ERICSSON

Contact MANAGEMENT

INFORMATION FOR ERICSSON MANAGERS WORLDWIDE No. 5 / NOVEMBER 1988

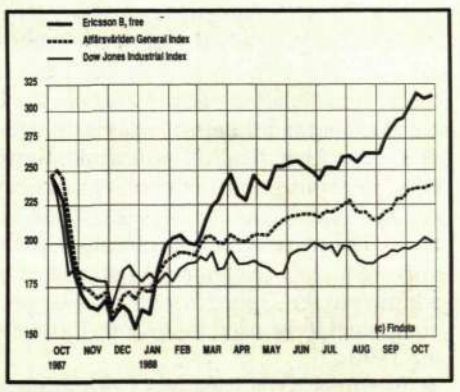
INSIDE

Ericsson's Executive Committee takes time off from trouble-shooting at a recent strategy session to do some rapids-shooting on the waters of northern Sweden. The nautical foursome, are, anti-clockwise: Björn Svedberg, Jan Stenberg, Lars Ramqvist and Carl Wilhelm Ros. *(The President's Comments, Page 2.)*

3d Quarter Results Best Ever

Net sales of Telefonaktiebolaget LM Ericsson and its consolidated subsidiaries for the nine months ended September 30, 1988, amounted to SEK 20.561 billion, compared with 21.898 billion in the corresponding 1987 period, a decrease of 6 percent. The decline was attributable to divestments of operations, as reported earlier. Net sales of comparable units increased 12 percent. Order bookings, which rose 3 percent, amounted to SEK 23.146 billion, against 22.375 billion in the 1987 period, and the increase for comparable units was 29 percent.

Consolidated income before appropriations and taxes was SEK 854 million (compared with 453 million in 1987) of which 7 million (315 million last year) consisted of capital gains.



After provision for taxes, income per share was SEK 10.07 (compared with 6.53 in 1987). Income per share after provision for taxes and estimated deferred taxes on appropriations amounted to SEK 13.68, against 8.02 last year.

A strong third quarter with continued lower overhead costs and lower net financial expenses resulted in a marked improvement in consolidated income for the nine-month period. All business areas except Network Engineering and Construction and Defense Systems showed improvements in operating results. The compensation anticipated from the Swedish employers' organizations as a consequence of the labor conflict in Sweden earlier in the year is not included in nine-months earnings.

Thorn Ericsson in the United Kingdom is now consolidated, following acquisition of all the company's shares.

The number of employees at the close of the period was 64,220, compared with 70,893 on January 1, 1988.

Continued on page 2

AXE for Hungary — a First in East

The deputy president of the Hungarian PTT, Ferenc Valter, has announced that expansion of the country's overloaded telephone system will follow a relaxation of the rules by the Paris-based Coordination Committee for Multilateral Export Controls to allow sales of digital telephone equipment to Eastern Europe. Hungary, the first East bloc nation to take advantage of the relaxation, has fewer telephones per capita than any European nation except Albania and Poland.

Ericsson is supplying Hungary with Eastern Europe's first fully digital telephone exchange. The contract, signed between Ericsson and Elektroimpex, Budapest, is valued at SEK 47 million (USD 7.5 million).

The order is for an AXE international telephone exchange for the capital, Budapest. The AXE exchange supplied to Hungary's telecommunications administration (PTT), is a modern, fully digital SPC (Stored Program Controlled) exchange. Also included in the contract is training of the PTT staff.

The contract with Elektroimpex was subject to approval by the U.S. Authorities regarding the re-export of certain electronic components of U.S. origin included in the AXE. Such approval has been obtained.

The AXE equipment, which has been manufactured at Ericsson's Norrköping plant in Sweden, is now being delivered. The Budapest international AXE exchange is to be handed over to the Hungarian PTT by the end of 1988.

Although this is the first AXE exchange supplied to Hungary and the world's first fully digital exchange for Eastern Europe — the partnership between Hungary and Ericsson recently passed its 20-year anniversary.

The major part of the Hungarian telecommunications network uses Ericsson equipment. The Hungarian Budavox Group is manufacturing analogue crossbar exchanges under a license agreement.

China to Produce MD110 System

Ericsson, has signed a contract with Beijing Wire Communications Plant (BWCP) covering manufacture of the MD110 digital communications system in the People's Republic of China.

The cooperation agreement, covering transfer of know-how and local manufacturing during a six-year period, will enable BWCP to produce 100,000 extension lines per year. At the same time, Ericsson also signed a contract to supply BWCP with 55,000 MD110 extension lines during 1988-89. The value of the contracts is at USD 40 million.

Nine-Month Report, 1988

CONSOLIDATED CONDENSED FINANCIAL DATA
(Amounts in SEK millions, except per shares values.)
(The conversion rate is SEK 6.25 to the US dollar.)

	Jan-Sept 1988	Jan-Sept 1987	Changes
Net sales	20,561	21,898	-6
Order bookings	23,146	22,375	3
Order backlog, end of period	26,589	24,052	11
Income before appropriations and taxes	854	453	89
Net income after taxes paid	384	249	54
Net income after taxes paid and estimated deferred taxes on appropriations	522	306	71
Number of shares outstanding, millions	38.2	38.2	0
Adjusted net income per share after taxes paid, SEK	10.07	6.53	54
Net income per share after taxes paid and estimated deferred taxes on appropriations, SEK	13.68	8.02	71

SALES BY BUSINESS AREA
(SEK millions)

	July-Sept 1988	July-Sept 1987	Jan-Sept 1988	Jan-Sept 1987
Public Telecommunications	3,735	2,819	9,998	8,401
Radio Communications[1)]	1,020	584	3,105	1,801
Business Communications	919	601	2,447	2,103
Network Engineering and Construction	708	642	1,975	1,673
Cables	630	840	2,214	2,514
Components	374	427	1,243	1,276
Defense Systems	401	579	1,637	2,063
Other operations	233	1,548	794	4,720
Less: Intersegment sales	-1,066	-857	-2,852	-2,653
	6,954	7,183	20,561	21,898

OPERATIONS IN BRIEF

Demand for Ericsson products, notably the AXE switching system, mobile telephone systems and the MD110 private branch exchange, continued to be firm. The increase in orders in the Network Engineering and Construction Business Area was also very strong.

In Defense Systems, construction of a new development and production facility in Mölndal has been halted due to the weak trend of the market and uncertainty with respect to the timing and volume of future orders.

- **Business Area Public Telecommunications** — Continued to receive large orders for AXE equipment, primarily from customers in Mexico, Spain, Sweden and the People's Republic of China. Order bookings increased a full 46 percent. The 19 percent increase in net sales is attributable to a minor degree to the consolidation of operations in the United Kingdom. The improvement in earnings in the business area is striking.
- **Public Area Radio Communications** — Also reported a marked improvement in earnings. Order bookings increased 37 percent. The 72 percent increase in sales was due in part to operations transferred from Defense Systems. The increase in sales for comparable units was 53 percent. Contracts involving mobile telephone systems have been signed in Italy and Hong Kong. In addition to the United Kingdom, French authorities have also placed orders for equipment to be used in the Pan-European digital mobile telephone system of the 1990s.
- **Business Area Business Communications** — Reported a strong improvement in operating income. This was due mainly to the success of the MD110 private branch exchange. Order bookings rose 25 percent and sales increased 16 percent. Large orders were obtained in Western European countries, in the United States and in the People's Republic of China.
- **Business Area Network Engineering and Construction** — Reported an increase of 35 percent in order bookings, mainly involving contracts in Sweden, France and Taiwan and continued increasing order bookings in Italy and Spain. Sales increased 18 percent. Operating income declined slightly, due mainly to lower margins.
- **Business Area Cables** — Further strengthened its position as the principal supplier of fiber optical cable to the Swedish Telecommunications Administration. The decline of 12 percent in sales and nearly all of the 18-percent decrease in order bookings was due to the divestment of cable operations in the U.S. Earnings improved markedly.
- **Business Area Components** — Following the divestment of its capacitor sector, Components reported a decline of 3 percent in sales, compared with the preceding year, and a 2 percent increase in order bookings. Sales of comparable units increased 26 percent and order bookings were 14 percent higher. Earnings continued to improve.
- **Business Area Defense Systems** — Again reported a weak trend of business resulting in an operating loss, mainly due to increased costs for the JAS 39 Gripen military aircraft project and for control centers. Invoicing was 21 percent lower, partly as a result of the transfer of certain operations to Radio Communications. Sales of comparable units declined 10 percent, while order bookings rose 4 percent.

The President's Comments

Coordinated Strengths In a Stronger Ericsson

"The substantial investments that we made in our systems and products in the field of telecommunications have been successful. The trend of orders has been so strong that we can report an increase in total bookings despite the fact that early in the year we divested operations that formerly accounted for about one-fourth of our sales. As regards operating income, we can report our best third quarter ever.

Björn Svedberg

It is also gratifying to note that the improvements apply broadly throughout Ericsson, not only in our major system areas — Public Telecommunications, Radio Communications and Business Communications — but also in Cables and Components. Network Engineering and Construction, which is highly dependent on a few, but large, projects, shows slightly lower operating income for the period but, at the same time, its order bookings developed favorably.

Earnings in Defense Systems have been reduced by larger-than-expected costs for the JAS (multi-role military aircraft) project and for major projects within the control center area. There is uncertainty with respect to continued order bookings from the Swedish Armed Forces as well as future export potential. We have therefore felt constrained to halt construction of a facility to which development and production of radar systems was to be transferred.

Increased market shares in the telecommunications field are an essential prerequisite for Ericsson. In addition, there is a need for continuous adaptation to market conditions and changes in technology. We know that we will continue to operate under severe competitive conditions and in a rapidly changing environment.

It is apparent that it is not possible to achieve profitable production of telephone instruments in Sweden. We therefore plan to phase out this production over a two-year period. This is a step toward attaining the solid, long-term level of profitability of Ericsson that is required if we are to remain strong in the future.

Our operating results for the first nine months of the year show that we are on the right track."

Best Third Quarter Ever

Continued from page 1

Demand for Ericsson products, notably the AXE switching system, mobile telephone systems and the MD110 private branch exchange, continued to be firm. The increase in orders in the Network Engineering and Construction Business Area was also very strong.

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For the full year 1988, income before appropriations and taxes, including compensation from the Swedish employers' organizations, is expected to amount to at least SEK 1.7 billion, compared with 1.108 billion in 1987. Profit in the fourth quarter, excluding this compensation, is expected to be higher than in the corresponding period a year earlier.

"The trend of orders has been so strong that we can report an increase in total bookings despite the fact that early in the year we divested operations that formerly accounted for about one fourth of our sales," says Björn Svedberg. "As regards operating income, we can report our best third quarter ever."

One Year after the Crash

On October 19, 1987, the world's stock markets took a dive, plunging some 20,000 holders of Ericsson convertibles into grave doubts about their investments. In the space of a few weeks, Ericsson shares went from around 225 kronor to under 150, its lowest level since 1980.

Today, one year after the "Black Monday" crash, they can breathe easily. Ericsson shares are stronger than they have been for many years.

With listings around 300 kronor for B-free shares, Ericsson comes out among the winners on the Stockholm Bourse. Share value has almost doubled from the 153 kronor standing on January 4 this year.

The rapid climb surprises even senior Ericsson executives. Chief Financial Officer Carl Wilhelm Ros was moved to note that the past few months "have been like a ketchup bottle." For a long time nothing happens, then suddenly you get the result of several years' work all at once.

Moving from an average worth of 247 kronor a few months ago to the current level of 300 has also raised questions about what will happen if it passes this mark. Several forecasters feel that there is a resistance level at 300, thereby prompting sellers to send their holdings. This, they say, will make it difficult for share values to keep rising at the rate they have been going in recent months.

But there are those who feel the 300 barrier can be breached as long as Ericsson management can maintain the improved results they have achieved over the past months.

Expectations of higher earnings in 1988 could also influence share price movements upwards, forecasters say. Moreover, in recent months, many foreign brokerage firms have issued very possitive reports on Ericsson, which, analysts say, could trigger a foreign buying spurt.

Telecommunications Are Seen As Key to Better Infrastructures

Sir Donald Maitland, chairman of the Independent Commission for Worldwide Telecommunications Development from 1983 to 1985, takes a look at telecommunications in the developing countries and the role that private corporations play in enhancing them.

A former British ambassador to Libya and British representative to the United Nations and the European Community, Sir Donald is currently deputy chairman of the Independent Broadcasting Authority in London.

When in 1981, the United Nations recognized "the fundamental importance of communications infrastructures as an essential element in the social and economic development of all countries," it set in train a process of discussion and decision aimed at redressing the imbalance in the distribution of telecommunications worldwide.

Joint ventures are a popular form of collaboration and among the easier to negotiate.

The International Telecommunications Union has played a proselytizing role. One aim of the Center for Telecommunications Development, which operates under its aegis, is to urge that higher priority be given to telecommunications. The setting up of such a center was recommended by the independent Commission for Worldwide Telecommunications Development in its report "The Missing Link" published in January 1985.

Since an effective telecommunications network is inherently profitable, the Commission looked to the private sector to play a major role in improving and expanding systems in developing countries. The Commission, therefore, appealed to private operators, manufacturers of equipment and finance houses to join in the effort to create a comprehensive world network.

For some years a number of operators and manufacturers have been conducting mutually beneficial business in developing countries. Senior executives in private companies that have not yet ventured into this field have good examples to follow. How should they go about this?

First, company boards have to be persuaded that, despite the hazards, it is in their shareholders' interest to play a role in the developing world. The risks should not be ignored. But, where there is a climate that is generally conducive to inward investment and an adequate assurance of creditworthiness, companies should not be deterred.

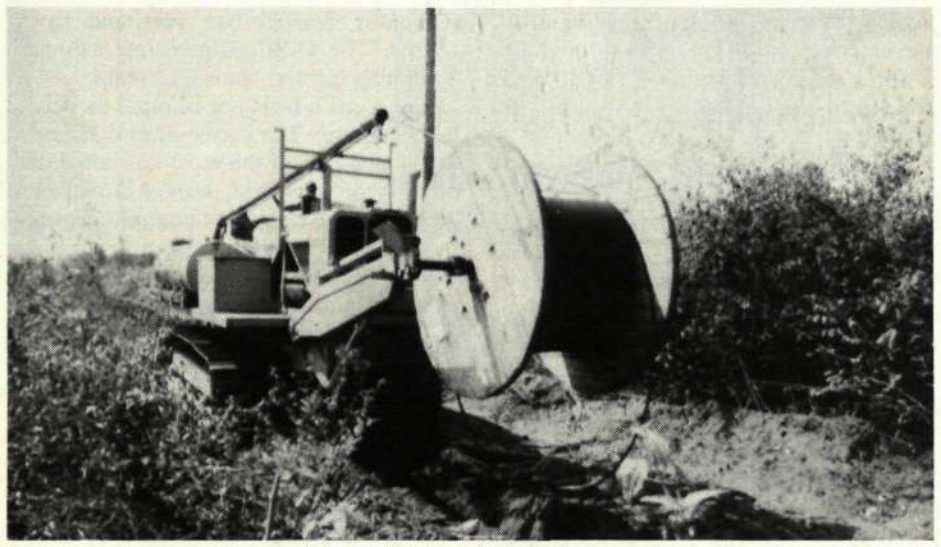
Firms will wish to assess the market. In many developing countries the network is poorly maintained, telephones are concentrated in towns and cities, management is deficient, training, research and local manufacture inadequate and funds constrained.

Such generalizations disguise the fact that the telecommunications market in the developing world is infinitely varied. In India and China, this sector is given favored treatment by the government. In Africa, the feasibility of developing a satellite system providing telecommunication, sound and television broadcasting for all areas of the entire continent is under study. Some oil-producing countries are installing the most advanced digital switching equipment.

Apart from readiness to invest, availability of funds is important. Oil-producers are in a category of their own, as are countries with large populations — China, India, Brazil, Indonesia. Elsewhere a key raw material, combined with tourism, can produce a reasonably healthy balance of payments. But even in these countries the telecommunications administration will have to argue its case for investment finance against competing ministries. In the poorest countries financial support from some aid-giving agency will be needed.

The Center for Telecommunications Development is a useful source of information about telecommunications in developing countries. Operators, manufacturers and finance houses will wish to make their own assessments. They may even offer their own consultancy service to a developing country. Indeed, expert advice could be a most beneficial contribution. Unless developing countries identify the weak spots in their system and compile a coherent plan for the improvement and expansion of their network, effort and resources could be expended in vain.

Developing countries' appetite for training is virtually insatiable. At the lower end — installation and maintenance — training is best carried out locally. More important is training of managers. Napoleon's dictum that there are no bad soldiers, only bad officers applies: a telecommunications administration is only as good as its management. Those administrations whose engineering managers are technically qualified, and whose senior managers are versed not only in the appropriate technologies but also in financial systems, statistics, administration and management will soon find themselves on the way to increased efficiency and profitability. Training of managerial staff, therefore, deserves high priority. Two years ago, the government of Canada collaborated with the private sector in setting up an institute to train telecommunications managers from developing countries. Others could usefully follow this example.



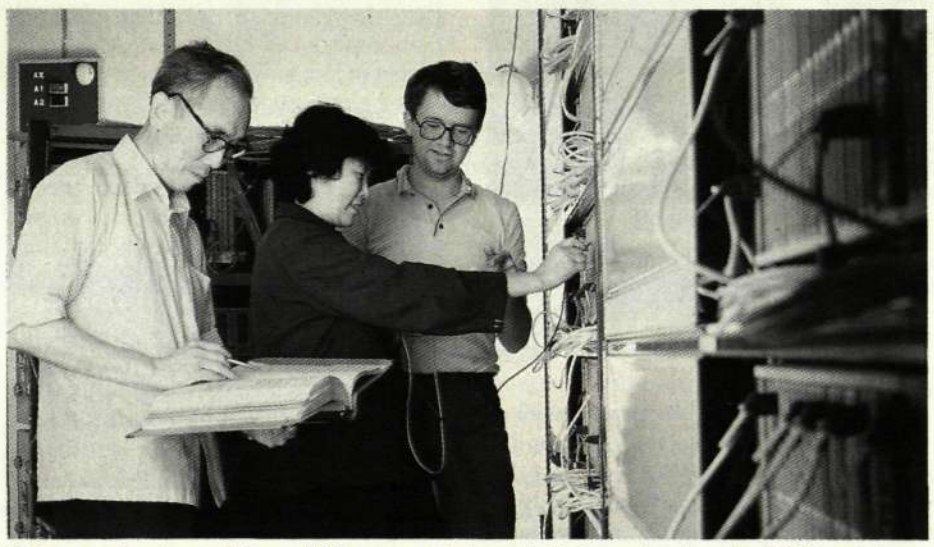
Workmen laying Ericsson cable in the Nigerian countryside.

Next, procurement. In many developing countries a variety of types of equipment is required to take account of geographical, topographical and demographical conditions. Firms in industrialized countries can help in a number of ways, for example, over the choice of the appropriate technology; developing country administrations need to know what is available and at what price, and what best suits their situation.

Potential suppliers can do more than this. Equipment designed for use in the mostly temperate climates of the industrialized world may be unsuited for the heat and humidity of West Africa or Latin America, or the dust-laden atmosphere of the Middle East. Specially designed or adapted equipment is essential in these cases.

There are opportunities here for collaborations between foreign firms and local administration in research and development. The managers of the network in a developing country know the problems to be overcome — whether these arise from climatic, technical or human factors. For their part, foreign manufacturers know the state of the art and are well placed to propose appropriate technological solutions. Combining the two wisdoms can produce benefits.

Developing countries are interested in the transfer of technology and the creation of a local manufacturing base. In the more advanced countries, Brazil and India, for example, a sophisticated capability already exists. In such cases foreign firms have a chance to collaborate over research and development, manufacture and marketing. In the less advanced, a start could be made with manufacture of basic consumer equipment.



China modernizes with an AXE system. Ericsson's links go back to the 1890s, with sales of telephones in Shanghai.

Although circumstances in development countries differ widely, there can be similarities within regions. This has been recognized by developing countries themselves, witness collaboration over satellite communications in the Middle East and in Africa. Operators and manufacturers in industrialized countries should, therefore, look not only at individual countries but also at groups of similar countries as a potential market.

Problems have often arisen over spare parts for obsolete equipment. Suppliers will be asked for undertakings both about maintenance and spares for any new equipment. This is only reasonable, and willingness to give such guarantees enhances the reputation of the supplier.

Whether, having considered these various factors, a company decides to seek business in a developing country will depend in the end on the terms of any contract. Attitudes in developing countries have changed over the past decade. The demand for a New International Economic Order stimulated by the oil price crises of the 1970s has not significantly altered the balance of economic and commercial relationships. Perceptions have changed, however, and cooperation on a basis of common interest and mutual respect is now widely recognized as more fruitful than exchanges of rhetoric.

Joint ventures are a popular form of collaboration and among the easier to negotiate. Developing countries are likely to insist that these cover transfer of technology and training as well as assurances over maintenance of equipment. In exchange, they will negotiate acceptable terms for the financing of the transaction or project.

These then are the issues executives have to address if they are to trade successfully in the developing world. If still in doubt, they might contemplate the benefits in the longer term of moving into a market that is bound to grow in size and increase in prosperity.

A Switch in Time

BTI Hails Versatility Of the AXE System

Most overseas calls originating from and entering into Britain pass through Ericsson's AXE switching systems in London. Here, equipment is really subjected to the test.

"We are very pleased with the operation," says Bruce Meadows, technical officer with British Telecom International. "Despite the fact that it often takes some time for repairs and spare parts from Sweden, we still trust in Ericsson. We have a good relationship and receive a lot technical help."

Not far from the Kings Cross-St. Pancras Station, a sprawling combination of railroad and subway connection in central London, is Kevin House, on Judd Street. The 1800's edifice seems imposing and anonymous, with its grey stone facade. Here, is anchored British Telecom International, with switches that handle part of the outgoing and incoming international calls.

The Switches in this building come from Ericsson, and almost all international calls are handled with Ericsson equipment.

The technical maintenance of the switches is handled by 16 men, 12 on shifts and 4 on daytime. Meadows is in charge of this crew.

"I am a link between management and personnel," he explains, as he moves from the innumerable screens to the back of the huge control room.

The feverish activity speaks of a competence built on confidence in the equipment. BTI has had IDQ (International Directing Inquiries) for three years, ICC (Operator Traffic) one year and from March, The DISC (Digital International Switching Center) came on stream.

The scene now is one of rapid modern-day switching. The pace quickens as London, rated one of the most cosmopolitan cities in the world and, without doubt, Europe's leading financial hub, links up with the rest of the globe. Here, in Kevin House, technology rises to yet another telecommunications challange.

"We get a lot of help from Ericsson in meeting these demands," Meadows affirms. "A few weeks ago, we had on-site help from an Ericsson expert who worked closely with us. We are really pleased with Ericsson and the equipment."

The feverish activity speaks of a competence built on confidence in the equipment.

But Meadows tempers his praise for Ericsson, quickly adding that the time it takes for carrying out reparations could be improved. "There aren't many reparations to be done — and this we are grateful for," he explains. "Sometimes, I can call my Ericsson man in Horsham and, if he has the parts we need, the job is taken care of quickly. Otherwise, it takes an unduly long time for repairs to be made. Take ICC, for example. In our warehouse, we have a part that we have been waiting seven months for replacement."

Controllers man modern equipment in BTI's London Center.

However, as the saying goes, one swallow does not a summer make. Meadows hastens to point out that this is a rare and isolated case. He emphasizes for the benefit of his visitors that he is happy with Ericsson switches. "We have a high impression of Ericsson. It is a good company, and one that we have absolute trust in."

"Surely, you are a Swedish company," he says. "But we have had parts for our switches from Ericsson in Sweden, Ireland, Australia and Holland. Previously, Ericsson was not that well known it British Telecom, but now the AXE orders have made a name for the company."

Thorn Purchase Widens Sales Activity in U.K.

On the trucks, packages and warehousing materials, the signs may still indicate Thorn-Ericsson. But at the switchboard in Ericsson's U.K. headquarters in Horsham, a few miles south of London, operators answer with just Ericsson.

The change of name will be formally effected on January 1, next year.

"There are still a lot of practical details that are expected to take a few months to iron out," says Duncan MacDougall, head of Ericsson's operations in Britain.

For customers, we have always been known just as Ericsson, so the name change poses no problems for them," the genial Scotsman notes.

The name change, of course, stems from a change in ownership, Thorn and Ericsson have worked in partnership now for some nine years in what was known as Thorn Ericsson Telecommunications, in which Thorn owned 51 percent. In September 1988, Ericsson acquired 100 percent ownership. It is a change that is mutually beneficial to both sides, since Thorn EMI wants to concentrate its international business on music, rental, and security and electronic technology. Ericsson, for its part, welcomed the idea of being sole owner of an Ericsson company in an increasingly competitive and expanding market.

"Even though we have always been a British-Swedish company, we have always been seen as a technically strong Swedish company," says MacDougall. "Everything in our technology was Swedish."

Duncan MacDougall

Ericsson re-entered the U.K. as a wholly owned company in 1968. Later, in 1974, with the award of International Switching Centers, a joint company was formed with Thorn. Today, everything centers on the huge successes of AXE, MD110 and mobile telephony in a market that ranks among Ericsson's most important. In 1987, the U.K. accounted for 6 percent of total sales, making it the fourth largest market after Sweden (23 percent), Italy (13 percent) and the United States (7 percent).

"But most of what is sold here is developed and manufactured here," MacDougall indicates proudly.

Today Ericsson's operations in the U.K. have some 1,800 employees, with the head office in Horsham, manufacturing in Scunthorpe and development and engineering in Brighton. The company has expanded very rapidly ever since British Telecom chose the digital AXE system for its local network in 1985.

"Back then we had the typical growth problems that a rapidly expanding company encounters," MacDougall explains. "But that's over now. Today, we are very strong."

Speaking of Ericsson's future in Britain, MacDougall draws on the global aspects of the multinational. He reiterates that the company is well positioned in the private and mobile telephony markets, and this assessment is readily supported by the 250 million kronor contract this summer for an extension to the Vodaphone mobile system.

This assessment is readily supported by a 250 million kronor contract in the summer for part of a digital mobile telephone system for Britain. The market is attractive, since London is one of the world's most automobile intense cities.

'We have always been seen as a technically strong Swedish company.'

When it comes to the public side of the business, however, MacDougall is convinced that Ericsson can be even bigger. "In our factory at Scunthorpe we can already produce more than 700,000 lines per year," he says. "With our commitment to constantly improving the quality of our hardware and software, and the build-up of a strong field support organization, there is every reason to believe that within a few years we will be established as one of the major suppliers of telecommunication equipment in the U.K."

The British Connection

EMI's Choice of MD110 Boosts Efficiency by 30%

Alan Williams, dealer services manager at EMI Records, with the platinum disk awarded for John Lennon's "The Collection."

"We used to have an old British Telecom switch. I never knew how many calls were lost, or how many were successful. But when Ericsson's MD110 was installed two years ago, we got an efficient switch. It provides information on our telephone traffic too."

For Alan Williams, dealer services manage, at EMI Records in west London, satisfaction comes with just about everything in his company's MD110.

Thorn EMI is a well-known British enterprise, with roughly a third of their 65,000 employees working in subsidiaries abroad. Operations include music, lighting, security systems and electronics. To us in Ericsson, many years' cooperation has made the name Thorn Ericsson familiar.

Like Ericsson, Thorn EMI is a huge company, divided into several business areas, divisions and subsidiaries. EMI Records is the music company, where many of the world's leading artists make their records and cassettes.

But rock stars and symphony orchestras are far removed from the sprawling industrial area, in the vicinity of Heathrow, where EMI Records has its studios on Abbey Road, a street made famous by the Beatles with their LP of that name.

At EMI Records Manufacturing & Distribution, there is a large hall, with 30 telephone operators at work. There isn't much to indicate that this is one of the world's biggest music companies — a few posters and hardly any music.

But gadgets of the recording world abound: a big professional stereo set with loudspeakers, record player, cassette tape-recorder and CD player.

"This is where records and tapes are manufactured," Williams says, noting also that this is where customers' telephone orders are received. "Modern music is perishable merchandise — quick ordering and prompt delivery. Our switch has got to function properly, so that our customers can place their orders and so that we know they have done so."

Williams knows of EMI Records' affinity with Ericsson through Thorn Ericsson. But that has nothing to do with EMI's choice of switch, he asserts. "When I had to choose a new switch, I knew what capacity I wanted, but I had no idea who would be entrusted with the task of supplying the system," he recalls.

Williams inquired about systems from manufacturers and users, and finally decided on Thorn Ericsson's MD110. Apart from technology, the price was also attractive, he says.

"Our investment in the new switch has paid off in just one year. I reckon that this switch is 30% more efficient than the old one. Planning operator attendance is much easier, and we've been spared a lot of overtime," he affirms.

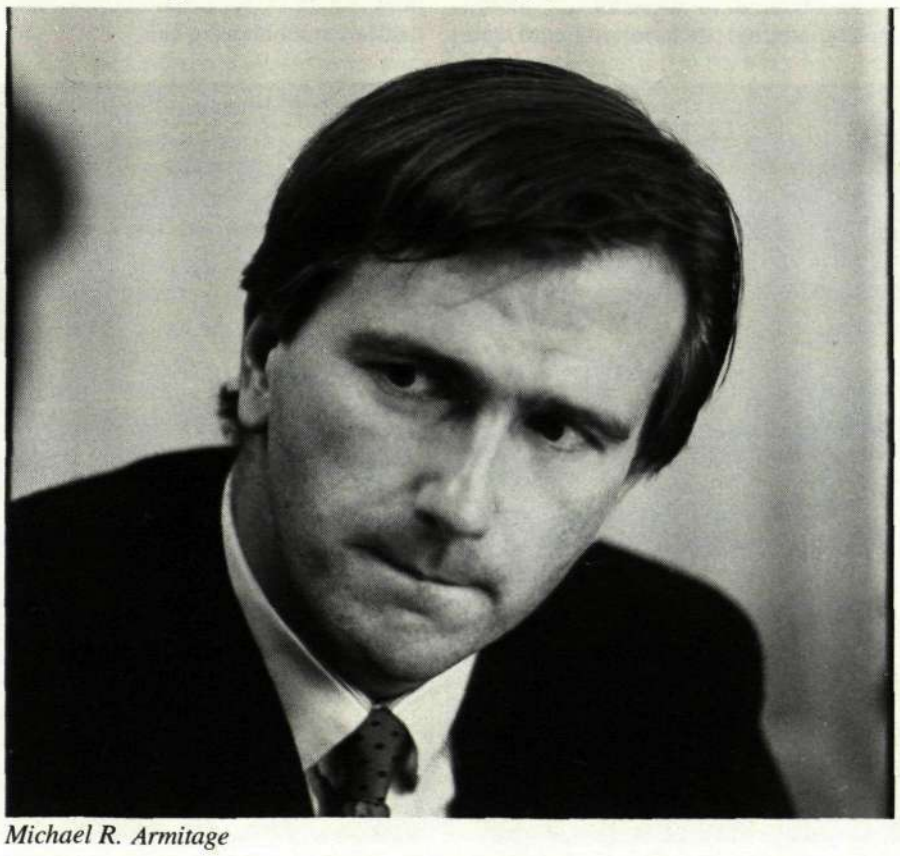
Williams is also satisfied with the way the new switch was cut in. "We cut off the old switch on Friday afternoon. The new one was connected during the weekend, and it was operating smoothly on Monday morning. About 24,000 employees, with 1,300 extensions are now served over 30 incoming lines," he notes gleefully.

Nodding with delight at his praise, we asked if there where any criticisms about the switch — or Ericsson. "Not exactly," Williams says, "except, perhaps, that training at Thorn Ericsson in Horsham was inadequate. There have been no serious faults. What little needed correcting has been quick work. A slight drawback is that the program can't tell you what happened, say, the last half-hour. We're always informed of what happened during a whole day."

We wanted a picture of Williams that links him with EMI Records, but there was hardly any obvious ones within sight. Then, he lit up as he pointed out a real gem on a less well-lit part of the wall: the platinum disk awarded for John Lennon's "The Collection." It was released November 8, 1982, and over a million records had been sold by Christmas that year. Williams holds up the record and recalls another aspect about the MD110. "I tell you what," he says. "My suggestion to management is that we expand the switch. See how satisfied we are?"

U.K. Analyst Cites Gains as a Result of Divesting

"To me, Ericsson represents well-known Swedish engineering skill," says Michael R. Armitage, financial analyst in the City, London's pulsating business center. Armitage knows a lot about Ericsson. And about our competitors, too.



Michael R. Armitage

"I follow the development of some 15 electronics and computer companies," he says, on a visit to Ericsson's Scunthorpe factory in a party of financial analysts. "But I've only been studying Ericsson for the last 12 months. That's why it's interesting to have some background on what is launched on the market."

Armitage is with Morgan Stanley International, which has its headquarters in New York. He has been specializing in the electronics and telecom business since 1983, but has been on the Ericsson track for only one year. "Information about a company doesn't always emanate from the company itself," he says. "I make company visits once a week. On these occasions, I'm directly informed about the company and, indirectly, about others.

At Ericsson, we have our own opinion about ourselves. But the way we're evaluated on the London stock market, for example, is heavily dependent on financial analysts' views of us.

"Ericsson is a world leader in its field, with great potential for financial improvements," says Armitage. "What Ericsson needs now is a solid market share in Europe, before the Common Market abolishes trade barriers in 1992."

In most cases, an analyst's visit to a company is a one-man job. When the Scunthorpe factory was to be visited, Ericsson took the initiative and invited half a dozen financial analysts who accepted the invitation and went the 120 miles from London by train and bus.

> 'What Ericsson needs now is a solid market share in Europe before the Common Market abolishes trade barriers in 1992.'

"A good Ericsson initiative," says Armitage. "Both parties save time, and information is much broader. When you see how local operations are running the way they do here in Scunthorpe, you get a good grasp of what is part and parcel of products and systems, and why Ericsson makes its market investments."

On the Heels of Cellular Mobile Telephony

Mobitex, With a Relay System of Digital Dazzle, Adds a New Dimension to Radio Communications

A growing demand for land mobile communications and the limited number of frequency channels available have caused a shortage of frequencies in many geographical areas. The obvious solution to this problem is to employ the given frequencies more efficiently.

Ericsson has risen to the challenge by developing a new mobile data communication system known as Mobitex, a land mobile communications system fulfilling all the standards set by the Swedish Telecommunication Administration.

Mobitex was developed by Eritel, a 50-50 joint venture between Ericsson and Televerket, the Swedish PTT.

Group call (broadcast message) and a mailbox in the network are two of the prominent features that highlight the Mobitex system, which goes in hand with Ericsson Radio's strategies and objectives.

It has been shown that the pressure for a modern version of private mobile radio has come from users.

Mobitex allows data and text to be sent as digital data, and speech calls are set up on a number of trunked channels shared by the users. The system's built-in flexibility and the facilities for tailoring terminals to the user's requirements make it economically attractive to many radio communication users who now run privately owned radio systems.

Mobitex also opens the way for new user groups, such as those who have not used radio communication previously for economic reasons or because existing systems did not offer the facilities they needed for example, for data and text communication. It is also beneficial for end-users, who cannot use or afford fixed lines.

The system infrastructure that supports a Mobitex mobile data communication service consists of a network of radio base stations, linked through a hierarchy of area and main digital exchanges.

The radio base stations provide the access points into the network for the mobile subscribers.

"For Ericsson, Mobitex is the next growth area in mobile communications after cellular mobile telephony," says Anders Torstensson, Marketing Manager for Mobitex. "It affords the same freedom to data communications that cellular technology brought to voice communications."

Mobitex is optimized for data rather than voice communications and is a complementary type of network to a mobile telephone network. A Mobitex network, like mobile telephone network, is built up on a cellular basis.

One of the most important differences between the two types of mobile telecommunication is the far more efficient use that the Mobitex concept makes of available radio spectrum. Where a mobile system can typically handle 20 to 25 subscribers per channel, the Mobitex data system can handle up to 1,000 per channel, depending on the needs of communication in the actual customer applications.

It has been shown that the pressure for a more modern version of private mobile radio has come from users. They are demanding a more sophisticated solution that works with data rather than voice. They have made large investments in information technology and they want to be able to give their mobiles direct access to their data processing systems. They want systems that can cope with larger numbers of mobiles than can realistically be handled with voice systems and human operators.

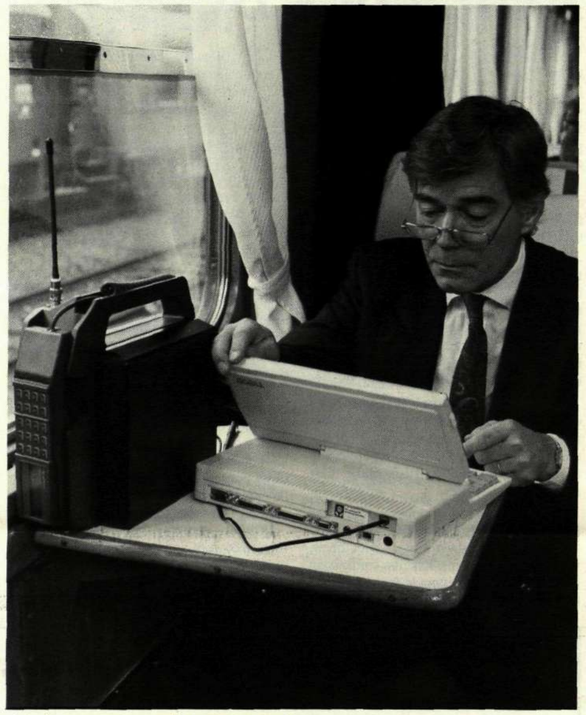
"Mobitex answers all these needs," says Torstensson," and we expect that many users of traditional PMR dispatch systems will move over to Mobitex services as soon as they are available."

On the sales front, Mobitex entered commercial service in Sweden in October 1986, and to date Norway and Finland are also installing the system.

The Mobitex network comprises the base radio stations, area exchanges, main exchanges and a subscription handler. The base radio stations, which are used as connection points to the network for the mobile terminals, are connected to area exchanges, each exchange handling several stations.

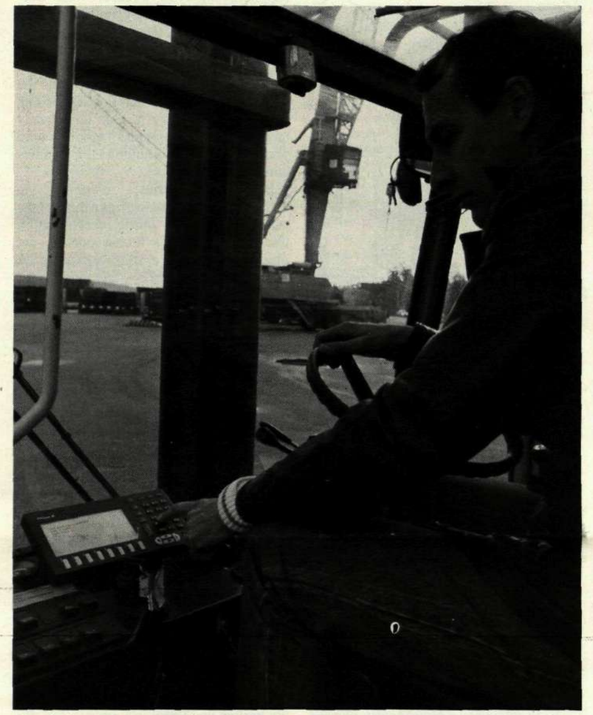
In effect, Mobitex is a "store and forward" system, in which text and other data is transferred between two terminals as data packets from and to the terminals and between the network nodes. There is no real-time contact between terminals.

The system does allow for non-mobile applications, too, such as credit-card reading or validation system for gas stations. It is also suitable for semi-permanent applications such as weather monitoring stations that may be occasionally relocated to a different monitoring site.



A train passenger transmits a status report.

Rescue team accessing critical information on an accident victim. The Mobitex system allows for an instant digital readout of data.



A truck driver informs controller of his location.

As for the benefits to PTTs, they are numerous. Mobitex offers greater revenue per channel than cellular network. "The precise comparison depends, of course, on pricing strategies," notes Torstensson. "But Ericsson expects that earnings per channel from a Mobitex network will be between two and three times greater than the earnings from a cellular mobile telephone network."

In effect, Mobitex is a 'store and forward' system.

Elaborating on its technology, Torstensson points out that Mobitex, as a concept, makes very efficient use of radio spectrum. "This is another reason why Mobitex is expected to spark greatest interest from the industrialized world and, to some extent, developed areas in the Third World," he says.

The history of Mobitex is a young and successful one. As an open system standard — the world's first for mobile data — it is designed to encourage other manufacturers to make terminal equipment. The tacit understanding is that Mobitex would do for mobile data what Ericsson and Televerket's pioneering work accomplished with cellular telephony, Torstensson says.

Mobitex does have some technological elements in common with cellular mobile telephony, Torstensson notes, but the fundamental difference is that whereas cellular is primarily intended for speech (but can handle data) Mobitex was primarily designed for data (but can handle speech). This accounts for features of Mobitex such as message store and forward and packet data.

Although the system is intended for dispatch traffic between mobile units and dispatch centers and between mobile units, there is scope for direct voice communication between a mobile unit and a telephone in the public telephone network. The system can also be connected to the public data network and the telex network.

With Mobitex as the wireless link in a common communications network, the resources of many public services can be coordinated efficiently in emergencies and similar situations. Certain types of radio communications can also be assigned priorities as circumstances demand. In addition, unlike purely mobile telephone systems, Mobitex is designed so that communications can continue uninteruptedly even if one or more exchanges and system links are out of service.

Moreover the Mobitex base station is more "intelligent," compared to the cellular base stations. This gives it other advantages such as electronic mailbox.

In addition with Mobitex, the social and economic benefits to society can be substantial. Law enforcement agencies, fire departments, civil defense units and medical services become more efficient when they all have access to a nationwide wireless network that offers the possibility of direct and immediate access to computer facilities.

It is precisely these versatile characteristics that make Mobitex an attractive proposition for global markets. And there is the added advantage from being able to change easily to Mobitex from an existing radio communication network.

Above all, Mobitex is an accommodating system, technologically. Ericsson's attitude to the competitive supply of terminals is clearly spelled out. Its policy is to publish full technical data on the air interface of Mobitex so that any other manufacturers can supply terminal equipment. Several companies have already indicated that they intend to develop and market terminals for the Mobitex system. So far, Mobira and Philips have developed terminals for the Mobitex system.

Mobitex, as a concept, makes very efficient use of the radio spectrum. As such, it is expected to spark greatest interest from the industrialized world.

Ericsson hopes that the adoption of an "open standard" for the air interface in Mobitex could quickly establish the system as a de facto standard in many countries.

Who's Using Mobitex

Typical users of Mobitex are expected to be private and public sector organizations such as police, warehousing and transport companies, utilities, and sales companies.

These will in the main be organizations that are at present users of Private Mobile Radio (PMR) for traffic dispatch purposes. In addition, some organizations for whom PMR has not been a satisfactory solution will adopt the Mobitex approach; service and maintenance organizations with teams of field staff are a good example.

The ways they will use Mobitex will be as follows:

- **Taxi firms:** Experience in Sweden has shown the productivity gains that can be achieved by automating the direction of taxis to customers, using computers linked by radio to data terminals in the taxis. A central computer can automatically select the nearest available taxi to the customer, and transmit instructions via Mobitex to the cab concerned. The driver simply presses an acknowledgement button. An integral printer gives the driver hard copy confirmation of the next pickup point.
- **Police:** Letting mobile police access directly various computer databases on vehicle registration numbers etc. The group call facility in Mobitex will enable broadcast messages to be transmitted to all groups of vehicles from the control center, and will also permit broadcast messages to be sent, for example, to police force vehicles only, or to police and fire brigade, or other permutations. Another attraction of Mobitex will be ability for different organizations to communicate with each another.
- **Transport companies:** Drivers will be able to inform the controller of their location and status, and receive directions. Local wholesale or retail delivery vehicles can notify the warehouse of what has been sold, so that replacements are ready and waiting when the van returns to the base.
- **On-site mechanical handling vehicles:** Fork lift trucks can be directed in automated warehousing systems, and drivers can have direct access to the main computer from their trucks.
- **Forestry:** In this and any other application where workmen are not only mobile but often working in remote locations, it gives a communication channel for routine messages as well as emergency alert signals. The emergency button can be carried by the worker while he/she is away from the vehicle.

Lars Ramqvist on Visions and Ventures

'If We Utilize the Competence We Have Together, Then We Are Unbeatable'

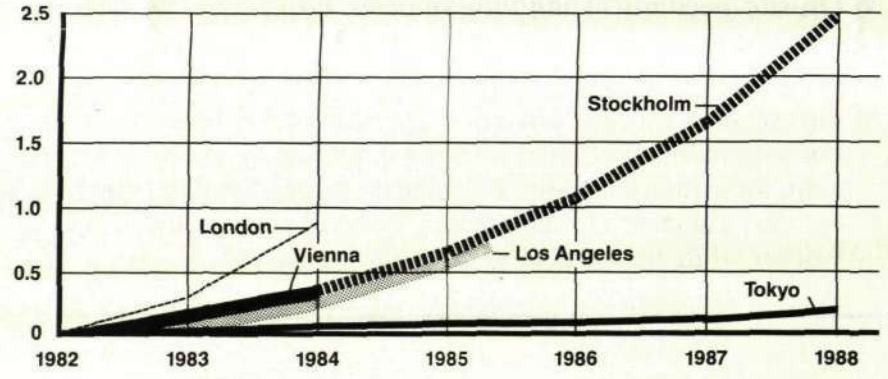
"Many can make mobile telephones and others can produce base stations. But only a few can offer an entire system development. If we use the accumulated competence we possess in the right way, for example, with mobile telephone systems, we are unbeatable."

So says Lars Ramqvist, Executive Vice President and newly appointed head of Ericsson's fastest growing business area, Radio Communications.

But Ramqvist speaks not only for his business area. He stresses that Ericsson's unique strength on the world market is first and foremost the sum of its combined competence.

"The combination of AXE, MD110 and radio gives us our unique strength," he says.

Continuing its role as a market leader, increased aggressiveness through partnership or purchase of companies, possible expanded manufacturing in other countries and, perhaps establishment as a network operator for mobile telephony — these are some of Ramqvist's visions for Ericsson.



Radio Communications, with the very successful mobile telephones, has, for several years, had a sales growth ceiling of 20 to 25 percent. This year, it appears that it could be even higher, when the latest heavy orders are translated into deliveries. Can this pace continue, and what are Ramqvist's visions for the future of his business area?

"If we take cellular mobile telephony first," he says, "there is much to be said for us expanding at the same rate through the nineties... Today, we have, maybe, three million mobile subscribers worldwide. Now, some forecasters are talking of between 50 million and 100 million by the end of the next decade."

Does Ericsson really have the capacity and organization to stay with this explosive development and to defend its market share of 40 % of the world's mobile subscribers?

Ramqvist replies: "That is my overriding issue today. My vision for keeping our market lead is based on two concepts: customer orientation and quality. Both of these must, to an even greater extent, leaven our entire operation, from construction and production to delivery and after-sales service."

"That is a bit of a load at the moment throughout the entire business area organization. It is working too much — and some more — to meet the demands. But, nevertheless, there is a tendency to be late on deliveries. The digital breakthrough also means that there is new technology. It does not make matters easier."

Ramqvist also believes that cooperation within the company in order to achieve optimum quality is even more important. The combination of the public-side AXE switching and the office MD110 switching system gives Ericsson and his own business area a unique strength on the world market.

Ericsson is good at mobile telephones. But the company has invested huge resources to develop terminals, even telephone parts. HotLine is the product family. Is it really worth investing in a product that costs less and less, month after month, and in competition with South Korea and Japan?

"Yes," Ramqvist assures. "Models will be smaller and smaller and cost less and less every year. We have placed so much that actually we have been able to stay in the forefront up to now, despite the fact that we are quite small in the world regarding terminals."

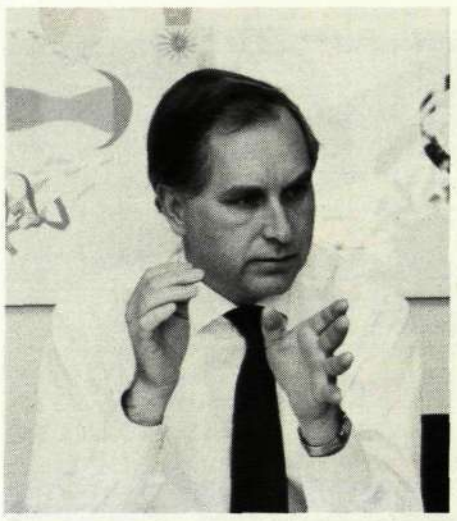
"We will stay with the front runners as long as we can do so profitably. But it is also possible that the market could gradually split apart. We must at all times seek a niche for ourselves, both for products and markets, where we can realize profits. Possibly, we can find a production technique that will render us insusceptible to competition. Here, again, quality comes into the picture.

"In the end, everything depends on whether we can maintain and improve quality in our work from construction to after-sale service. The rapid development pace, with demands for new models every other year, makes that tough. But we shall try!"

Ramqvist holds, however, that Ericsson could be obliged to manufacture overseas. Already, Finland's Nokia and other competitors are doing so.

"It is, in fact, part of another vision I have," Ramqvist asserts. Without a doubt, in the future we will have many a partnership with other companies abroad. Actually, we are already actively seeking partners within the radio communications area. We can see us buying or partnering what is necessary for development, production or market penetration.

"It is a question of development tempo. If Ericsson really wants to ride with the explosive growth, it cannot expand its own organization at such a fast pace. In that



Lars Ramqvist

case, buying finished development and production capacity is a better alternative. Eventually, that would be companies, which, in the first place, already have a market. We can manage as far as technology is concerned."

However, for mobile telephony, Ericsson needs higher production capacity, if market growth continues at its current pace. "That is something we must ponder," he says.

"Above all, if I can take my visions a little further, one wonders whether the future will not see a similar case with public telephony. There, we had to set up plants around the globe to keep pace with market demands. If we become equally strong in mobile telephony, it is only natural that governments and partners would want to see us as a home company in the markets where we sell."

The problem has a direct bearing on the actual Common Market issue. The larger markets within the EC are beginning now, one by one, to purchase a system compatible with the digital pan-European mobile network. Ericsson has won half of the U.K. market and is hoping for even more on the Continent.

"But we shouldn't be so naive as to think that it would suddenly be an entirely open market and force competition, come 1992, when the EC becomes a single free internal market," warns Ramqvist. "There is an obvious trend that it would be French suppliers supplying France, West Germans supplying Germany, Italians supplying Italy, and so on. Our strategy is to work in tandem with the domestic companies, such as, for example, Matra in France."

Indeed, mobile telephony is only the start of something that could become great. The visionary pundits are already talking about the portable "mobile" telephone as a new "communications generation."

In such "fantasies," telephony via underground cables is seen as a thing of the past. The future is a little receiver and a transmitter in one's breast pocket, not much larger than a mini-calculator. A large part of today's "telephone-less" people in the underdeveloped world would bypass the stage of cables and go directly to communications via mobile telephony. That speaks of many hundreds of millions of people.

Ramqvist is cautious about such "dreams." But he hints at a parallel in a very surprising vision, which lies much closer at hand:

"At the beginning of the century, when the telephone network was being built up, Ericsson was a network operator, that is to say, it handled the entire public telephone system, as Televerket does today. This is a thought that I dabble with, sometimes — that Ericsson could establish itself as a network operator, or as a partner in network operation for wireless communications."

"There is no cause for Ericsson to refrain from such business opportunities, at least not in a vision," Ramqvist affirms. "There is still a large newly established market, not least when digital technology is moving ahead, and monopolies are being broken up. There is a market, too, for operating a Mobitex network, local radio networks that need licenses from private network operating companies."

There is also no lack of visions in Ericsson's Radio Communications Business Area. And, indeed, visions are a must for any success. They are like dreams of world records for sportsmen. To realize them, though, is harder. It is achieved only by the few who first succeed in making perfection out of the mere ordinary.

"And that we shall do, with mutual perseverance," Ramqvist assures.

NMT — From Zero to Millions

Sweden and the other Nordic countries have been pace setters in the use of mobile telephony, ever since the inception of NMT, the Nordic Mobile Telephone system in 1981.

The market promises to be an explosive one, confirming that Ericsson has come in at the right time as a manufacturer and supplier of the systems.

The experience — and subsequent success — of NMT has set the stage for further gains in a world market extending beyond the Nordic shores. The market for mobile telephony has grown from zero to three million subscribers since 1981. In Sweden alone, there are about 200,000 subscribers, and rate is increasing at about 7,000 per month.

NMT is not by any means a geographic system limited to the Scandinavian countries. The standard, which initially was set up for the Nordic group, is now applicable to some 17 countries and comes under the designation NMT 450 and NMT 900. The numbers refer to different transmitting frequencies.

There have been indications that the market could develop too rapidly, precipitating a steep drop in prices and taxing production capacity.

Bartering for Business

How Commodities Pay for Communications Through Countertrade, Swap and Switch

Ever since the Indians traded Manhattan Island for a few trinkets, barter has held a place in U.S. business life. Today, it is enjoying a new popularity, as multinationals in Western Europe turn to countertrading with industrialized, developing and Eastern Bloc countries.

High technology, a crucial commodity in enhancing the economic infrastructure of many of these countries, figures prominently on the list of desirable Western products. And Ericsson, as a major manufacturer of this technology, has been involved in arranging or accepting a wide variety of products and services in exchange for the delivery of its high-tech products.

"We are continually in the process of negotiating agreements or completing existing ones," says Lars Rönn, Business Development, Offset, for Ericsson Radar Electronics. "Although countertrade constitutes a very low percentage of our annual turnover — approximately 1 percent — it remains an essential element in trading with many countries."

Basically, the concept of countertrading is a two-way street for players involved. Companies wishing to sell internationally frequently discover large market potential in countries wanting more than just to buy the latest in communications technology; they want, too, to increase the export market for their own products. They want to solidify their labor market by providing jobs secured as a result of backorders for their products. In some cases, they do not have a convertible currency, tradeable on the international money markets, thereby making cash payment for their foreign purchases impossible.

Lars Rönn

Countertrade agreements can take many forms, falling into categories such as offset, barter, counterpurchase, compensation, buyback, swap and switch, to name a few. Each type has its own characteristics and fulfills different requirements.

Ericsson's participation falls almost solely into the offset, counterpurchase and barter types of agreements. Recent economic trends have made their impact felt in the types of trade proposals that Erisson, along with other multinationals, has had to consider.

Citing a case in point, Rönn notes that many countries, often with large market potential, are making a strong push to exchange their "high-tech" products for Ericsson's.

For Ericsson, offset has become the most common form of countertrade. It can, in simplified terms, take two forms — direct and indirect. Both types involve the exchange of high-tech products. Direct offset consists of agreements where the products go together, such as components traded for use in the manufacture of the product being purchased; indirect offset is simply the exchange of one type of high-tech product for another unrelated high-tech product.

The export of defense products almost always involves the acceptance of some type of offset as part of the terms. Indirect offset is simply the exchange of one type of high technology for another unrelated high-tech product.

Another type of arrangement is counterpurchase (parallel trade), which is the signing of two separate but related agreements. The first calls for cash payment for the product ordered; the second contract, which must be signed simultaneously, is frequently for another domestic product that the buying country would like to sell for any number of reasons.

A third type of agreement, infrequently used by Ericsson, is barter, which, as it implies, is the trade of another country's goods in exchange for our products.

"Countertrade is a reality of trading on an international basis today," says Rönn. "Costs can be high and situations extremely complex."

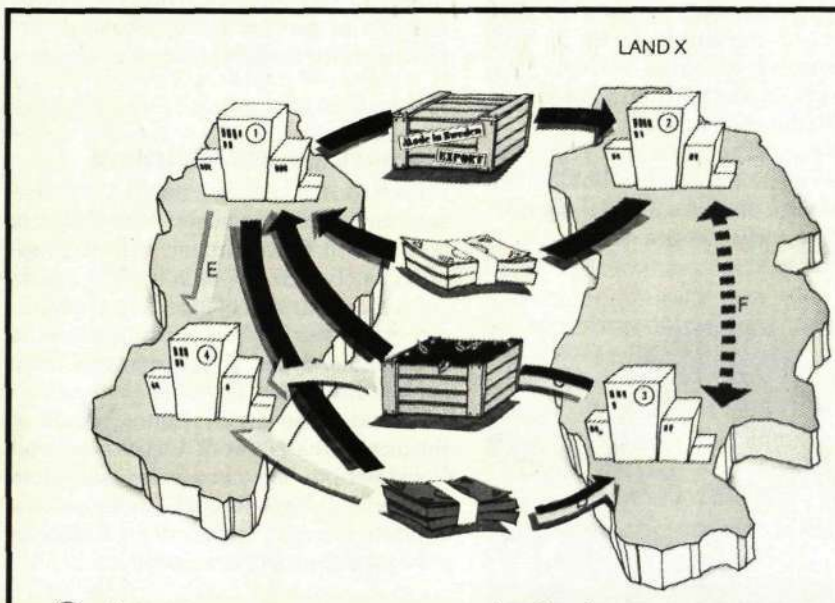
Indeed, in a competitive world market, countries and companies looking for sales have found that countertrade can solve some of their international trading difficulties. That is not to say that the practice is without pitfalls. Countertrade in all its forms is exceedingly complicated and costly. The negotiations leading up to a deal are delicate; many countertrade deals have been known to fall apart in the initial stages. And after signing countertrade contracts, many companies have lost money. Those that are inexperienced with countertrade have run into problems with pricing, recognizing appropriate products and marketing the countertraded goods. For example, after many unsuccessful attempts, a well-known American company failed to sell the Algerian wine it had bought as part of a countertrade deal. The result was that Algerian wine was served in the company's cafeterias for many years to come.

Ericsson's strong preference is not to get involved in any type of countertrade agreement but, when it is essential, the name of the game is to limit the amount as much as possible while still striking the agreement and keep the products related to our production requirements if at all possible.

Due to Ericsson's wide international experience, the list of countries with which some type of countertrade agreement has existed is extensive and includes deals with Yugoslavia, Czeckoslovakia, Hungary, Uruguay, Pakistan, Macau and Greece.

Key issues arise as to how one can evaluate the value of the goods offered, find buyers and — increasingly problematic — what can be done with "high-technology" products that don't meet the standards of the industrialized world?

"Ericsson has an established network of specialists with expertise in various types of product markets who help make these evaluations and find buyers for products that we do not require," Rönn says. Sukab is one of these organizations located in Sweden and owned jointly by industry and the Swedish government via Investerings Banken. Mercator is another Swedish, privately-owned company used as consultants for these transactions. Ericsson also cooperates with several international organizations.



① *Exporter*
② *Importer in land X*
③ *Exporter in land X (can be the same as 2)*
④ *Third party, independent of 1, 2 and 3*

A Goods
B Payment (100%)
C Goods (i.e., 40% of the value of A that goes to 1 or 4)
D Payment for C, which comes from 1 or 4
E Commission and price
F Support agreement between 2 and 3

In recent years, Ericsson has accepted metals such as copper and aluminum and steel products such as hot-rolled coils as well as products such as ferroalloys, automobile tires and upholstery leather as counter purchased products.

"No matter how cautious we attempt to be there always remains the risk factor that countries can't or won't deliver the products we can handle," says Karl Henrik Ström, of Corporate Market Coordination. "We must always remember that countertrade is just another form of financing, sometimes essential for performance of the business."

Even excluding the intracountry barter among the Communist world, the annual value of global countertrade may now reach as high as USD 100 billion. 50 countries, have made countertrade an important, if not critical, consideration in their international purchases. OPEC nations actively barter for everything and anything.

In a tight world market, there is little doubt that managers of international companies that insist on traditional financing techniques may gradually lose in the international trade war. Those that adapt to the new international environment can use countertrade to their advantage.

A Barter Glossary

- ***Classical barter*** *— Where goods are exchanged without recourse to money. Relatively rare and, inevitably, government to government, such deals usually involve agricultural or mineral commodities, where quality and volume can be verified. It is usually difficult to match, by value, the requirements of potential partners under this form of barter.*
- ***Counterpurchase*** *— Alternatively referred to as compensation or parallel trading, the most common form of barter for developing countries, whereby specific import orders are placed with suppliers who accept an obligation to buy export products, sometimes equivalent value. These counterpurchase obligations can often be assigned to third parties.*
- ***Offset*** *— Similar to counterpurchase, this usually applies to such deals as government purchases of aircraft or military equipment. The private corporation making the initial sale agrees to offset part of the cost by purchasing or producing components, sometimes for related products, locally. Alternatively, it may agree to buy or market local products.*
- ***Buyback*** *— Usually involves such large-scale projects as steel mills or truck plants, under which a supplier accepts some of the output as payment, steel bars or trucks, for example. Such deals, based on 10- to 20-year contracts, guarantee the transfer of technology and export markets. Some forms of buyback are also referred to as counterinvestment.*
- ***Counterinvestment*** *— A new form of barter, under which a company seeking to export to a developing country helps to set up local export projects. Earnings from such projects are specifically allocated to pay the supplier in question.*
- ***Switch*** *— A variety of countertrade turning on the creation of bilateral or perhaps trilateral trade agreements involving the establishment of clearing unions. Payments do not change hands but accounts are credited or debited.*

Ericsson Updates

USD 230 Million Contract For Expansion in Mexico

A contract worth more than USD 230 million has been signed with Telefonos de Mexico. The contract, signed by Ericsson's local manufacturing company Teleindustria Ericsson S.A., covers the 1990 network expansion program with the AXE digital switching system as well as analogue switching systems, transmission, power and cooling equipment.

With this contract, Ericsson reinforces its leadership in Mexico, representing well over 60 percent of the total switching market since the early eighties.

Per Pedersen in Manila.

Fiber Optic Order For Company in Manila

Ericsson Networks (Philippines) Inc. (ENP) has been opened in Manila. The organization, headed by Per Pedersen, has already received its first order from PLDT (Philippine Long Distance Telephone Company), a private and also the largest telecommunications company in the country, with more than 90 percent of the market.

The order is for USD 4.25 million to lay 170 kilometers of fiber optic cable connecting their various exchanges as well as to install a PC-based, project-management system.

Finland Orders AXE Exchanges for the Nineties

A procurement agreement with Helsinki Telephone Association, covering delivery of AXE digital telephone exchanges for the period 1990 to 1995. 1990-95. The agreement, concluded by Ericsson's Finnish subsidiary Oy L M Ericsson AB, is worth more than FIM 100 million (USD 25 million).

According to the terms of the agreement, Helsinki Telephone Association will purchase the AXE exchanges for its Integrated Services Digital Network (ISDN). With these exchanges it will be possible to provide more advanced services directed towards business customers.

Network Orders in Britain

Ericsson has obtained orders for the expansion of telecommunications and data networks in Great Britain, valued at approximately SEK 25 million. The orders cover the expansion of local telecommunications networks for British Telecom in East Midland and a data network for a bank in London.

According to Björn Linton, head of Business Area Network Engineering and Construction. The current British orders represent a breakthrough in Ericsson's efforts to increase its share of the European network construction market.

BT Adopts Operator System

With the phasing out of its conventional manual switchboards, British Telecom International has now standardized on Ericsson's computer-assisted, operator system.

Known as OPS, this modular sub-system within the AXE digital exchange concept provides a universal operator position able to handle all types of service. Thorn Ericsson already supplies OPS for Racal Vodafone's cellular exchanges and so BTI becomes the second major network provider in the UK to adopt this system.

Progress Report For Mobile Systems

Ericsson cellular radio systems are now in operation in 29 countries. These installations include 143 exchanges and almost 63,000 base stations. The number of subscribers now using Ericsson's systems is 1,304 million out of a total of 3,245 million cellular subscribers worldwide, giving Ericsson a 40% market share.

"Ericsson has recently received two new contracts for the digital pan-European mobile telephone system for the nineties; one from Racal Vodaphone for the U.K. and one from France Telecom. Those contracts confirm Ericsson's position as the leading supplier of mobile telephone systems," says Lars Jonsteg, Marketing Manager, Radio Communications.

AXE equipment eases through a door in London's Docklands.

AXE in London's Docklands

Ericsson has won a significant contract to supply a new, compact version of its AXE digital exchange system to British Telecom for provision of subscriber services in London's Docklands. The order is believed to be the world's largest distributed digital public exchange.

The contract, worth over GBP 5 million, will provide a substantial number of the new pre-tested remote subscriber stages (RSS) for use throughout the Docklands development. The distributed subscriber network will behave as a single exchange providing ultimately approximately 30,000 exchange lines linking individual sites.

New Cellular Contract For Hong Kong

Ericsson has received an order for a mobile telephone system for Hong Kong, valued at USD 16 million, from The China Telephone Co. Ltd.

The contract covers the supply of an AXE digital exchange with high-capacity APZ 212 processor, plus radio base station equipment for 36 sites in the Hong Kong.

$60 Million China Purchase

Ericsson has signed a general contract worth USD 60 million to supply Liaoning province with local AXE lines as well as transmission, power and associated equipment. The detailed contracts will be signed during 1988-89.

Earlier this year, Ericsson attained the position as the largest supplier of public switching and mobile telephone equipment to China.

On the Move

Kjell Andersson has been appointed Vice President and General Manager of the Computer Systems Division of Business Area Defense. He has most recently been manager of the Counter Systems Department within the Airborne Electronics Division, in Kista.

Bo Gedda has been named President, Ericsson Signal Systems AB, effective November 15. He was previously Executive Vice President, Ericsson Signal Systems AB, and Marketing Coordinator, Ericsson Signalling Group.

Janne Sjödén, former production manager at the Telecom Cables Division in Hudiksvall, has been named general manager for the Specialty Cables Divsion in Kungsbacka.

Christer Wiklander has been named Communications Manager for Business Area Public Telecommunications and Vice President of Ericsson Telecom.

Björn Erman has been appointed General Manager of the Airborne Electronics Division, effective October 1. He has most recently been manager of the Airborne Displays Department in Kista.

New Sales Unit Established

Ericsson has formed a new company, Ericsson Sverige AB, to meet the demands of the changing Swedish telecommunications market.

"We are creating a market-oriented sales and service organization for the private telecom, datacom and mobile communication market, while providing our customers with a single Ericsson contact point," says Bengt Gustafsson, the newly appointed president for Ericsson Sverige AB.

Gustafsson comes most recently from the position of President, Ericsson Signal Systems AB and Chief Executive, Ericsson Signalling Group.

"The move to combine the Swedish sales division of Network Engineering and Construction, Ericsson Radio Systems Sverige AB and the Swedish Eripax sales force will give us a powerful position from which to meet the market demands," Gustafsson points out.

"We anticipate that, with the company's 1,400 employees, an annual turnover level of over SEK 1 billion will be reached during 1989, our first year of operation," the new president says.

"Strong, new competitors are going to appear on the scene," says Per Olof Åkerberg, responsible for market coordination in Scandinavia.

"Customers will become increasingly knowledgeable about telecommunications as the market will be actively worked with advertisements and marketing campaigns. Companies will be increasingly attentive, assessing the effectiveness of their utilization of telecommunications in their operations," Åkerberg says.

"We want to be in the leading position," Gustafsson points out, as the expected quick and interesting developments materialize in this market as deregulation gets under way.

IN PRINT

The following materials are now or will soon be available:

- **Corporate Visual Identity (CVI) Manual.** Available from Corporate Relations (HF/DI), Stockholm.
- **Information Systems Security Policy and Guidelines 1988.** Brochure available from Corporate Risk Management (HF/DKR), Stockholm.
- **World Leader.** Brochure describing Ericsson's position as a world leader in communications technology. Planned for distribution in December by Corporate Relations (HF/DI), Stockholm.
- **Ericsson in Europe.** Brochure to be available for distribution in December by Corporate Relations (HF/DI), Stockholm.
- **Ericsson in Latin America.** Brochure to be available for distribution in December by Corporate Relations (HF/DI), Stockholm.
- **Our North American Presence.** Brochure to be available for distribution in December by Ericsson Inc., Richardson, Texas.
- **Products and Systems.** Brochure to be available for distribution in December by Corporate Relations, Stockholm.

Racal Orders AXE Worth GBP 40 Million

Racal Telecom has announced plans to order an additional seventeen AXE exchanges for its expanding Vodafone cellular radio telephone network.

This order, worth almost GBP 40 million, take to a total of 27, the number of AXE exchanges now on order or installed for Vodafone's U.K. network. This order follows the announcement earlier this year that AXE had been selected for the infrastructure of Vodafone's planned new digital network which will become part of a pan-European service in the 1990s.

Twelve of these latest exchanges will operate as additional mobile switching centers while four will provide a new transit network. A separate training exchange will also be provided.

U.S. University Purchases MD110 Communication System

A contract valued at USD 29.5 million from the University of Massachusetts to supply a digital MD110 communications system for voice and data, was won in competition with a number of American and Japanese companies.

The contract, one of the largest ever awarded for a private communications network, covers installation of slightly more than 30,000 lines serving the entire university.

"The contract with the University of Massachusetts constitutes an acknowledgment of the MD110 systems versatility in terms of integrated speech and data communications for companies and organizations that are distributed widely over a large area," says Ronny Lejdemalm, president of Ericsson Business Communications AB

Coping With Computer Theft: It's Not Hacking, It's Wrecking

The burglar of today no longer resorts to crowbars and lock picks to break in. In a world of high-tech, he uses the computer to steal and destroy.

He may be a bit harder to track down, but he is not unstoppable.

In a bid to stop theft and unauthorized access to information, Ericsson has just issued Information Systems Security Policy and Guidelines, which explains why technology security is so vital for a company like Ericsson. Its increased dependence on electronics, telecommunications and other computerized equipment heightens the risk for loss and theft of computerized information.

Listed among the threats are:

— Physical damage.
— Theft of computerized marketing information and company secrets.
— Risks of destroying data functions.
— Tampering and changing information to mislead.
— Unauthorized entry into the system.
— Disruption of telecommunications links.
— Unintentional errors in marketing activity.

In order to minimize the risks and prevent damage, Ericsson is in the process of setting up a data security network, complemented with courses in its operation. Heading the security committee, known as DASEC, is risk manager Peter Flensburg. The complementary instruction program is run by Ericsson Telecom's data security chief, Jan Olof Andersson.

"The overhead responsibility for security rests with executive management," says Flensburg. "But even line managers and other higher staff have unspoken commitment to protect data base information."

To cope with any lapses in security, it has been decided to have someone specifically responsible for each data system within Ericsson. In each business area, there will be a security chief, who will represent the business area in DASEC. Moreover, each business area will have its own data security unit.

Besides the brochure on policies and guidelines, Ericsson Telecom has issued an ADB security handbook for distribution within the rest of the company, which is being translated into English.

Swedish Telephone Production to Close Down

Ericsson has announced its intention to close down its production of telephone instruments in Sweden during 1990.

The decision affects a total of approximately 700 salaried and hourly-rated employees at Ericsson production units in the province of Blekinge, southern Sweden. The units involved will be phased out gradually, commencing in 1989.

"The increasing severe competition, as a consequence of increased deregulation in our markets, is making it impossible for us to compete with low-price countries," says Ronny Lejdemalm, president of Ericsson Business Communications AB in Stockholm. In the future, telephone production operations will be relocated to South East Asia.

CVI Outlines Identity Rules

The manual on Corporate Visual Identity (CVI) is ready. It defines the rules and guidelines for how Ericsson's name and products should be positioned in different contexts — advertisements, placards, billboards, vehicles, gift items etc.

Every use describes a specific area, for texts as well as for pictures. There is ample information on general rules to be followed and as to where further details can be obtained. Illustrations provide clear guidelines for the use of the Ericsson name and logo, as well as relevant material on copyright, chip designations, product names, etc.

Visual unity in name and logo is of utmost importance in projecting Ericsson's corporate image. It portrays who we are and what we stand for. Hence, the need for positive associations in the use of these symbols. It is crucial that the guidelines and rules stipulated be followed so as not to give a divided impression within Ericsson.

It is in this context that the CVI manual was designed. It is an ideal tool for promoting the common and unifying profile within Ericsson and increasing the good will that comes with that name. To this end, a CVI advisory council has been set up to liaise with information departments of the various business areas as well as with representatives of Corporate Relations, the Legal Department and Market Coordination. The council comes directly under the aegis of the Chief Executive Officer.

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French PTT Chooses Ericsson and Matra

Matra and Ericsson have been chosen by France Telecom, the French PTT, to supply the new pan-European mobile telephone system in France. This is the second system choice in Europe, since the U.K. earlier this year chose Ericsson, together with Orbitel and Matra, as supplier for part of its system.

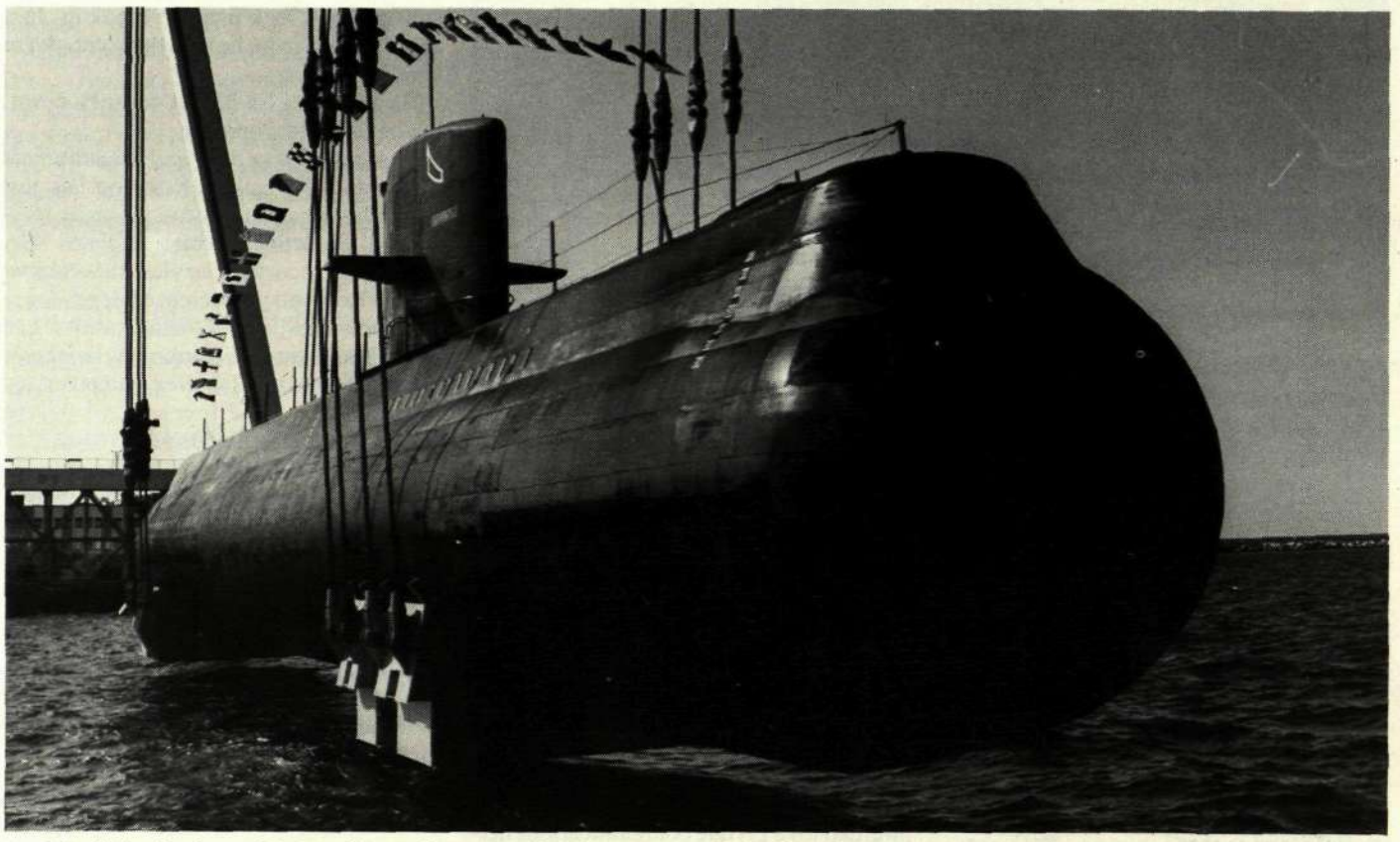
The French Telecom has chosen Matra Communication and Matra Ericsson Telecommunications (MET) to supply the new mobile telephone system for France. The system, which will be taken into service in the beginning of the 1990s, will first be introduced in Paris with an initial capacity of 10,000 subscribers. Paris, with its size and dense population, presents similar challenges as London, which today has the highest number of mobile subscribers of any city in the world. One of London's two systems has been delivered by Ericsson to Racal Vodaphone, who in July this year chose Ericsson, Orbitel and Matra for their new digital system.

Jean-Luc Lagardere, Managing Director of Matra, says: "This choice, following the previous choice by Racal/Orbitel, confirms the position of Matra Communication, associated with Ericsson and allied with Telettra, on one of the biggest European markets during the next decade".

Björn Svedberg, President and Chief Executive Officer, Ericsson: "In mobile telephony, this is the second successful result of the fruitful cooperation between Ericsson and Matra, now in France and earlier this year in the United Kingdom. It confirms our strong commitment to the French market and the position of our AXE system in France."

Australian Sub Picks Security System

Having supplied communications systems to more than 10,000 ships, Ericsson is ranked as one of the foremost suppliers today, with about 20 percent of the marine market. Marine Communications Systems are supplied by the Marine Department of Ericsson Network Engineering AB, headquarters in Gothenburg, Sweden.



A sub built by Kockums Marine shipyard outside of Malmö gets ready for launching.

When Kockums received its submarine order from the Australian defense authorities, it was only natural that security systems had to be taken a step further. As a frontline Pacific defense force the Australian military puts great store in state-of-the-art naval technology.

Indeed, Kockums is already used to meeting the rigid demands for security systems set by the Swedish naval authorities. The Australian order, then, was seen not only as a challenge — which Kockums satisfied admirably — but also as a means of generating business for Kockums beyond Scandinavian shores.

"The Australian order entails a close cooperation with the Royal Australian Navy (RAN) and the Australian Submarine Corporation (ASC)," says Folke Sonesson, Kockums security chief. "At the moment, there are some 20 personnel from each organization working at Kockums Marine. The joint operation is working fine. I am in daily contact with the security staff and we have open discussions."

Sonesson sees this as a long-term project, which he sees stretching into the nineties.

Speaking of submarine security itself and the choice of technology to guarantee it, Kockums wastes no time in defining its choice. "We chose Ericsson as supplier after comparing it with a number of other systems," explains Björn Widell, head of the Australian project at Kockums. "Ericsson met the specifications we stipulated. Moreover, added to the competence and technical superiority we were getting, there was the very high standard of service. We also valued the fact that Ericsson could take total responsibility for supplying the entire system."

Kockums has long connections with Ericsson. Already, in 1937, it delivered the first local telephone exchange.

Emphasizing the importance of servicing, Widell insists that it must be of the highest caliber. He points to Ericsson's service workshop on Kockums' turf in Malmö, where service and installation personnel are within easy reach.

He notes, too, that prompt and efficient servicing was one of the deciding factors in winning the Australian order.

Some examples of installations from our reference list for passenger ships

One or several systems have been delivered, such as: Telephone, Public Address, Paging, Fire Detecting, Radio and Computer.

Canada
- Blue Nose. OWNER: Marine Atlantic.

Denmark
- Tor Britannia, Tor Scandinavia. OWNER: DFDS-Seaways.

England
- Queen Elisabeth II. Owner: Cunard.
- Norsun. OWNER: Nedlloyd North Sea Ferries.
- Norsea. OWNER: P&O Ferries, North Sea Ferries.
- Sea Princess, Royal Princess. OWNER: P&O Cruises.
- Bison, Buffalo, Panter, Tiger. OWNER: P&O Ferries.
- Darnea, St. Nicholas. OWNER: Sea Link.
- Free Enterprise I, Free Enterprise II, Free Enterprise III, Free Enterprise IV, Free Enterprise V, Free Enterprise VI, Free Enterprise VII, Free Enterprise VIII, European Gateway, European Trader, European Enterprise, European Clearway. OWNER: Townsend Thorenson.

Finland
- Viking Sally. OWNER: Rederi AB Sally Viking Line.
- Amorella, New building, Mariella. OWNER: SF Line, Viking Line.

France
- Korsika Viva IV. OWNER: Korsika Ferry.
- Versailles. OWNER: SNCF.

Greece
- Danea, Daphne. OWNER: Delian Cruise Lines.

Ireland
- St. Killian. OWNER: Irish Continental.

Norway
- Americana. OWNER: Ivarans Rederi.
- Peter Vessel. OWNER: Larvik Fredrikshamns Linjen.

Sweden
- Gotland, Visby. OWNER: Gotlands Bolaget.
- Scotia Prinze. OWNER: Marine Trading.
- Trelleborg, Skåne, Drottningen, Öresund. OWNER: National Railways.
- Hamlet, Ofelia. OWNER: SFS-Line.
- Kronprinsessan Victoria, Stena Danica, Stena Germanica, Stena Jutlantica, Stena Scandinavia. OWNER: Stena Line AB.

U.S.A.
- Ocean Islander, Ocean Celebration, Ocean Crest, Ocean Jubilee, Ocean Princess. OWNER: Carnival Cruise.
- Sun Viking. OWNER: Royal Caribbean.

Viking Line's Amorella in Stockholm on its maiden voyage.

Equipment For Amorella

Thursday, October 13, was the first commercial voyage of Viking Line's new cruise ship, Amorella, covering the route between Turku in Finland, and Stockholm. A sister ship, also 170 meters long, will join the Amorella on the same route in 1990. Both vessels will have Ericsson communications systems.

The Amorella's Ericsson Marine telephone exchange is the master coordinator of the 400-line system for internal phone traffic and controls more than 1,000 lines in all. Twenty lines are for external land connections. Another ten lines are supplied with equipment that links the ship's phone system to the Nordic Mobile Telephone (NMT) network.

A total of 565 passenger cabins feature Ericsson-designed panels for controlling room functions, services, entertainment program selection, time indication, wake-up alarms and telephony. Other Ericsson-supplied installations include internal phone systems for service areas, elevators and talkback, watchman alarm system, hospital phones, public address integrated with the telephone exchange, Contactor 9000 personal paging system, time distribution and the lighting and sound systems for Amorella's disco.

The Amorella's sister ship will be equipped with identical systems.

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Box 32073
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Sweden

Editor-in-Chief:
A. Michele Schmidt
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