

Contact

ERICSSON 

MANAGEMENT

INFORMATION FOR ERICSSON MANAGERS WORLDWIDE

No. 4/AUGUST 1988

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Earnings Improve During First Half

Ericsson's consolidated income for the first six months of 1988 improved markedly, compared with the same period last year. This was achieved despite the strong adverse impact on income as a result of the labor market conflict in Sweden at the beginning of the year. All business areas reported favorable operating income as well as an improvement compared with 1987, except for Defense Systems. The improvement in income, before appropriations and taxes, was 55 percent. The increase in income, excluding capital gains, was SEK 497 million. The improvement is attributable mainly to higher gross margins as well as a favorable trend for expenses and net financial expenses.

Order bookings amounted to SEK 15,391 million (15,218 million in the corresponding period 1987). Net sales totaled SEK 13,607 million (14,715). Income before appropriations and taxes was SEK 633 million (409), of which capital gains accounted for SEK 2 million (275). Income per share after taxes paid was SEK 7.62 (6.32). After taxes paid and estimated deferred taxes on appropriations, income per share was SEK 10.00 (8.57).

The decline in net sales is a result of the concentration undertaken by Ericsson with the divestment of the Data Systems and Office Equipment Divisions, part of the cable operations in the U.S. and the

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Executive Changes Are Announced

The international market for mobile communications will expand rapidly in the immediate years ahead. As a result, the Radio Communications Business Area has gained increasing importance to Ericsson.

For more than a decade, Åke Lundqvist has managed and expanded the radio communication operations at Ericsson in an exemplary manner to the scope of significance it has today. Considering the growth phase that the business area is now entering, Åke Lundqvist has requested to be relieved from the operational management of the business area. In future, he will be involved in the management of Ericsson and the business area as a senior

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BCS 150 Kickoff Set for Belgium

Kickoff of the BCS 150, the new digital business communications system, will take place in Belgium, September 5 through 8, with seminars for selected customers.

This product is designed to meet the requirements of organizations needing from 10 to 150 extensions and up to 40 trunks, thus making it a strategic complement to the MD110, which becomes a viable consideration when networking and extensive data communication is required.

No need for a separate answering machine, intercom and paging system since data, text and voice are easily handled by the BCS 150.

The BCS 150 is fully digital and offers flexibility for a combination of Automatic Call Distribution (ACD) groups, key system groups ringing into a group simultaneously and operator-assisted calls that must be directed to a specific person. Several companies may also share the services provided by a central system.

System benefits are extensive: high accessibility for companies that can't afford to miss calls because it often means the direct loss of business. The call will be answered or the caller will receive a message by voice or text regarding the situation. Messages may be left in either text or voice.

The BCS 150 will initially be launched in Belgium, Germany, the Nether-

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CEO Björn Svedberg meets with Spain's King Juan Carlos in Madrid.

Spain Poised for Growth

Ericsson's Intelsa Subsidiary Boosts Order With Fourfold Increase From Telefónica

"We in Spain have always lagged behind, but that is going to change. This time around we are going to catch the train of modernization; we are going to catch the train into the 21st century."

With this campaign promise, Prime Minister Felipe González, speaking before a capacity crowd at the bullring in Zaragoza,

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Continued Emphasis On Systems Integration

"In order to optimize our market possibilities, we have to continue the ongoing integration projects of our systems and products," says Lars Ramqvist, the new head of Business Area Radio Communications. "The Ericsson strategy is based on this integration and must continue."

Ramqvist will continue this work within the Executive Committee, while continuing as chairman of Ericsson Components and maintaining the role of coordinator for Texas Instrument's cooperation in micro-electronics.

"Cooperation is the key word for our future," says Ramqvist.

Australian Orders for \$95 Million

Ericsson has received two large orders worth a total of AUD 126 million (approx USD 95 million) from Telecom Australia.

One contract, worth AUD 24 million (approx USD 18 million), is for radio base station equipment to be used in the AXE-based Australian cellular mobile telephone network. Three years ago, Australia chose Ericsson's AXE system for its mobile telephony, and now has 30,000 subscribers in major metropolitan areas such as Sydney, Melbourne, Brisbane and Adelaide.

Ericsson Australia will manufacture the radio base station equipment in its plant in Melbourne. Delivery will take place during 1988 and 1989.

The other contract, also signed between Ericsson Australia and Telecom Australia, is valued at AUD 102 million (approx USD 77 million). This bulk order from the Australian PTT covers AXE digital equipment for new local, transit and trunk exchanges, as well as extensions of already existing exchanges, in all states.

The AXE equipment, which includes more than 160,000 local lines, will be manufactured at Ericsson Australia's large plant in Melbourne for delivery during 1988 and 1989.

Since Telecom Australia chose Ericsson's AXE system in 1977, Australia has benefited from a continuous evolution of technology and services.

Six-Month Report, 1988

CONSOLIDATED CONDENSED FINANCIAL DATA

(Amounts in SEK millions, except per share values.)
(The conversion rate is SEK 6.25 to the US dollar.)

	Jan.-June 1988	Jan.-June 1987	Jan.-June 1986
Net sales	13,607	14,715	17,685
Order bookings	15,391	15,218	18,187
Order backlog at year-end	24,927	23,717	24,171
Income before appropriations and taxes	633	409	699
Income after taxes paid ⁽¹⁾	291	241	433
Income after taxes paid and estimated deferred taxes on appropriations	382	327	409
Number of shares outstanding, millions	38	38	38
Adjusted net income per share after taxes paid	7.62	6.32	11.58
Net income per share, after taxes paid and estimated deferred taxes on appropriations	10.00	8.57	10.69

⁽¹⁾ Period's portion of estimated taxes paid for the full year.

SALES BY BUSINESS AREA

(in SEK millions)

	Jan.-June 1988	Jan.-June 1987	July-Dec. 1987
Public Telecommunications	6,263	5,582	6,665
Radio Communications	2,085	1,217	1,666
Business Communications ⁽¹⁾	1,528	1,502	2,092
Network Engineering and Construction	1,267	1,031	1,453
Cables	1,584	1,674	1,787
Components	896	849	961
Defense Systems	1,236	1,484	1,888
Other operations	561	3,172	3,434
Less: Intersegment sales	-1,786	-1,796	-2,261
	13,607	14,715	17,685

⁽¹⁾ Figures for 1987 pertaining to operations divested in Information Systems are reported under "Other operations".

OPERATIONS IN BRIEF

- **Business Area Public Telecommunications** — Reported an increase in order bookings of 28 percent and in net sales of 12 percent, with a strong improvement in income. In addition to countries in Europe, major orders were noted from Australia, China, Colombia and Algeria. The U.S. market will probably be characterized by a slower rate of replacement investments than expected.
- **Business Area Radio Communications** — Also showed a sharp improvement in income. Order bookings rose 60 percent, mainly due to large orders for mobile telephone systems in Europe, the U.S. and the Far East. Net sales increased 71 percent, which is partly attributable to the transfer of operations from Defense Systems.
- **Business Area Business Communications** — Order bookings and net sales rose 3 and 2 percent respectively in Business Communications for comparable units. The main product in this business area, formed following the divestment of the other operations in Information Systems at the beginning of the year, is the MD110 private business exchange. Market successes for the MD110 resulted in a significant income improvement.
- **Business Area Network Engineering and Construction** — Reported a 17-percent increase in order bookings, among other developments as a result of increased demand for local networks in Italy, an order for a signal system in Taiwan and an important order from Swedish Railways for the Central Station in Stockholm. Sales rose 23 percent. As in the first half of the preceding year, income was weak.
- **Business Area Cables** — During the reporting period Cables completed the divestments of operations in the U.S., which explains the decline in order bookings by 9 percent and sales by 5 percent. Results clearly improved.
- **Business Area Components** — Having divested the capacitor operations, components has also had a favorable efficiency and volume trend in the remaining units, and results were improved. Order bookings as well as sales rose 2 percent. For comparable units, the increase was 26 and 20 percent respectively.
- **Business Area Defense Systems** — Part of the reported increase of 74 percent in order bookings for Defense Systems is attributable to previous organizational changes. Order bookings were lower than expected, as were sales, which declined 17 percent. Results were adversely affected by increased costs for control systems and the JAS aircraft project.

President's Comments

Objectives and Profitability

"It is with satisfaction that I can confirm that the objectives we set are now yielding visible results. We have not only succeeded in maintaining market shares in the systems areas that are of the utmost

in the U.S., Spain and France. Now, we have continued this in Great Britain at the same time as we have made acquisitions in Sweden increasing our capacity in one of the most rapidly expanding areas — mobile telephony.

We have accomplished these aggressive investments during the first half-year while we also completed the divestment of some operations that were no longer of strategic importance to the company. In spite of this, the increase in order bookings demonstrates that our strategy is viable.

Now, we will continue to prepare ourselves for the 1990s. One step was taken when we received the first order in Great Britain for the new European mobile telephone system, which will be established in 16 countries by 1991. We have been leaders in the development of this next generation of mobile communication and will participate in the first installations.

Our development efforts continue at an undiminished pace. We will see to it that we have the resources required to be leaders in the development of future telecommunications systems. Increasing volumes for our systems and the endurance demonstrated are also of decisive importance for the company.

At the same time as I want to emphasize the requirement for continued strong commitment and carefully evaluated and concentrated efforts, I look forward to the future with great confidence. We are on the right track toward the profitability we should have"



Björn Svedberg

importance to us; we have succeeded in strengthening our position in a tough, competitive environment. This was accomplished while, at the same time, sharply improving our profitability.

Through our continued strong efforts in the areas of our major strengths, with advanced telecommunications as the core, we have most importantly prepared ourselves for the future. Previously, we have made aggressive investments through buy-outs of strategically important operations

Earnings Improve During First Half

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capacitor operations. However, for comparable units, sales rose 10 percent. Despite the divestments, order bookings rose slightly. The increase in order bookings for comparable units was 28 percent.

A sharp increase in demand for Ericsson's advanced telecommunication systems was noted during the period.

The successful market investments, combined with the structural changes carried out, are expected to result in a continued improvement in profitability during the second half of the year. For the full year, a positive cash flow and a further improvement in the equity ratio is anticipated.

Executive Changes Are Announced

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executive of the Parent Company reporting directly to Björn Svedberg. His responsibilities will include certain board assignments, such as vice chairman of Ericsson Radio Systems AB.

Effective Oct. 1, 1988, Lars Ramqvist, executive vice president of the Parent Company, will become head of the Radio Communications Business Area and assume the position of president of Ericsson Radio Systems AB. He remains chairman of the board of Ericsson Components AB.

As of Oct. 1, 1988, Ericsson's Corporate Executive Committee will consist of Björn Svedberg, Lars Ramqvist, C. W. Ros and Jan Stenberg.

STOCK QUOTATIONS

1988 Week of:	Stockholm Stock Exchange			NASDAQ		
	HIGH	SEK LOW	VOLUME	HIGH	USD LOW	VOLUME
May 20	256	238	703,691	42	39¾	128,200
May 27	257	252	141,828	42⅞	42¼	86,800
June 3	263	255	296,700	43⅝	41⅞	142,873
June 10	257	251	175,860	42⅝	41¾	51,600
June 17	257	251	303,700	42½	41¼	39,200
June 24	252	245	194,200	41	40⅞	64,800
July 1	243	240	40,700	40	36⅞	79,200
July 8	253	240	204,920	39⅝	37⅞	57,700
July 15	255	250	171,460	40⅞	39¾	43,700
July 22	254	251	174,388	39⅝	39½	36,700
July 29	260	251	196,336	40¼	39¼	34,200
Aug. 5	264	258	90,500	40¾	40⅞	29,000
Aug. 12	260	248	134,000	40	39¼	80,700
Aug. 19	263	253	151,250	40	38¾	121,400

Growth in Spain

Intelsa Boosts Orders With Fourfold Increase

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set the stage for the development of telecommunications in Spain.

And Intelsa, Ericsson's wholly owned affiliate in Spain, is working hand in hand with Telefónica, the Spanish communications concern, to see to it that the prime minister's promises are fulfilled.

Telefónica has a four-year investment plan through 1990, totaling about \$10 billion, aimed at improving Spain's communications network. The four-year spending plan intends to extend the country's phone network to provide 30 main lines for every 100 inhabitants, compared with the 25 lines at the beginning of 1987.

Telefónica's modernization program includes expanding its telephone network to meet demand, replacing crossbar and rotary switching equipment with digital systems and investing in new equipment that avoids a whole generation of electronic analog technology that other companies used as an intermediate modernization method.

Bo Landin, Ericsson Senior Vice President, Corporate Market Coordination, Europe and North America, speaking of marketing prospects in Spain, says: "The economy of Spain has really taken off following membership in the European Community, and Ericsson is well placed to participate in this growth by its presence in the Spanish market as an industrial unit. We are also planning to reorganize our activities in Spain in order to be available as the market dictates. We also intend to widen our spectrum of activities into areas where we are not as strong as in public telecommunications and private telecommunications today. That means that we are aiming at activities such as those relating to Business Area Defense, Busi-



regard to technology and products is increasing all the time," says Leif Källén, president of Intelsa.

Intelsa currently has a market share of more than 50 percent of the electronic switching market within the Spanish telephone network, which means that Intelsa technology and products today are providing the base for the buildup of the modern digital telephone network in Spain, Källén says. Moreover, Intelsa has just entered the transmission field with equipment for fiber optics.

The interface between Telefónica and Intelsa is extremely broad and the contacts and discussions are continuous and daily, Källén notes. The interface covers all aspects of the development of a telephone network, from discussions of network components, network facilities, as well as products and their timing of introduction into the network. In the following steps, there are discussions about the yearly installation programs, definition of exchanges, collaborating during the installation phase, to conclude with joint maintenance during the first months after cut-over.

"In short," says Källén, "we think we have an excellent working relationship with Telefónica, which is absolutely necessary to assist Telefónica in coping with the extremely sharp growth of the Spanish network."

Telefónica owned 49 percent of Intelsa up to 1987, when it sold its share to Ericsson. Intelsa is now 100-percent owned by Ericsson. The two companies continue to have joint export activities for the Ibercom systems.

"The Ibercom service, which forms part of the public network, is offered basically to business customers," Källén says. "The Ibercom concept is to provide the customers with new facilities, which we might call pre-ISDN, but at the same time using the public network as carrier."

The facilities offered to the customer, such as virtual network, voice and data, access to the Spanish packet-switch network etc., are gradually introduced ac-



Leif Källén

ording to plan. Källén points out that Telefónica is enjoying such success with this service that they are having difficulties in coping with customer demands.

It is interesting to note that Telefónica has been able to attract several prestige customers to the Ibercom service, among them the Madrid stock exchange and the prime minister's office.

Speaking about the staff composition of Intelsa, Källén notes: "Intelsa is very much a Spanish company, in that almost 100 percent of its employees are Spanish. There are several hundred Spanish engineers and technicians with long 'on the job' experience. This is of fundamental importance since Telefónica is requesting support from a company that has proven its competence in Spain and is consequently able to respond quickly to the demands from Telefónica."

"At the same time," Källén adds, "Intelsa is clearly part of the Ericsson world, which is of great importance when it comes to technology and support to meet specific delivery demands or to solve specific technical problems."

This year, Intelsa is expected to deliver 800,000 lines to Telefónica, and next year more than 900,000 lines, a fourfold increase over recent years.

Källén points out that the large increase in volume has led him to turn to Sweden for help in reaching his target. He hastens to add, however, that although the Swedish input is important for Intelsa, it continues to remain a very Spanish company.

"Intelsa has its own Spanish image and identity," he emphasizes.

Supporting the concept of Spain as a vanguard market for telecommunications on the Iberian peninsula, Landin says: "Spain will be one of the most important markets for Ericsson. One where the volumes, especially in public telecommunications, will be very big and, in fact, on a level with the larger markets in Europe. That is to say something like 1.5 million lines per year. It's a volume market, and we expect to have a big share of that market."

Landin goes on to point out that "we will see Spain as one of our key markets in Europe."

"We will cover Spain so that, more or less, all business areas will be active there," he says. It will rank very high because of two key dimensions: volume and the broad spectrum of activities."

Ericsson in Spain

Ericsson has been in Spain since the 1920s, where it began operations with somewhat limited activities. It made a major breakthrough in switching in the late sixties, and since then it has built up this new position as a major manufacturer and supplier through Intelsa.

Today, Ericsson has about 40 percent of the Spanish market for public telecommunications.

The new fields that Ericsson is aiming at for the moment are related to Business Area Defense and Business Area Construction and Network Engineering. Ericsson is also looking for possibilities to cooperate with Spanish partners in those fields.

A newly established holding company will function as the coordinating body for Ericsson's activities in Spain. The operational responsibility for each area will, of course, be fully on the companies belonging to that holding company, and with a

direct operational link to the business areas in Stockholm.

The plan calls for taking out of Intelsa the business for defense and later applying the same method of transfer for Business Area Radio and Business Area Business Communications.

On the defense side, Ericsson already has a good market in Spain. "We believe that Spanish defense would be interested in other products within the radar field and that's why we are setting up this company," Bo Landin, Ericsson Senior Vice President, Corporate Market Coordinator, Europe and North America, points out.

Intelsa's position in Spain places it ideally as a springboard for Latin American exports. It already does so to a considerable extent, although the bulk of its production is primarily for the domestic market.



Inspecting a circuit board at the Intelsa factory in Leganés.

ness Area Radio and Business Area network Engineering."

In principle, Ericsson operations out of Madrid are concentrated basically in one company, Intelsa, which has an independent research and development arm, Telemaco. However, Landin says, a holding company, Ericsson S.A., has recently been established for activities in Spain, and there are plans to set up separate companies for various areas of activities in order to have a more powerful organization to meet the different demands of the various market segments that Ericsson is aiming at.

"Intelsa is becoming a larger and more fullfledged telecommunications company in Spain and, consequently, its input with

Spreading Out

MD110 in America Exceeds Expectations

Sales during the past months of this year of Ericsson's private exchange, MD 110, have exceeded all expectations in the American market. Several important orders have been obtained in keen competition with the American giants and more orders are pending.

Today, there are nearly 100 MD110 exchanges in the U.S. The American market has an annual turnover of about \$8 billion (SEK 48 billion) and an annual growth rate of about five percent.

The latest installation was for the city administration of Phoenix, Arizona, the eighth-largest city in the U.S. This installation covers 8,000 lines and is the largest separate order obtained so far. Humboldt State University of California and the University of California in San Diego have also chosen MD110. Universities and other public administrations have become an important market in the U.S. for Ericsson Business Communications. Today, 10 universities have MD110 and the market is growing.

"The architecture we can offer is particularly well-adapted to the public sector," says Bill McGarrity, who is responsible for the private exchange activities at Ericsson's head office in Richardson, Texas. "MD110 is superior to all other systems in the market for activities that are widely spread geographically. We can combine an unlimited number of units and the geographical distances do not matter. There are MD110 installations in Australia with a geographical distance between two units, equal to the distance between Stockholm and Moscow."

Today's telephone exchanges — whether they are public telephone exchanges or private exchanges — are nothing but powerful computers with special software. The decisive difference between MD110 and the competitors' systems is the location of the computer power.

The traditional exchange has a central "giant computer," which serves all who are connected to the system. For security reasons, there are often two sets of this computer, but this is not enough for all types of events.

MD110 has distributed computer power, which means that functional troubles in a part of the system do not affect the other parts. A cable cut through digging between a head office and a branch, which is served by an exchange with a central computer, makes the internal communications of the branch and its communication with the surrounding world impossible. In the world of MD110, there are a large number of "minicomputers" — LIM (Line



Installation in Pittsburgh of a radio base station for mobile communications.



In preparation for an MD110 in New York.



Interface Module), each of which operates independently of the others. All modules are connected by means of copper cable or fiber optic cable. Together all line interface modules form a powerful unit, which makes the system quite insensitive to disturbances.

Ericsson's position in the private-exchange market in the U.S. is in all respects similar to its position in the market for public telecommunications. AT&T holds nearly 25 percent of the market. Northern Telecom comes second with 17 percent of the market and IBM's subsidiary Rolm comes third with about 14 percent of the market. Each of the "small" companies, such as Ericsson, NEC (Japan) and Siemens (West Germany) has small portions of the market.

"We aim at capturing 5-10 percent of the market for private exchanges within five years. Our product is good enough to make this possible," says McGarrity. "Five to ten percent may seem paltry but it must be remembered that the American market is enormous and is growing rap-

idly. Ten percent of today's market is SEK 4.8 billion."

With its technique, MD110 is particularly suitable for organizations and activities which are spread out geographically. It was, therefore, decided that the public sector should be worked on first of all.

Two variants of MD110 — MD110/40 for as many as 600 lines and MD110/20 for a maximum of 150 lines — are therefore being offered in the U.S. These variants were developed in view of the market. Half the demand for private exchanges throughout the world is for installations with less than 200 lines.

"We must refine and develop the system in order to be able to meet the special demands made by private customers. We are doing quite well and expect a breakthrough pretty soon," McGarrity continues. "Ericsson's position as a David among several Goliath companies forces us to continue to be more flexible than other companies. I think we may gain much by being keenly aware of the demands of our customers and becoming more engaged in their problems."

In Missouri, Illinois and Florida

Ericsson has been awarded two contracts worth USD 11.2 million and USD 1.5 million, respectively. The first contract, worth USD 11.2 million, is from MCI Telecommunications Corporation, covering three digital AXE exchanges that will be used as gateways to MCI's international network.

MCI is installing the AXE exchanges to handle its increased international traffic. All three exchanges include Ericsson's APZ 212, the most powerful central processor on the market.

MCI is a major provider of telecommunications services in the U.S. Its main business is providing domestic and international long distance telephone service.

Besides MCI, four of the seven U.S. regional Bell operating companies have purchased AXE equipment.

In addition to the MCI contract, Ericsson has been awarded a USD 1.5 million contract for cellular radio systems equipment from Crowley Cellular Development Corporation, to be used in Florida.

Ericsson has been awarded two contracts totaling \$2.5 million from Crowley Cellular Development Corporation for cellular radio equipment to be used in Joplin, Missouri, and in Springfield, Champaign and Decatur, Illinois.

The contracts initially call for installation of CMS 8800/S small market systems that include Ericsson's AXE digital switch and cell site equipment.

On the Move

Mobile Market A U.S. Phenomenon

"If one is successful, one can become very successful. We are very successful," says Manfred Buchmayer, manager of Ericsson Radio Systems in Richardson, Texas.

Buchmayer's words are a kind of proof of the pudding.

In the United States the mobile telephone market is synonymous with Ericsson, a brand new phenomenon in America — newer than in Scandinavia — which has been in existence only five years.

Ericsson has, during this short period, taken 25 percent of the total market, with 40 percent of the available market in San Francisco, Los Angeles, Honolulu, Chicago, Detroit, Las Vegas, Cincinnati, Pittsburgh, Houston and 34 other American cities. This can easily be called a success story, which is what the Austrian-born Buchmayer takes pleasure in doing.

"We have a good product, but you have to have luck, too. Now that we're established, the ball's in our court. If we do it right, we can take over 50 percent of the market," Buchmayer says.

Only a few saw the possibilities of mobile telephony when it was introduced. Ericsson was one of them. Through receiving orders and delivering in cities like Los Angeles and San Francisco, Ericsson laid the groundwork for a super system covering the 700 km between the two cities.

The same goes for Chicago and Detroit, where cities in between are also covered by Ericsson.

"The mobile telephone is really tailored for the American lifestyle. Americans travel a lot, commute, sit in traffic jams. With a mobile telephone they are always in touch," Buchmayer points out.

Still, the total market today amounts to only about 1 million customers. Ericsson Systems have 60,000 in Los Angeles and 40,000 in Chicago.

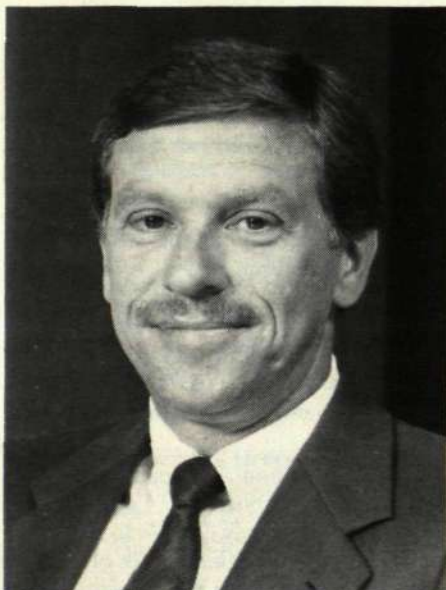
At the beginning of the 1990's, Buchmayer feels that for certain applications mobile telephones could replace normal phones in the home. At that point cellular will compete with class 5 installations.

Smaller communities could be covered by only one antenna. Drawing cable would be unnecessary.

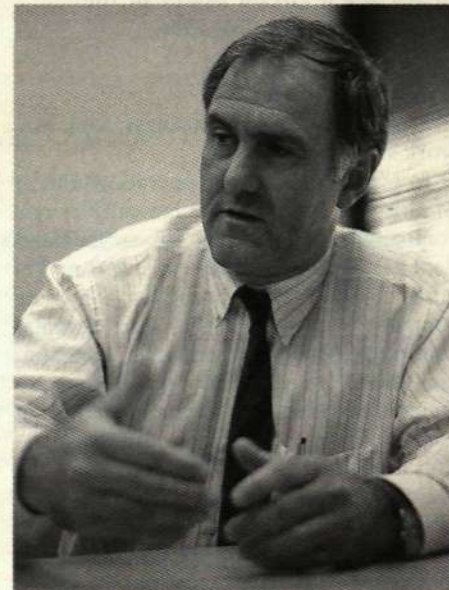
There is, however, cause for thought in Buchmayer's analysis. "We're in the wrong end of this business," he says. "It's the operators who make the money, not us."

In any case, there are no plans for Ericsson to start as an operator anywhere in the United States, Buchmayer affirms.

"Stick to what you're best at," he says.



Bill McGarrity



Manfred Buchmayer

Competitive Edge

Canon City Exchange A Milestone for AXE

Ericsson's AXE system made its debut in the United States with the volume order from Idaho. It took only eight months from the signing of the contract on April 1 last year to the putting of the first lines into use in December.

"We have worked hard to get the job done faster and give us a competitive edge at start-up," says Bo Nilsson, vice-president at Ericsson in Richardson, Texas.

The previous month, on November 14, 1987, marked an even more important era for Ericsson in America, when the first local AXE exchange went into operation with just over 10,000 lines in Canon City, Colorado.

"It was a milestone in our development," Nilsson affirms.

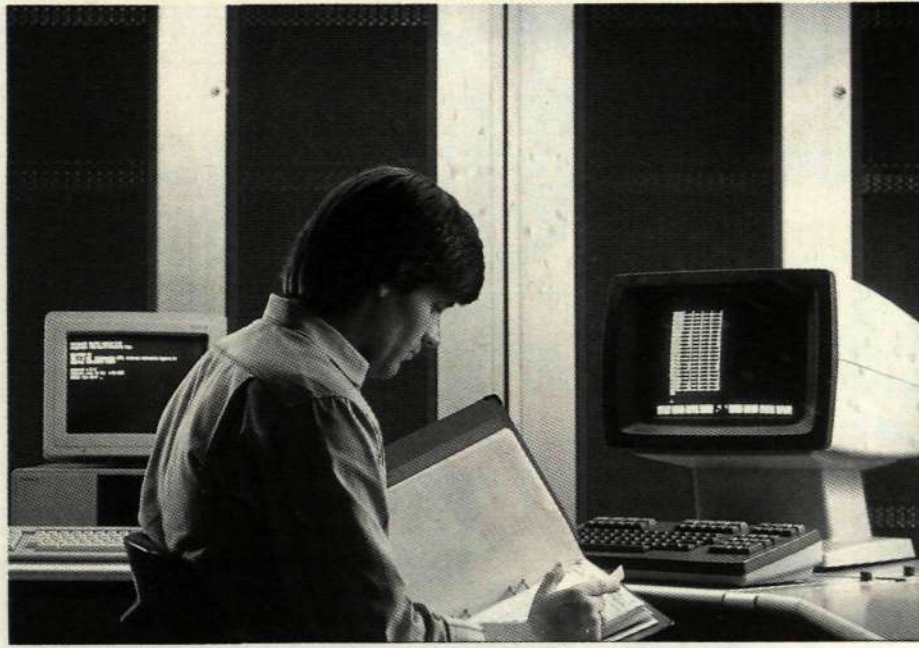
Two years earlier, in September, 1985, Bellcore had begun to examine the AXE system. When their report came out in August, 1986, it noted that Bellcore had certain "concerns."

"This was equivalent to a 'good' grade," says Nilsson. "We know the problems we have and we work intensively to solve them. We still have some work to do on the software."

Bellcore, an acronym for Bell Communications Research, was founded in 1984 when the American telephone monopoly, held by AT&T, was dismantled. The seven regional Bell companies, which now manage telecommunications within their own areas, use Bellcore as a research and testing ground for new telecommunications products.

The splitting up of the Bell companies was regarded as the most important thing to happen in the American telecommunications market. The world's largest market of its kind was suddenly open to new competitors. Siemens, Ericsson, and NEC now had the opportunity to compete with AT&T.

A report from Bellcore is almost a prerequisite to receiving an order. Even if



Monitoring the final stages of an AXE system installation.

nex' AXE exchange in cooperation with Ericsson.

Ericsson has received some negative criticism, but Nilsson does not see it as a setback "if we correct the shortfalls."

Another exchange, which Ericsson delivered to Southwestern Bell in St. Louis in February, is a laboratory exchange that Nilsson considers strategically important.

Another exchange, which Ericsson delivered to Southwestern Bell in St. Louis in February, is a laboratory exchange that Nilsson considers strategically important.

The 35,000 to 40,000 AXE lines in operation in Idaho today — in total it's a question of 90,000 lines over five years — mean that Ericsson's AXE program in the United States is going according to plan.

Ericsson expects to take 10 percent of the American market — equivalent to 700,000 lines.

The largest companies on the market are AT&T and Northern Telecom. Other major competitors such as NEC and Siemens are considered by Nilsson to be in the same category as Ericsson. AT&T and

Northern Telecom, as well as Ericsson in phase B and the Japanese NEC, are all being tested in the traditionally "Swedish town" of Minneapolis.

But with the protectionist wave now sweeping the U.S., it can be difficult being a foreign company. However, balancing this is the fact that the hardware in the AXE system comes from Sweden, while the software is developed in the U.S.

There are 250 employees at AXE's development department in Richardson, and when it's a question of the American view that Ericsson is a foreign company, Nilsson's response is that Public Telecommunications employs 650 taxpayers in the U.S.

The question of local manufacturing does arise, however, though Nilsson does not see this as a demand today.

"But we must be prepared to respond if the question comes up," he says. "Today it's purely a question of a business decision as to how profitable it may or may not be to manufacture here. We already buy considerable amounts of components, electric raw material, from the United States."

Perfect Timing

Move Into U.S. Spells Success

Timing is everything. Ericsson timed it perfectly, says Peter Thomas, Manager of Ericsson Inc., from his headquarters in Richardson, part of greater Dallas in Texas.

Ericsson established itself in the United States in 1980. Shortly afterwards, the telecommunication monopoly was abolished.

Ericsson more or less invented mobile telephony, the market for which is currently developing at an explosive rate in the United States.

It may seem that the introduction of a multinational Swedish group of companies to the American market in 1980 came rather late. Alfa Laval has been in this market since 1885, Asea since 1949, SKF since 1909, Studsvik since 1919, Uddeholm since 1925.

But, as was noted, the timing was perfect.

In 1983, three years after Ericsson was established in the U.S., the AXE system was introduced into the American market.

However, at the start the market was dull, with the two established giants, AT&T and Northern Telecom, dominating the scene.

When the market for mobile telephones was created, the situation was quite different.

We "invented" the mobile telephone and are, therefore, developing most rapidly in this market. We are the leading suppliers of mobile telephones in the world, Thomas stresses.

"Marketing of the AXE system is more difficult and takes more time," Thomas says. "We consider ourselves a complement to the two largest companies. A complement built on a very strong and experienced organization throughout the world. We are on the scene, thanks to our experience and to the fact that AXE is a tested system."

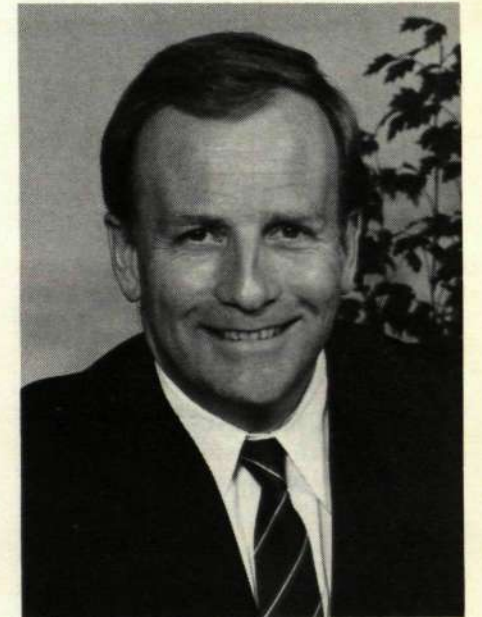
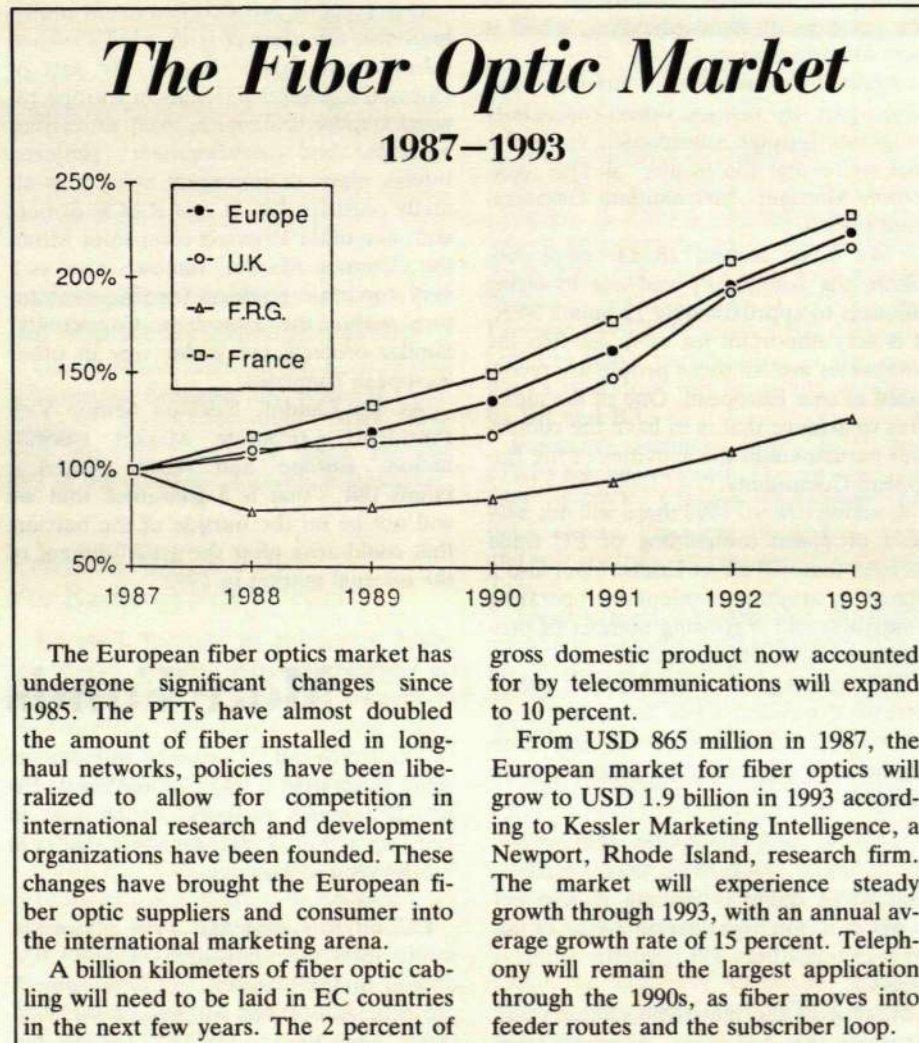


Bo Nilsson

Canon City actually signed the contract the month before the first phase was completed, everyone knew what the report would say.

The first test is completely theoretical. In order to pass on to Phase B, Bellcore demands that the company, in this case Ericsson, has a commercial order. Hence, the overriding importance of Canon City.

But the next step in the continuing story of AXE will be taken in New York, where Bellcore is testing the Bell company Ny-



Peter Thomas

Ericsson's third business area in the U.S., Business Communications, has not fared as well as Radio Systems and Public Telecommunications. After a formidable slimming process, activities have been concentrated on a predominant product, the MD110 exchange for private use.

The market for private exchanges is far more developed, with many competitors concentrating on specific niches.

Ericsson's strength is, however, its perseverance, Thomas maintains.

EC Outlook

Subsidiaries Set The Stage for '92

Emboldened by the support that its ESPRIT program for cross-border research and development projects is getting in the information technology sector, the European Community is now turning to telecommunications.

It has already won the backing of the 12 member countries for more cooperation on standards and government purchasing, and increasingly its industrial policy planners are urging production and market-sharing pacts that could help the European electronics companies to strengthen their future market position.

ESPRIT, the European Strategic Program for Research and Development in Information Technology, and RACE, Research for Advanced Communications in Europe, are two programs that are expected to include a series of measures that would introduce common technical standards, open up procurement policies and promote research and development among European telecommunication companies. The two programs must also be perceived as a part of the preparation for 1992, the year the inner market is expected to be established.

The EC approved in April a series of research programs worth several billion dollars that are intended to make the Community challenge Japan and the United States in selected high-tech areas. It also gave the formal go-ahead to a package that includes the main phase of RACE and the second phase of ESPRIT, which is regarded as the flagship of European technological cooperation.

The EC said that applications to participate in ESPRIT II "suggest a response from industry even more enthusiastic" than in the first phase.

Ericsson's participation in these programs will come mainly through the subsidiary companies in EC countries, but also from home base in Sweden.

"In my judgement, participation in the R&D programs are steps we have to take to ensure that we are included in the community, when EC unification is scheduled to come on stream," says Per Olof Åkerberg, Vice President, Corporate Market Coordination. "We have to plan for 1992 even if I can't say we have an action plan for it as of now."

"Ericsson is following closely what's happening and which measures the Com-



mission of the European Community is launching," says Åkerberg. "We're in the planning stage. There are changes in procedures. Therefore, we need to act or take responsibility in another way."

One example of changes in procedures relates to inter-European standardization. "Ten years ago Ericsson was not even invited, since the telecommunications administrations had absolute authority to determine standards. Industry could just influence input, and had a minor influence on the outcome. Now, we participate and we can also influence standardization, and the progress of standardization, which is very important to us."

Apart from standards, Ericsson also takes part in various other community programs through subsidiaries "to prove that we're real Europeans" as Olle Wikström, Manager, International Organizations puts it.

"We have around 18,000 employees within the community and our invoicing amounts to approximately 12 billion SEK. It is very important for us to see that the companies and all these people are recognized as true European. One of the measures to achieve that is to have the companies participate in the activities of the European Community."

Looking toward 1992 there will not only be a proposed dismantling of EC trade barriers that will affect Ericsson but also a change in structure of telephone operating companies and a growing number of providers of value added services.

This means that in the telecom sector instead of meeting a few large customers per market, Ericsson might envisage up to hundreds of customers per market by the mid '90's.

"It is too early to pinpoint what actions will be taken," Åkerberg says. "Rather, what we're doing is making people everywhere in the organization aware of the likely changes that will occur in the next decade."

Mindful of the inevitable changes and expansion that will come, Åkerberg says:

"The market for services will most likely grow very fast and thus become really large. Moreover, much of this growth will occur in companies we haven't seen today or that are not yet on the European market. Companies that have now established themselves as providers of value added service in the U.S. will try to establish themselves in Europe. We don't know and we can't say right now what the scene will be, but it's important that every man becomes aware of the changes that will come."

One tangible proof of Ericsson's contribution in this respect is its wholly owned subsidiary in Spain, Intelsa. As part of Ericsson's general activities in Europe toward standardization, as well as various research and development projects, Intelsa plays an important role. It is already participating in one RACE project and, like other Ericsson companies within the Common Market, Intelsa serves as a very important platform for Ericsson's future within the European Community. Similar projects are under way in other European countries.

As Bo Landin, Ericsson Senior Vice President, Corporate Market Coordination, Europe and North America, points out, "that is a guarantee that we will not be on the outside of the barriers that could arise after the establishment of the internal market in 1992."

More Funds For ESPRIT

The European Community will allocate more funds than it had planned for its Esprit II research program, which aims to keep up with U.S. and Japanese strides in information technology.

EC officials said the 1988 allocation would total the equivalent of USD 874 million to 158 research and development projects. Allocations will exceed the 1988 target, equivalent to USD 672 million, be-

Standards

Industry Paves Way for Progress

Ericsson, though Sweden is not a member of the European Community, has been a key player concerning standardization in the telecommunications area. Its objective, implemented through active participation in European panels, is to assure a continued role through its subsidiaries in the Community.

The European Commission, the policy-making arm of the EC, is convinced that to remain competitive in communications and for industry to keep its share of the EC market, EC telecommunications companies should work together toward a common standard and network operators within the EC should open up their procurement policies.

In order to activate the telecom industry as well as the network operators (PTTs), the Commission has launched a number of R&D programs. These programs not only aim at pure R&D but also intend to lead to an early Community-wide telecom standard.

Ericsson, with over 35 percent of its invoicing and approximately 18,000 employees in the EC, is already involved through subsidiaries. The Commission will now allow participation from non-member countries in Western Europe, so Ericsson will participate from Sweden as well.

Bengt-Olof Malmberg, responsible for coordination of information technology standardization at Ericsson, says one main drive now is in establishing the European Telecommunications Standards Institute, which may have direct industry influence rather than the present procedures through national PTTs.

Malmberg sees this as a better avenue through which to achieve rapid and efficient standardization.

"The institute must have freedom to work to do real standardization work, and then after two years, we'll be able to review the situation," he says, noting that, when performing the first phases of the new standardization work, it's better to have direct links to organizations developing standards rather than indirect channels such as the national delegations.

"However, Sweden is not in such a bad situation: we're fortunate in having a national standardization organization, SIS-ITS, understanding this situation regarding telecommunications and standards," Malmberg says. However, he adds, the total EC scene is more difficult to get along with, as regards other PTTs.

"PTTs in the EC are standard-setting bodies as well as operators," Malmberg notes. "But it is difficult to split this up into a standard-setting body, as a separate authority and a separate network operator. This would avoid PTT's working to suit their own commercial interests and also make the standardization bodies 'lean, mean and fast.'"

Uncommon Charges In a Common Market

According to a survey by the Bureau of European Consumers' Unions, charges for telephone services differ greatly within the European Community.

The study, based on questionnaires sent to the national postal and telecommunications authorities in the 12 EC member states, said a five-minute call from Bonn to Dublin costs \$2.40, but the same call from Dublin to Bonn costs \$5.

A call from Brussels to Paris costs 30 percent more than one from Paris to Brussels. Local calls in London cost nine times more than in Madrid. In Denmark, the installation of a basic telephone costs up to seven times more than in West Germany. The waiting time for a new telephone line ranges from less than two weeks in France to up to three years in Greece.

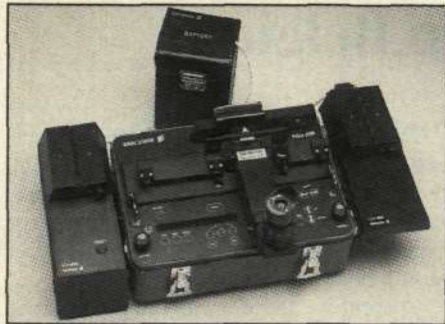
Ericsson Updates

Cables Broadens Fiber Optic Activities

Ericsson Cables' Telecom Cables Division took over responsibility for manufacturing and marketing of fusion splicers and joint closures for fiber optic cables from Ericsson Fiber Optics, effective July 1, 1988.

The sections for development and manufacturing for fusion splicers will be placed in Sundbyberg with the existing Optical Fiber Unit. They will be organized under a new unit, Fiber Optics, which will be headed by Per-Erik Jonsson.

The marketing organization for fusion splicers will be located in Sundbyberg and



An Ericsson fusion splicer.

report to the market manager in Hudiksvall. Joint closure activities are to be located in Hudiksvall.

"Fusion splicers have previously been developed and marketed by Ericsson Cables, so it is natural that they return there. The addition of the joint closures provides us with a larger base for fiber optic activities, very much in line with our efforts to broaden our cables organization," says Roger Runesson, Manager, Telecom Cables Division.

Train Systems for France

Network Engineering and Construction is currently negotiating to deliver Automatic Train Control equipment to the French State Railways via a licensee. The agreement would be for systems controlling up to 1,000 trains; no contract has yet been signed. A test system is currently functioning in France.

Agreement Set With THORN EMI

Ericsson, the Swedish telecommunications group, and THORN EMI has announced an agreement in principle whereby Ericsson will purchase THORN EMI's 51 percent interest in Thorn Ericsson Telecommunications (Holding) Ltd, the joint venture created by the two companies in 1973.

Terms of the agreement, which is subject to approval by the appropriate authorities, were not disclosed. The company will become a wholly owned subsidiary of Ericsson and will continue to grow as a supplier of telecommunications equipment to Britain's public and private sectors. Company headquarters will remain in Horsham, U.K.

Björn Svedberg, President and Chief Executive Officer of Ericsson, said the purchase is in line with the company's strategy to strengthen its position as a leading supplier of telecommunications equipment in Europe. "The United Kingdom is today one of our largest markets. We will continue to improve our position there as it is an important part of our worldwide activities," he said.

New President for Facomec

Gerhard Skladal has been named President for Facomec SA in Colombia, effective October 1, 1988. Facomec SA is a subsidiary of Ericsson Cables and is Colombia's largest cable company. Gerhard is currently head of Siemens' telecommunications activities in Mexico. He has 20 years of experience within Ericsson as installation manager for Intelsa in Spain, manager for Ericsson's installation company Telemontaje in Mexico and responsible for private market sales in Mexico.

Kaj Nielsen, Facomec's previous President, took over responsibility for HiTemp Wire's reconstruction, our specialty cables unit in New York, effective January 1, 1988.

Trial System For Digital Mobile Telephony in Stockholm

The Swedish Telecommunications Administration and Ericsson have now entered into the phase of a cooperation agreement covering the installation of a trial system to test the new Pan-European system for digital mobile telephony within the Stockholm area.

The trial system will be installed and operating by the beginning of 1989 to test important functions of the new digital transmission technique from vehicles in Stockholm traffic. The trial system will give Ericsson the opportunity to demonstrate to the Swedish Telecom Administration and other potential European customers that the company is capable of mastering the new technology and retaining its position as the leading supplier of mobile telephone systems.

Swedish Air Force Expands Telecom Network

Ericsson has received an order covering construction of tele and data communications networks at several military airbases included in the Swedish Air Force's BAS 90 System. The order, valued at SEK 35 million, was placed by the Defense Materiel Administration for the Swedish Air Force.

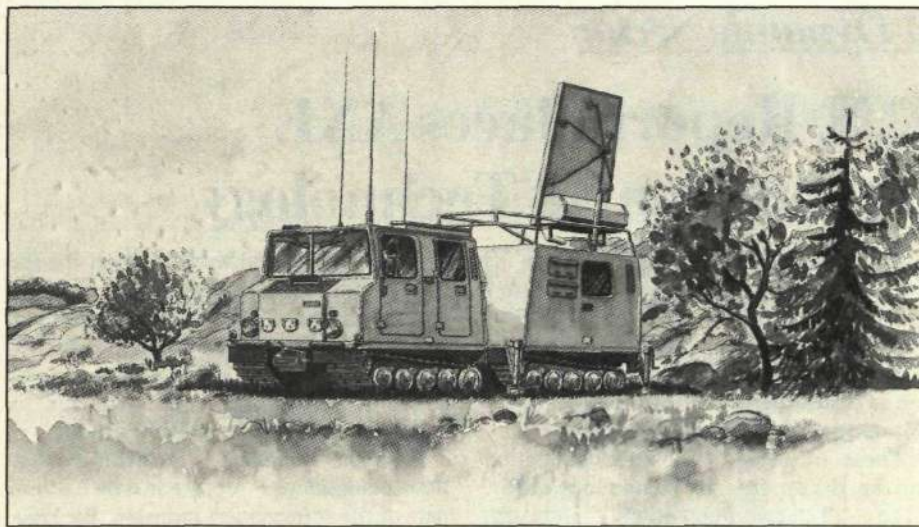
Ericsson Network Engineering AB will carry out the installation. Ericsson Radar Electronics AB has been contracted as subsupplier to install certain radio and radio link equipment.

Information Manager For Business Communications

Cecilia Schön-Boström has been named Information Manager for Business Area Business Communications (BB). She joins Ericsson from SAS, where she was one of the division information managers.

Ericsson Makes a Bid For Radiosystem Sweden

Ericsson, through its subsidiary Ericsson Radio Systems AB, has reached an agreement with the principal owners of Radiosystem Sweden AB, covering acquisition of all A-shares in the company. At the same time Ericsson is offering to acquire all the Radiosystem shares outstanding, as well as convertible debentures issued by the company. Implementation of the transaction is subject to Ericsson's acquiring at least 90 percent of Radiosystem's shares carrying at least 90 percent of the voting rights in the company, and to mandatory approval by the Swedish authorities.



ARTHUR, weapon location and artillery control radar.

Radar for Swedish-Norwegian Project

Ericsson Radar Electronics has signed a joint development contract with the Swedish Defense Materiel Administration and the Norwegian Army Materiel Command for a new artillery location radar, designated ARTHUR (Artillery Hunting Radar).

The main design goal is to provide the Swedish and Norwegian armies with a high-performance, highly mobile weapon location and artillery fire control radar, capable of operation without support or supply from other units. Nordic Electronic Systems of Norway participated in this development.

ARTHUR is a highly mobile, autonomous weapon location and artillery fire control radar. The radar, including communications equipment and other support systems, is to be installed in the Hägglund BV 208 track vehicle. It is a fully coherent broadband system, utilizing TWT transmitter and a phased-array high precision antenna. The ARTHUR system features automatic detection, location and classification capability of artillery, rockets and mortars without degradation of the performance in barrage firing situations. All radar data is automatically transmitted to the combat control center.

Position Changes in BR and BB

Sten Fornell has been named Vice President Financial Control for Business Area Radio Communications, effective August 1. He will have responsibility for the controller function as well as for administrative development within the business area. He is currently controller for Business Area Business Communications.

Olle Sten has been named Manager, International Operations within Business Area Radio Communications (BR), a new function responsible for the coordination of activities relating to BR subsidiaries, effective August 1.

Peter Johren will take over responsibility for financial control for Business Area Business Communications effective August 1.

Joint Venture in Taiwan

Ericsson has formed a joint venture company in Taiwan primarily to handle mobile telephone business. The company, Terico Ltd. (TET), is a local joint venture company between TECO (60%) and Ericsson (40%). Terico is a BR company, and Ericsson's participation in the company's operation will be jointly managed by BR and BX.

Ericsson's technical office in Taiwan (TKF) has been closed. The former manager of TKF, Christer Hohenthal, has been named President of Terico, Ltd., and will continue to represent Ericsson in Taiwan.

Terico's main activities are in mobile telephone systems and production of mobile telephone terminals.

Thorn Ericsson Milestone

With the acceptance by British Telecom (BT) of its new 6912 line Sidmouth exchange, this takes the number of AXE digital subscriber lines delivered by Thorn Ericsson to over 500,000 as part of the local exchange modernization program.

After entering the program in March 1985, the company delivered the first AXE exchange in Seven Oaks in September 1986.

Final Agreement With BICC

Ericsson Inc, USA, and BICC, Great Britain, have now signed the final agreement on the divestiture of Ericsson's specialty power cable unit, Continental Wire and Cable in York, Pennsylvania, to Cable Corporation, a unit of BICC USA.

Exhibitions

Over the coming months, Ericsson, through the participation of various business areas, will display its products at prominent telecom exhibitions in Beijing, Manila and Baghdad.

Beijing, which is rated as the world's largest telecommunications exhibition in 1988, will be host to some 80,000 visitors, of whom 15 percent will be coming from places outside the capital.

The exhibition, known formally as China's International Telecommunications, Computer Exhibition and Conference, will feature Ericsson's MD110, fiber optic splicers, power equipment and AXE, mobile voice and data systems, cellular mobile equipment, among other products.

The exhibition will run from Oct. 26-31.

Phil Telecom '88, to be held in Manila Aug. 30-Sept. 3, is the first of its kind to be held in the Philippines. Among Ericsson participants are Radio Systems, Telecommunications, Business Communications, Components and Network Engineering. AXE and the MD110 will highlight product displays, which will also include fiber optic splicers and transmission equipment. A four-day conference tied to the exhibition will look at "Rural Communication Development: The catalyst for investment explosion and economic growth."

The Baghdad International Fair will be held Nov. 1-15. Ericsson will be part of a group of 14 Swedish companies brought together by the Swedish Export Council, which will be displaying products with long-term market objectives.

A Dynamic Sector

U.N. Report Places AXE At Forefront of Technology

The telecommunications industry is becoming increasingly important. In a few years time, demand for products and services for information handling will have reached \$1 trillion. This means that Ericsson is operating in one of the most dynamic sectors of the world economy.

These are some of the conclusions that can be drawn from a voluminous study, "The Telecommunication Industry, Growth and Structural Change," recently presented by the United Nations Economic Commission for Europe (ECE).

ECE has been working on the study since 1984. The purpose was to throw light on actual trends in the information sector by presenting various reports. That on the telecommunications industry is the most recent one.

Ericsson, and our international competition, is a front-rank feature in the report. There is bountiful information about our position in the world market, the AXE system and our technological know-how.

Above all, there is a summary of the importance of the telecommunications and information industry.

In 1985, the total world market for the information industry (products and services in the telecommunications and computer fields) represented the tremendous sum of \$500 billion. By 1990, it will be close to \$900 billion. This is roughly six times Sweden's gross national product.

Ericsson products – telecommunications equipment – represent only a minor part of the information industry. By 1990, the world telecom market will amount to approximately \$100 billion, with an annual growth of 8 percent. This is about 20 times Ericsson's annual sales.

Telecommunications and data communications are virtually inseparable. Ericsson's main product – the AXE exchange – is nothing more than a gigantic computer. And computers wouldn't be particularly exciting if they lacked the faculty of using telecommunications for their transfer of information.

This amalgamation makes the information industry – taken in its broader sense – one of the most important sectors of the world economy.



BCS 150 Kickoff in Belgium

Continued from page 1

lands, Finland, Italy, Portugal, Denmark, Norway, Austria, Australia, Mexico, Venezuela and Saudi Arabia. The target group is small and medium-size companies, which constitute half of the hybrid and key system market under 200 extensions and is the fastest growing reaching the USD 2 billion level in Europe during 1989-90.

Televerket, the Swedish PTT, has successfully test marketed the BCS 150 under the name Fenix since last October and sales have exceeded their most optimistic expectations, reaching the 150 systems per month level.

Currently there are approximately 1,200 systems functioning in Sweden.

Global Telecommunications Investments (in billions USD)				
Region	1982	Forecast		Annual percentage increase
		1987	1992	
North America	19.9	29.1	41.9	7.8
Europe	12.5	17.2	23.7	6.7
Asia	11.8	19.1	31.7	10.1
Latin America	1.4	2.0	2.9	7.7
Oceania	0.9	1.2	1.5	6.6
Africa	0.4	0.7	1.0	8.2
Total	46.9	69.3	102.7	8.1

Source: Affärsvärlden

TELECOM '87 Ratings

The issue of whether or not Ericsson should participate in an exhibition – along with how much should be spent – are questions that often arise. In a follow-up report on Telecom '87 positive factors and feedback speak in favor of participation and make this issue a far easier one to resolve.

There is much to be pleased about in a stand performance report of Ericsson's participation at the TELECOM '87 world telecommunications exhibition in Geneva.

According to a survey carried out by Exhibitions Survey in Britain, Ericsson's performance was excellent and a greater proportion of the audience visited the stand than at any previous TELECOM.

Figures show an increase in visitors from 30.5 percent in '83 to 44 percent in '87.

However, despite the excellence of this result, the stand actually attracted a slightly smaller percentage of its target audience from the aisles than was attracted in 1983.

Ericsson's staff undoubtedly played an important role in '87, the survey notes, and was rated much better than in '83.

In a stand attraction rating, Ericsson scored high, with 124 percent of its potential audience attracted by the stand, a clear endorsement of design and location. In a recall poll, a total of 27 percent of visitors to the Ericsson stand cited it as one of the most memorable. Their main reason for doing so was product interest.



The Ericsson Stand at TELECOM '87 in Geneva.

On the Path Of Progress

Ericsson is making progress. Results of a corporate campaign conducted throughout Sweden in June showed that 60 percent of Ericsson employees were convinced that the company was on the path of progress.

"This is a very positive response," says Nils Ingvar Lundin, Senior Vice President, Corporate Relations. "It shows solid confidence in the future of Ericsson among our employees."

And Ericsson needs this conviction. Fifty percent of personnel are very often confronted with wide-ranging questions about the company from outsiders. And the trend is increasing. Their level of knowledge about Ericsson, though, is very low. Not only among people outside, but among employees as well.

Of course, as a result of the campaign more employees in Sweden know now that Ericsson's core business is telecommunications. To the outside world, it is still telephones.

This misrepresentation has to be changed – and there is little doubt that the onus of doing so rests with Ericsson employees.

"We must also upgrade our level of knowledge about business activities other than the immediate one with which we work," says Lundin. "There, the research shows an improvement, because of the campaign. But the level is still much too low. We must all take a wider interest in all our business activities so that we can better act as ambassadors for the company."

Stressing the fact that confidence is what it is all about, Lundin goes on to point out that "if we do not know Ericsson well enough to be confident ourselves, we will not be able to impart confidence." That is what is important to customers, suppliers, shareholders, etc., Lundin says.

Even though the Ericsson image is fairly strong today, both internally and externally, there is still room for further enhancing that image. And, indeed, it is needed even more in an increasingly competitive world.

The corporate advertising campaign



was launched from June 9, continuing daily, weekdays through June 15, in all major Swedish newspapers. The objective is to enhance Swedish employees' corporate commitments and to position Ericsson as one of the leading international companies in telecommunications.

"We have a great deal to be proud of and shouldn't hesitate to talk about it," emphasizes Björn Svedberg.

The campaign themes were:

- We are larger than you think.
- We are stronger than you think.
- We export more than you think.
- We are more skilled than you think.
- Others talk a lot about the future. We do something about it.

ERICSSON

Contact

No. 4 August 1988

Box 32073
S-126 11 Stockholm
Sweden

Editor-in-Chief:
A. Michele Schmidt
(Responsible under Swedish law.)

Contact Management is published six times annually for the information of Ericsson's English-speaking managers.

Certain material in Contact Management is gathered and edited from the publications of Business Areas and other Ericsson units.