.

The Ericsson Programatic operation in Karlstad, Sweden, will continue to be jointly owned.

**Contact**

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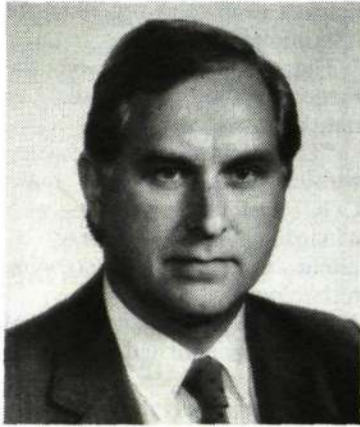
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Swedish texts of articles in this edition were prepared by Mats Hallvarsson (Siemens and Analysts); Johan Bergström (Fiber Optics); Anna Maj Björneberg (Risk Manager); Grethe Hellquist (Boss's Secretary); and Tom-Ake Hellberg (ISDN-PRAC), among others.

## Lars Ramqvist New Member Of Academy In Sweden



Lars Ramqvist, executive vice president of Ericsson, was one of ten new members elected to the prestigious Royal Swedish Academy of Engineering Sciences recently.

Mr. Ramqvist, whose doctoral thesis at Uppsala University in 1969 dealt with electron structure in metallic carbides, was managing director of the Axel Johnson Institute for Industrial Research before joining Ericsson in 1982. Before being named a member of Ericsson's Corporate Executive Committee, Lars Ramqvist was President of the RIFA subsidiary and head of Business Area Components.

## Doctorate for Olof Dahlsjö At Chalmers



H.M. King Carl XVI Gustaf of Sweden receives a brief rundown on state-of-the-art antenna technology from Olof Dahlsjö, right.

Olof Dahlsjö, manager of the antenna department at Ericsson Radio Systems in Mölndal, has been designated to receive an honorary doctorate degree from Chalmers Institute of Technology in Gothenburg. The degree will be conferred during formal ceremonies on May 23.

An Ericsson employee since 1960, in what was then known as the "MI Division," Olof Dahlsjö has been closely associated with pioneering developments in the field of antenna and radar technology. He headed teams that developed advanced radars for Sweden's Draken and Viggen military aircraft and has played a prominent role in developing lightweight composite fiber antennas used in space satellites.

# THE BOSS'S SECRETARY

## Ann Kashef's Job Demands Exceptional Skills

Secretaries today are highly versatile. They must be well-informed, committed and able to take the initiative in making difficult decisions.

Whenever a manager is able to establish an efficient working relationship with his or her secretary, the job becomes highly stimulating and thereby contributes to personal development.

### Ann Kashef is a good example.

For most of us, Ann Kashef is a relatively anonymous employee of Ericsson. Nevertheless, she has a key role that makes her a power factor in the Group. Ms. Kashef is Björn Svedberg's secretary and Mr. Svedberg, of course, is the President and CEO of the Ericsson Group. Ann has worked as a secretary since she joined Ericsson in 1965 and she has been Mr. Svedberg's personal secretary since 1977. Before joining the Group, Ann studied Latin in high school, attended the Pählman Secretarial School in Stockholm and worked for two and a half years in a bank.

### Ann, describe a normal day at the office

It starts early and ends late. The pace is fast and hectic. I spend a large part of my time talking on the telephone. All calls to Mr. Svedberg go through me and I actually handle many of them myself. He would never have time to talk to everybody who calls. There are quite a number of things I can take care of without involving Mr. Svedberg.

### Is the procedure the same for people who wish to see him?

In some ways, yes. One of my responsibilities is to relieve Mr. Svedberg of as much work as I can. When he is away on business, which is often, of course, I assume practical responsibility. I handle contacts with people who wish to see him. I also arrange and rearrange meetings, take care of the mail and answer his correspondence.

### In other words, you have considerable control over Mr. Svedberg's schedule and decide whom he talks with and meets?

I take an active part in reducing his workload. It's up to me to make sure that his schedule functions as practically and efficiently as possible.



PORTRAIT OF A WORKING TEAM. The efficiency of modern management depends to a high degree on the skills — and long hours — of competent secretaries. CEO Björn Svedberg checks a document with Ann Kashef, who heads Ericsson management's secretarial group.

### So it's important to be on good terms with you in order to meet the boss?

(Laughter) Perhaps. But everything I do is based directly or indirectly on what he wants.

### Mr. Svedberg has a heavy workload. Do you have time to keep him informed of everything that goes on?

I get all the information he has time to give me. I also get a great deal of information through other channels, both internal and external. I am in contact with him daily whenever he is away on business, regardless of whether he is in Sweden or abroad.

### Because of the nature of your job, you must have access to highly

### sensitive and confidential information. You probably know more than many executives in the Group. How do you handle the responsibility?

Access to confidential information is a natural part of the job and treating it accordingly is only one of many responsibilities.

### How much responsibility does Mr. Svedberg delegate to you?

Within reason, as much as he thinks I can handle, with no specific limitations.

### Is it important that he expresses opinions on how you handle your job?

Of course. I want to do a good job. I often handle many different tasks and details over which he

has little or no influence. That's why it is important that he says what he thinks. And he does.

### What are the most important qualifications for your job?

Independence, flexibility, patience during particularly hectic periods and the ability to be service-minded.

### What are the most attractive features of the job?

I especially like the enormous variation as well as all the external contacts, even the stress, and of course the inspiration generated by responsibility. Every day is different from all others. It suits me perfectly!