
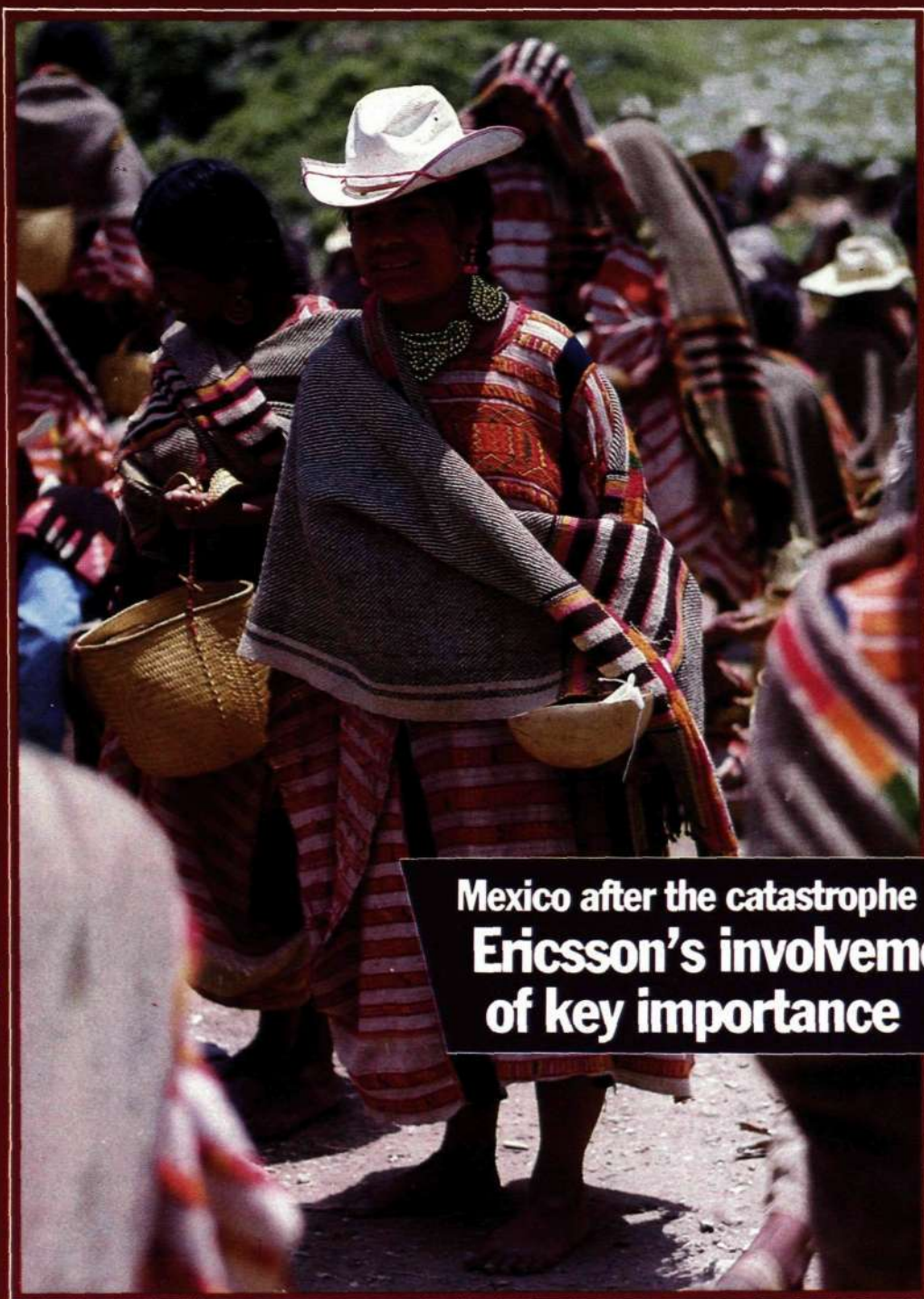


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Contact

ERICSSON 



1985 financial
accounts:

**Financial
awareness
growing among
Ericsson staff**

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Ericsson's true
home market**

**Mexico after the catastrophe
Ericsson's involvement
of key importance**

T Ericsson corporate export policy

he regulation of high technology exports has become a hot issue in Sweden of late. The papers have been filled with articles about the "Datasaab and container" affairs and about any Asea involvement in the sale of a couple of computers to the Soviet Union.

If Sweden is to be used as a waystation for the transfer of western technology to the east, we could run into a problem in obtaining state-of-the-art foreign technology ourselves. As a consequence, the government has found it necessary to prohibit the transfer of foreign technology without a re-export licence from the country of origin.

Nevertheless, the question has been raised as to whether Sweden should go along with a technological boycott of the east by other countries. We are, after all a non-allied country and as such we should not do the bidding of other countries in the so called ideological and political battle between east and west. You may well have your own opinions on this point, but as Sweden's biggest importer of embargo-listed components, Ericsson has basically only one alternative: We must ensure that we have ample access to the technology that we need for our production and development. We can do this because we are an attractive enough technology partner, which means that we ourselves have technology to offer, and also because we adhere to the rules that other countries impose for us to be able to use their processes and products. What this essentially means is that we must generate trust among our technology suppliers for the way in which we handle our export controls. *The vendor country cannot have the tiniest reason to doubt that we are as trustworthy a recipient of their technology as their own companies. In fact we should even be better on that point than the domestic companies because Sweden does not belong to, and cannot belong to those groupings of countries with joint political aims, both in terms of technology and military defence (such as the Cocom group, mainly NATO countries).*

We have devised an export regulation policy at Ericsson which sets down how we in a proper and trust-inducing manner are to handle regulation of exports. We have also appointed people to be responsible for these questions in each business area and throughout the organization in Sweden and other countries.

We have also obtained an exceptionally comprehensive distribution licence from the United States and signed special agreements and established contacts with our key customer countries enabling us to secure export licences to cover a major portion of our exports.

Wherever individual export licences are required we have begun working with government authorities and consultants in those countries that issue the licences. This ensures that our applications undergo the fastest possible processing. Nevertheless, in many cases it does take time to obtain licences and so we have to remember that it takes just as long for our competitors.

One of the key factors in our export controls policy is naturally knowledge and information. In recent years we have conducted extensive training of those people directly involved in these matters and will be augmenting it with further information. If we handle it properly, we can turn this problem into a plus, ultimately boosting the competitive strength of the corporation.



Magnus Lemmel
Senior Vice President Corporate Market Coordination

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Ericsson's export regulations laid down

Ever since the Soviet Union marched into Afganistan a few years ago, we have grown accustomed to American suppliers and authorities imposing stringent requirements on the export of products incorporating American technology. By doing so Americans have hoped to exert pressure not only on the Soviet Union but also on other countries. This obliges us at Ericsson to maintain a smoothly-operating export organization. Nowadays, you would be hard put to find a product that did not contain some form of American technology. We are heavily dependent on components from the United States.

For years we have had people at Ericsson specially appointed to deal with matters relating to exports. With a network of staff involved in purchasing, marketing, shipping and technology, we make sure that Ericsson never makes a mistake. What's more, we have a set of rules set down by the corporate executive last autumn stipulating policies for Ericsson's export operations.

Licences — a convoluted chapter

All exports of American products or technology must be done under licence. However, products not subject to control can be exported from the United States, under what is known as a General Licence for which no application needs to be made. There is an extensive list of the kinds of licences needed set down in the American exporters bible, the EAR, which stands for Export Administration Regulations.

Exports and, in principle, also re-exports not covered by general licence require some form of individual or multiple licence from the Ministry of Trade (OEA). It is up to the exporter, and the re-exporter, to decide whether

to apply for a licence. And he better be certain he acts properly!

Naturally, you can consult with the OEA but getting an answer can be a frustratingly long wait. As a result, large-scale exporters turn to their own people or engage the services of outside technical and legal experts.

Of the multiple licences available, what is called a Distribution Licence is the most common. The licence can only be held by an American company and this company then exports to a number of 'Foreign Consignees' in other countries who have been appro-

Ericsson's export controls policy

- Rules apply to all Ericsson employees.
- Products may only be exported in compliance with the regulations for export control as set down by each respective country.
- Employees may not engage in activities that contravene Swedish or foreign export control regulations.
- All concerned employees must possess the necessary knowledge of applicable Swedish and foreign export control regulations.
- Each employee is liable to consult with his superior when in any doubt.
- Managers for concerned units are responsible for working out procedures and setting up training.

ved by the OEA. These consignees in turn sell the products under a distribution licence and then within a sales district that has also gained approval.

Ericsson Corporation in New York (TEC) has an American distribution licence with about 50 Ericsson companies including the parent company LM Ericsson, as 'Foreign Consignees'.

Some of the larger subsidiaries such as Ericsson Information Systems and Ericsson Radio Systems also have consignee status according to several distribution licences held by other American licence holders than TEC.

So, we can conclude that the majority of Ericsson products are exported under what is known as a general licence or via a variety of distribution licences. For a smaller portion we must apply for an 'Individual Validated Li-



Magnus Lemmel, in charge of corporate export control matters.

cence' and that's in the case of some Eastern bloc countries as well as certain "grey-zone" countries such as Libya, Iran and Iraq.

Program for internal controls

Last year a new American act was introduced governing distribution licences. This act stipulates that the licence holder and foreign consignees must instigate an official programme for internal control to ensure that the constraints of the distribution licences are strictly observed.

The main points of the programme are to check that:

- the restrictions stipulated in the licence are observed,
- no deliveries are made to blacklisted companies or people (OEA issues regular lists),
- no deliveries are made to questionable companies or people.

The official controls procedures are to be performed upon receiving orders and upon delivering the material. And for practical reasons marketing bodies are also included.

The internal controls programme stipulates that documentation be duly safeguarded, training be conducted and internal checks of export controls performed. ■

Ericsson — Sweden's most "European" corporation

"Breakthrough in China." "Huge orders from Malaysia, Mexico and South Korea." "Major drive in the United States." That's the picture that emerges of Ericsson, of a company operating all over the globe. But all these worldwide headlines belie the fact that Ericsson is one of Sweden's most "European" corporations with sales of almost SEK 12 billion in western Europe, outside of Sweden. The orders brought in by our 20 000 or so "European" staff members at 50 or so subsidiaries are not usually enormous high-profile contracts. They're generally of the more mundane variety along with a few lucrative projects on a market with tremendous future potential.

"Eurosclerosis" — Europe as the ailing member of the world economy — is a theme that has become popular in newspapers and magazines throughout the world for the past couple of years. The usual message has been that Europe has fallen behind in technical developments, that the future lies in the United States, Japan and South East Asia.

In the case of Ericsson though, the situation has not been quite the same. Last year, sales in Europe rose much faster than overall sales for the rest of the corporation — about 18% as opposed to 11% with market shares growing on several markets.

Demand for Ericsson's products is rising rapidly in Europe and with the enormous telecommunications monopolies starting to deregulate and reassess their strategies, the telecommunications and data markets have entered a very interesting phase of development. Competition is mounting and more and more actors are being allowed onto the markets.

Developments have progressed far-

thest in England. The telecommunications monopoly has been privatized and the major continental countries have been eyeing events there and seeking new solutions along the same lines. Development projects are in progress within the EEC, the European Economic Community consisting of 12 European countries, to come up with future telecommunications and data systems as well as joint standards for these systems. If the EEC manages to do this, it will have a major impact on the future of telecommunications all over the world.

In short, Ericsson's markets in Europe are very dynamic indeed. Governments are plowing substantial funds into the development of communications systems as a way of rejuvenating the somewhat time-worn European economy.

"If any area in the world could be called a domestic market for Ericsson, it is Europe. No more than ten years after Lars Magnus Ericsson founded this company in Stockholm in 1876, Ericsson products were in operation in several European countries."

Europe — a domestic market

"If any area in the world could be called a domestic market for Ericsson, it is Europe. No more than ten years after Lars Magnus Ericsson founded this company in Stockholm in 1876, Ericsson products were in operation in several European countries."

As the telephone spread throughout the world at the beginning of the century, Ericsson did too and in many countries it wasn't unusual for Ericsson to actually be the telephone administration. For instance, up until 1932 Ericsson ran both the local telephone companies in Finland and the companies handling interurban and international telephone traffic.

In other words Ericsson's European roots can be traced almost 100 years back in time. So the company can boast an unmatched bank of experience

in dealings with customers. Indeed, some customers (read: countries) hardly regard Ericsson as a foreign company at all.

Today Ericsson has about 50 companies operating in Europe outside Sweden, many of them in manufacturing but most of them in sales. Sales in western Europe beyond Sweden's borders in 1985 rose to SEK 12 billion.

Italy biggest

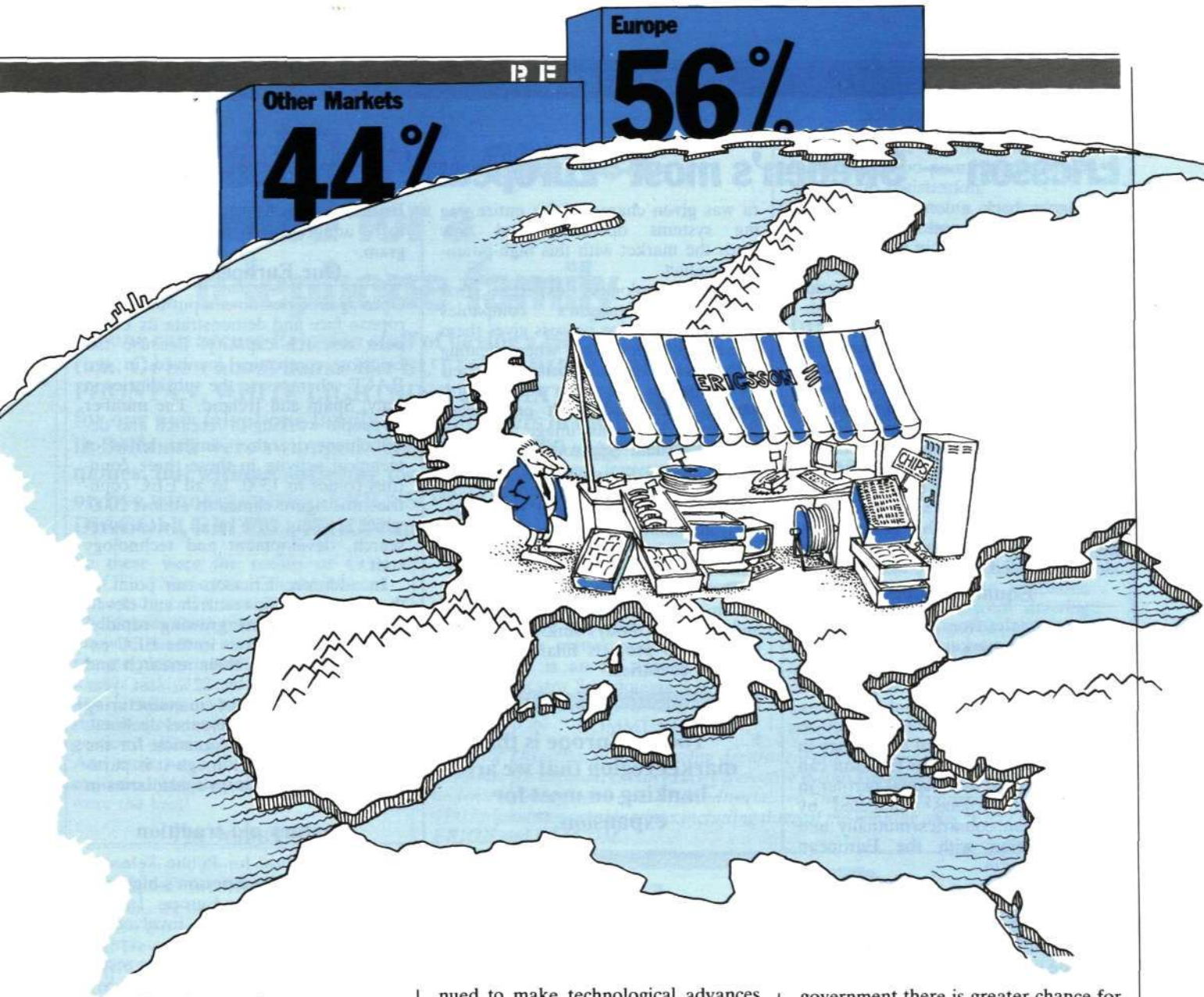
Ericsson's biggest European market is Italy. Ericsson began selling its equipment on a large scale in Italy way back in 1924 and also operated the telephone administration for southern Italy right through until 1957. Today the biggest Ericsson company there is Fatme (there are 16 Ericsson companies in operation throughout the country), whose share of the market is almost 20% of all deliveries to the public telephone network. Ericsson is the largest employer and industry in the Rome area and employs about 10 000 people throughout Italy.

Second in sales after Italy's SEK 3 billion is Great Britain with SEK 1.5 billion. Ericsson has been operating on a larger scale in the United Kingdom since 1974 when the company entered into a joint venture together with Thorn EMI, the electronics giant. Ericsson's share of the joint venture company is 49%.

Privatization

Great Britain is an excellent example of the kind of long-term nurturing needed for marketing work in Europe. For years Ericsson has enjoyed reasonable sales there but has never had an impressive market share. But the Thatcher government's decision to privatize the telecommunications monopoly, changed the situation in one fell swoop.

In fierce battle with all the major international telecommunications corporations, the AXE system came out on top after undergoing stringent evaluation. The contract is worth a billion kronor and will give Ericsson 20% of the market up until 1988. The chances of getting further orders after that and maybe even a larger share of the market are good. With this breakthrough, sales in Great Britain are rising quickly and last year climbed by more than 70%.



Persistence key trait

A long term approach is thus crucial for success and Ericsson's 100-year history of operations on a number of European markets gives the company an image of trustworthiness in the eyes of the customers. So we have to persevere, especially on those markets where for one reason or another we cannot boast very impressive shares today. One example of this is France. Back in 1909 Ericsson installed a telephone exchange for 6300 lines in Paris. Two years later Ericsson had set up a company there, STE, Soci et e France, Ericsson, along with a manufacturing unit. In the 1950s the French subsidiary developed an electromechanical system that was so successful it captured an amazing 60% of the government telephone administration market.

STE grew at a healthy pace and by the 1960s had expanded to 10000 employees and was listed on the stock exchange. But in the 1970s the French government indicated that they wanted more control over developments in telecommunications. As a result Thomson-CSF (now partly merged with AL-CATEL), picked up a major shareholding in STE. However, Ericsson conti-

nued to make technological advances with large orders for the AXE system and today we have installed 900 000 lines in France. Nevertheless, the French government's policy of nationalization compelled Ericsson to hand over ownership in the late 1970s to a government-owned Thomson-CSF corporation.

“With this breakthrough, sales in Great Britain are rising quickly and last year climbed by more than 70%.”

As a result, in the 1980s our market in France has been fairly modest. Ericsson's operations are run through four different companies with almost 700 employees and sales in 1985 came to almost SEK 600 million.

New signals

But the strategy of persistence is still thriving. New signals are also generating hope for the future. With the new

government there is greater chance for deregulation and relaxation of the market. Ericsson is striving hard to stage a comeback in France.

Another market that has not satisfied our expectations entirely is Norway. In the early 1980s, the Norwegian government selected ITT to be the main contractor for digitalizing of the telephone network. But it is no secret that this American company has run into problems delivering on time, a situation which improves our chances of landing new orders.

Ericsson has also had a close working relationship as well as a major shareholding in the Norwegian company, Elektrisk Bureau, who with a large staff are involved in vital technological development for Norway. Ericsson's sales of NOK 950 million there make Norway the fifth largest market in Europe for the company.

Even though we are not involved on the public telephone market in West Germany, that country is still one of our largest markets with sales of roughly SEK 970 million.

Spain, an unknown

Another market with exciting potential for Ericsson is Spain. Here again the

Ericsson — Sweden's most "European" corporation

story goes back a long way starting with a subsidiary and manufacturing unit outside of Madrid in 1922. But government authorities closed down the market for other suppliers to the national telephone administration by handing over market monopoly to ITT. However, the situation changed in 1970, the monopoly being eliminated and our company, Intelsa (Ericsson 51%, telephone administration Telefonica 49%), quickly snapped up substantial shares of the market totalling roughly 30%. Ericsson sales in Spain in 1985 came to SEK 1 billion and the company has a staff of more than 2 200 people in Intelsa. The company is growing rapidly and in the last year alone expanded by more than 20%.

Equal partners

These examples from a few of the major European markets show the importance of long-term planning and persistence. But what is equally important is that Ericsson operate as if it were a domestic company and be prepared to help advance the level of technology in the country. That's when Ericsson can also be involved as an equal partner in development projects conducted by the European countries mutually and in cooperation with the European common market.

The corporation is involved in a host of activities aimed at strengthening the technological base of the subsidiaries throughout Europe. Many of them are handling certain segments of the development of our products. For instance, we have a "design centre" in Finland for development of the AXE system and adaptation of it to other markets. In addition, the Finns are in charge of development of centrex facilities (centralized PABXs), adapting it to markets in China, the UK, Morocco and the United States as well as for developing certain functions in the mobile telephone system.

Technological village

Another site of rapid development in research and development is Spain. Intelsa is one of several companies involved in operating a technological village outside of Madrid. Ericsson's technological centre was launched not long ago with 60 university engineers, to grow to 120 by 1988. One of the jobs of this centre is to train Spanish engineers on a contract basis for the Institute of Technology in Madrid. One development project underway is the development of measuring instruments for automatic transmission.

We have concentrated all development of paging systems to the continent. In 1981, Ericsson became part owners of the Dutch company Nira International and not long after assumed control of the entire company. Ni-

ra was given charge of the entire paging systems operation and now leads the market with this high-potential product.

The technological expertise that many of Ericsson's companies throughout Europe possess gives them considerable leverage when dealing with government authorities in their own countries and when working with various EEC bodies. It emphasizes Ericsson's European image and is a key reason that Ericsson has been involved in several research projects within the EEC. The European common market has up until now been fairly adamant in refusing to admit outsiders (in other words companies from non-member countries).

The reason for this is that the EEC Commission (the EEC's draft-making and executive body) sinks millions of kronor into projects financed by the member countries.

"Today, Europe is that market region that we are banking on most for expansion."

Expressways

At present Ericsson is involved in six different "RACE" projects. RACE is an acronym for "Research in Advanced Communications for Europe" and the aim of the project is to provide Europe with a broad-band network for telecommunications. This will be a kind of major expressway for telecommunications in the future and will be able to communicate voice, data and images much faster than what is done today. The EEC commission has given the go-ahead to 31 different projects worth a total of SEK 250 million in the initial study phase which is estimated to take about 18 months.

The work devoted to developing this kind of a network is so enormous that it requires the joint efforts of the European members. And being included in this is a major step forward for Ericsson. The projects could lead to the emergence of new standards and technical innovations that will gain widespread popularity. The United States and Japan both have the resources to propel developments on their own, but it is likely that the European innovations will gain greater acceptance throughout the world on other markets of interest to Ericsson.

In the information technology sector, Ericsson is also taking part in the EEC project ESPRIT (European Strategic Program for Research and Development in Information Technology).

Ericsson is the first Swedish company to be admitted into this research program.

Our European face

Once again Ericsson can put on its European face and demonstrate its European research capacity, because the Ericsson companies involved in the RACE schemes are the subsidiaries in Italy, Spain and Ireland. The number of people working in research and development or other similar kinds of technical activity in these three countries comes to 1300. In all EEC countries this figure climbs to almost 2000, which is about 20% of all Ericsson research, development and technology staff.

In addition, Ericsson can point to the fact that their research and development program is growing rapidly. Ericsson's subsidiaries in the EEC expanded the size of their research and engineering staffs by 22% last year while the number of manufacturing and administration personnel declined. And this reflects the situation for the entire corporation although it is particularly true of Ericsson subsidiaries in the EEC.

Century old tradition

It is only natural for Public Telecommunications to be Ericsson's high-profile representative in Europe. In fact, the company's European involvement in this sector can be traced a century back in time. However, in recent years, products from Information Systems have also made Europe their biggest market. For the Public Telecommunications business area, Europe outside of Sweden accounts for about 35% of their sales while for Information Systems this figure soars to more than 50%.

The MD 110 and PC

Information Systems' major products have their biggest markets on this side of the Atlantic. The MD 110 PABX is the No. 1 PABX in Scandinavia and has captured large market shares in England, Italy, Holland, Spain and other countries. Ericsson's smaller PABXs have taken the lead in Finland, Belgium and Spain while the Alfaskop workplace terminal is the second most popular terminal in Europe after IBM. Ericsson's personal computer has made a meteoric rise to become one of the top names on several markets.

To sum up, for more than a century we have been firmly established on the European markets with our entire product range. The corporation has seen two world wars go by but has always stuck to its long-term approach. Today, Europe is that market region which we are banking on most for expansion. ■

Almost 50 000 names suggested for a new telephone family

No one can accuse Ericsson staff of having a lack of imagination. Or how about names like BUTTON ERIK, LURIFAX, PHONTÄN, WHITE LIGHTNING and DIAVINK as names for our new telephone family? The members of the jury at EIS in Bollmora were swamped with almost 50 000 suggestions for names, but without suffering too greatly they managed to agree on five winning entries: ERICSSON COMMUNICATOR, DIACOM, ERITEL, ERION and ET 2000.

So these were the results of CONTACT's "Name the Telephone" contest announced in issue No. 4 last year. The entries came primarily from Scandinavia, but they also came from more remote places including Australia, Colombia, Italy, Mexico, Oman, Taiwan and Uruguay. And not many people remained contented with only one suggestion, offering several alternatives. And there were quite a few who even explained why they thought their ideas were the best!

The winners

Several entries contained the five winning names. In order to be fair to everyone, we decided to draw lots and here are the final winners:

- Ulf Davidsson, ERA in Mölndal for ERICSSON COMMUNICATOR.
- Gösta Graham, ETX in Marievik for DIACOM.
- Ture Lundström, S-Division within ENS for ERITEL.
- Pia Ölander, EDS (HF-Exchange) for ERION.
- Juri Vajdaffy, EIS in Bollmora for ET 2000. All winners were awarded a DIAVOX loudspeaker telephone.

Honorary mentions along with a gift go to:

- Heidi Jonasson, 10 years old for her suggestion DIAFON. A combination of a well known ERICOFON and DIAVOX.
- Per-Olof Thyselius, who is involved in licence-related matters in Stockholm for his 47 913 suggestions! which he worked out through his computer program, managing to come up with three of the winning entries, ERITEL, ERION and DIACOM.
- Totte and Brita Edeborg from Honeywell Ericsson Development in Anaheim, USA for their DIGIPHONE suggestion for regular phones and DIGIVOX for loudspeaker telephones.

Brand name protection

It's important to have the five names

protected as quickly as possible by registering them with the National Swedish Patent Office.

Our patent department has looked into the matter and discovered that there is an ad agency called Communicator Scandinavia AB so it wouldn't be such a great idea to have ERICSSON COMMUNICATOR

protected. The Patent Office would in all likelihood point this out as an obstacle to registration.

Since we cannot get exclusive rights to alphanumeric combinations, ET 2000 is not a good idea as a trade name according to our patents department.

However, they think that both DIACOM and ERITEL are good brand names holding the former to be the strongest candidate. Both are registered for us, DIACOM since 1978.

ERION is both short and easy to say in other languages too. Most of the "ERI" registrations are ours.

*

The September issue of CONTACT will contain a more extensive report on the complete telephone project describing it from drawing board to CAD designs to production in Kristianstad and Karlskrona. And by that time hopefully the EIS people will have decided which of the five names they will give to the new telephone family.

Per-Olof Thyselius, of the licencing department at LMEricsson, turned to his computer for assistance. Not exactly a creative method according to the jury but undeniably an efficient one. This industrialized "name creating operation" yielded 47913 alphabetic combinations including three of the winning ones, ERITEL, ERION and DIACOM.



Financial info natural ingredient in the future

The latest issues of Contact have been chock-full of financial reports and information. The ball started rolling in the second issue of Contact this year, which included our preliminary financial accounts. The Economy Special delved a little deeper into the accounts and in this issue, we are taking a look at the final statements for 1985.

We have concentrated heavily on financial information in the past year. This is the result of a determined effort from our senior management. It's crucial for as many of our staff as possible to receive accurate and fast information about the state of our economy. As long as we all know more, we will understand why things happen and realize how important it is for everyone to work together to achieve better results in future.

Contact will continue to focus on providing understandable financial and economic information for all Ericsson staff members. We will consistently supply descriptions of various sections of our financial world and how the different parts of a company's economy fit together. The better informed our staff members are, the more fun it will be for them to work and watch the fruits of our work show up in improved earnings.

What we are trying to do is make financial and economic information a natural element in each staff member's workday. In future extra issues of Contact that come out in con-

junction with year-end financial accounts and interim reports will not come as a surprise.

What we have written so far this year in Contact is now history. It relates to 1985. We have already marched four months into 1986 and in two months our economic experts will be painting a picture of operations for the first six months of 1986. By August, we will be able to see whether our forecasts have been accurate and during September all staffers will receive a new issue of a magazine dealing solely with finances — a magazine that concerns all of us.



The Balance sheet 1985

The balance sheet tells us Ericsson's assets and liabilities as of the end of December 1985. The balance sheet gives a picture of the situation on that particular day but in order to gain a more accurate picture you have to follow developments over a longer period of time. Nevertheless, the fact remains that the rest of the world judges us on our situation on New Year's Eve.

Balance Sheet in SEK million	1985	1984
Assets		
Cash, bank deposits and other liquid funds	3069	3833
Accounts receivable	10616	10912
Inventories	10464	9690
Other current assets	2211	2733
Restricted reserves	313	82
Long-term assets	2900	3238
Property, plant and equipment	7549	7144
Total assets	37122	37632
Liabilities and shareholder equity		
Accounts payable	2435	2813
Advance payments from customers	2278	2296
Other current liabilities	11 619	12 192
Long-term debts	8565	7658
Untaxed reserves	4794	5030
Shareholders' equity including minority interest	7431	7643
Total liabilities and shareholders' equity	37122	37632

Cash, bank deposits and other liquids funds in SEK million	1985	1984
	3069	3833

This is money that we have in cash, in other words money that we can use immediately. This total shrank by SEK 800 million in 1985.

Money costs lots of money

Accounts receivable in SEK million	1985	1984
	10616	10912

This is money owed to us for goods that we have already delivered. We do not have this money at our disposal. According to our calculations, in 1985 Ericsson had an average credit term of 119 days as compared to 133 days in 1984. In other words, we are moving in the right direction. It is crucially important for us to learn how to bring in money as fast as possible. This can add to our earnings by SEK 10 million a day. If we can drive our payment time down in 1986 by 30 days, we will boost our earnings by SEK 300 million!

	1985	1984
Inventory	10464	9690

We are not very efficient within Ericsson at moving our products out quickly. Our average inventory time is seven months. Having an item in stock for 217 days is far too long. In the same way that we tie up money by not getting paid for products that we have delivered, we are also tying up money by manufacturing products but not getting paid for them. We have high production costs but no revenues then. If we can lower stock times by 30 days in 1986, we will increase our earnings by SEK 580 million!

If we at Ericsson could reduce our inventories and bring in customer receivables faster, we would boost our annual earnings by SEK 40 million.

Long-term assets in SEK million	1985	1984
Property, plant and equipment in SEK million	2900	3238
	7549	7144

Long-term assets are, like property, plant and equipment and so on, assets which have a value in money but which it is impossible to gain possession of overnight. If you need money fast you do not start off by trying to sell a factory. What's more, we need property, plants and equipment in order to produce the goods.

Are we too efficient at paying our debts?

Accounts payable in SEK million	1985	1984
	2435	2813

At the top of the list of liabilities is that which must be paid first — accounts payable. This item declined in 1985 but that is not very good. We are far too efficient at paying those companies who supply goods to us while we are inefficient at bringing in money ourselves. We must, of course, try to achieve a better balance between accounts receivable and accounts payable.

Advance payments from customers	1985	1984
	2278	2296

Naturally, it would be ideal if we could receive advance payments from customers, because then we would be getting paid before we deliver anything. And the money that we do get in advance can be used for earning more money.

Other short-term liabilities in SEK million	1985	1984
Long-term debt in SEK million	11619	12192
	8565	7658

These entries have to do with various types of loans and, for example, pension commitments. Short-term liabilities are debts that must be paid within one year, while long-term debt is paid over a longer period of time.

The Balance sheet 1985

	1985	1984
Untaxed reserves	4794	5030

This amount pertains to the allocations that we find in the income statement. We do not need to pay tax on this money.

	1985	1984
Shareholders' equity including minority interests in SEK million	7431	7643

Shareholders' equity is money that Ericsson's owners have invested and profits that the owners have left in the company.

	1985	1984
Total liabilities in shareholders' equity in SEK million	37122	37632

If you divide equity capital by the sum of the liabilities and equity capital, you arrive at the equity ratio. Our equity ratio dropped slightly in 1985 from 27% to 26.6%. We would like to have a little higher equity ratio because it would leave us in a better position to cope with any setbacks in the future. A low equity ratio forces you to borrow money from the bank if you run into problems, and if that happens too often then your borrowing terms deteriorate and eventually it is not certain that the banks will even put up the money.

Source and application of funds statement 1985

Ericsson must continue reducing the outflow of money in 1986 or our credibility and our credit rating will eventually fall into disrepute. This is one of the conclusions that you can draw from the source and application of funds statement. It is obvious that too much money has poured out of the company too fast. When large sums of money flow out of the company, in other words when you have a negative cash flow, you must seal up the holes with loans or new money from lenders. Soon we won't be afforded that opportunity — we have to solve the problems ourselves.

	1985	1984
Funds supplied from operations in SEK million	1230	2065
Conversion differences in SEK million	- 147	23
Gain on sale of plant, property and equipment in SEK million	879	361
	<u>1962</u>	<u>2449</u>

The sum of SEK 1962 million is money generated by our various operations during the year. This is money that has come into the company as a result of what we have manufactured or sold during the year.

	1985	1984
Accounts receivable	297	-2302
Inventory	- 774	-2231
Other current assets	522	- 545
Current liabilities	- 472	1670
Changes in working capital	- 428	-3408

Our working capital has increased during the year by SEK 428 million. Increasing your assets is negative from a cash flow point of view, hence the minus sign before changes in working capital. The strong improvement over 1984 is gratifying but there is room for more improvement.

	1985	1984
Purchase of property, plant and equipment (capital investments)	-2677	-2192
Other long-term assets	628	- 202
Dividends paid	- 357	- 346
Total internal source and application of funds	- 994	-3699

	1985	1984
External financing	- 230	4506
Increase/decrease in cash	- 764	807

We have a negative figure for internal source and application of funds. We have quite simply used over SEK 4 billion more than what our operations have generated in both 1984 and 1985. We have a negative cash flow which means we must bring in money, from outside the corporation. Either you borrow the money or you induce investors to invest money in new shares.

Dangerous combination

As things stand today, it is very difficult if not impossible to generate money by issuing new shares. With healthy earnings and a sound equity ratio, you can accept negative cost flow. But Ericsson has a dangerous combination of poor income, poor equity ratio and negative cash flow in 1986. We cannot allow faith in Ericsson to drop to the point that our credit rating comes into question.

Source and application of funds statement (cash flow) in SEK million

	1985	1984
Funds supplied from operations	1230	2065
Conversion differences	- 147	23
Gain on sale of property, plant and equipment	879	361
Total source of funds	1962	2449
Accounts receivable	297	-2302
Inventory	- 774	-2231
Other current assets	522	- 545
Current liabilities	- 472	1670
Change in working capital	- 428	-3408
Purchase of property, plant and equipment	-2677	-2192
Other long-term assets	506	- 202
Dividends paid	- 357	- 346
Total source and application of funds	- 994	-3699
External financing	230	4506
Increase/decrease in cash	- 764	807

*Harry Johansson, Controller***We know of the problems and we've already made good progress**

The fact that 1985 was not a particularly good year for Ericsson cannot be much of a secret to any of our staff at this point. The special issue of *Contact* told everyone where we stand financially. In March, one of the financial accounts, the Income Statement, was published and it showed how high our earnings were. And in this issue of *Contact* we're adding two more financial accounts: The Balance Sheet and the Statement of Changes in Financial Position.

The balance sheet is an account of our liabilities and assets. The statement of financial changes says how the money comes into the company and how it leaves it again.

Looking at these we can see a number of definite problems:

- Our inventories are too large.
- Our accounts receivable are too high – in other words too many of our customers owe us too much money.
- We're not very good at getting customers to pay us quickly.
- And since we have such large inventories and high rates of customer receivables we have to borrow too much money to keep our everyday operations going.

This does not come as a surprise to Ericsson's corporate management – on the contrary. For more than a year we haven't talked about anything but the importance of a low level of tied-up capital. But it hasn't been until now that the problem has gained recognition throughout the company. Awareness of the problems is growing, people have started doing something about them and we've already seen some big steps in the right direction.

But how did Ericsson end up in this situation?

According to Harry Johansson, Ericsson's corporate controller, the problems started back in 1984, when EIS built up an overly large inventory of components.

"At that time everyone thought that one of our biggest dilemmas was going to be a shortage of components. We bought huge stores of components while the market for the products in which

those components were to fit collapsed. As a result, not only did we have a ton of money tied up in component inventories but we also ran into problems selling the final products – mainly personal computers," says Harry Johansson.

But EIS weren't the only ones suffering from severe inventory headaches. Public Telecommunications were facing the same situation. In their case they had built up tremendous stores of parts in order to be able to manufacture analogue transmission equipment and the United States accounted for half of the market. That market crumbled as well. Demand dissipated and they were left sitting with massive inventories they were unable to move.

"But that's history today. Work has been in progress for a long time to reduce inventories and cut down inventory times."

Today, the average inventory time for all Ericsson companies is 217 days. Is it really necessary to have such long storage times? Do components and finished products really have to lay in storage for more than 7 months on average? Is it reasonable for Ericsson to tie up as much as SEK 10 billion in inventories?

"No, obviously inventory times don't have to be as long as they are today. But we do need large inventories at Ericsson. The way our business is we have to be able to cope with our long-term commitments by having hefty inventories. What is considered a reasonable inventory time varies between our seven different areas of busi-

ness. But one thing is certain – they can be cut down and they must be cut down. This is a financial necessity," says Harry Johansson.

More than SEK 10 billion is tied up in inventories. You usually figure that costs for maintaining inventories come to 30% of the value of the inventory. If we can reduce our inventories by 10% we will thus be upping earnings by SEK 300 million. Ericsson also has more than SEK 10 billion tied up in customer receivables. Receivables are what is owed for goods that we have delivered but which we have not been paid for. Do they have to be this high?

"No, up until now we haven't been very successful in 'pulling in' the money. In 1985, we managed to squeeze payment times down by 14 days and this has had great importance. For every day we reduce credit times, we earn SEK 10 million in interest expenses. In other words we can directly boost earnings by SEK 300 million if we shorten payment times by one month.

When it comes to payment times and inventories, there are, however, a couple of things that everyone should be fully aware of. We cannot accomplish miracles over a short space of time.

"In our business there are many occasions when we must have high levels of inventory and long inventory times. Many of our customers are late payers, but we can't simply jettison them. They are crucial to us. One thing is certain though – everyone at Ericsson has a responsibility and by being on the alert we can all do our part," concludes Harry Johansson. ■

The financial message got through

More staff better informed about financial situation

Our information channels are beginning to work now. Ericsson staff all over Sweden now find out rapidly how the corporation is faring. Every three months an interim financial statement is put out and naturally once a year an annual report. Many people wait with anticipation for these statements and our information representatives are working intensively to ensure that everything runs smoothly.

The statements are released on Thursday afternoons after a meeting with the Board. Due to stock market regulations they may not be released before 3:00 p.m. As soon after 3:00 p.m. as possible they are issued. News agencies, newspapers, radio, television, banks, stock exchanges and the entire financial world snap them up in no time. And then they must be distributed as quickly as possible to the various Ericsson facilities throughout the world. But do Ericsson staff snap them up too, or do they toss them out instead? What do they think about them, if anything at all? *Contact* checked the situation in a few Ericsson towns in Sweden.

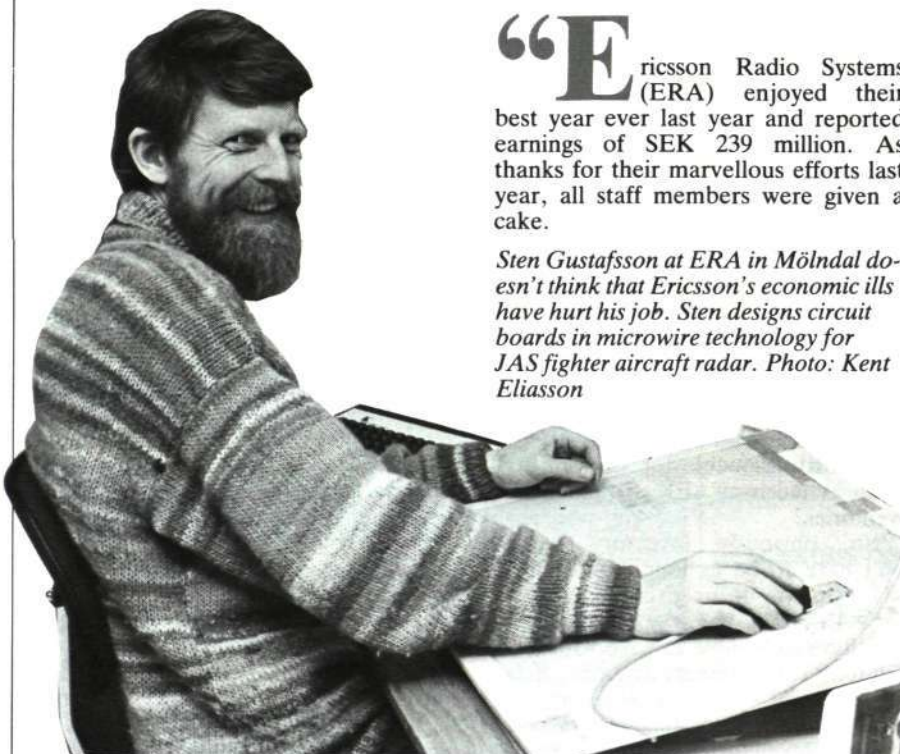
ERA Mölndal

Edible congratulations

Sten Gustafsson is a circuit board designer at ERA in Mölndal: "The information about our financial standing has been pretty good I think. It was a good idea for *Contact* to come out with a special issue dealing only with the financial accounts because otherwise the information is usually just buried in the ordinary papers and either takes up too much room or is too brief.

"Ericsson Radio Systems (ERA) enjoyed their best year ever last year and reported earnings of SEK 239 million. As thanks for their marvellous efforts last year, all staff members were given a cake.

Sten Gustafsson at ERA in Mölndal doesn't think that Ericsson's economic ills have hurt his job. Sten designs circuit boards in microwire technology for JAS fighter aircraft radar. Photo: Kent Eliasson



"It feels great that things are going well for ERA. The fact that the whole corporation is sagging a bit is because EIS is losing money and absorbing all the profits. Of course we also have to remember that Ericsson operates within a wide range of fields and it's impossible for every area to be running perfectly. Competition is fierce and technology is developing rapidly," says Sten.

He has worked as a circuit board designer in Mölndal since 1978. Right now he is working on a microwire card, the most recent development in circuit boards, which is intended to be used in radar systems for the JAS fighter plane. They are working under enormous pressure and the next few months will be critical. Sten and his colleagues feel that the job they are doing is important and that it's up to them to make sure that the work is done on time.

But the job has required enormous investments: CAD stations for computer-aided design, larger facilities and more staff. Sten says he hasn't noticed that Ericsson has run into financial problems:

"As far as I can see ERA has to make a pretty hefty investment anyway. A new plant is going to be built here (the plant for production of microelectronic components) so we haven't been hit by any kind of investment freeze. But I have heard that other parts of ERA have had to clamp down on expenditures."

The staff magazines, *ERA News* and *Contact* have provided Sten with most of the financial information. He thinks it's been fairly easy to understand, but he still hasn't been told anything by his immediate superiors.

Kristianstad

Preliminary statements took sting out of final one

Gunnar Holm is in charge of information at Kristianstad. This is how he describes the reaction down on the plant floor:

“When the financial results for the year were released, we distilled it down to A4 size and then we put it up on notice boards throughout the company. By that time the day shift had already left but the night shift had time to read it. But when everyone arrived for work early the next day the bulletins were up. And then it was also in the process of being distributed.

“I haven’t had any reactions or comments as to whether the way this was done was good or bad. And nobody has said anything about the subject matter. It didn’t arouse any interest at all in fact. This is probably mainly because the language was too sophisticated. It seemed as if it were written by and for economists. We just included the financial tables and the comments of the President in the sheet that we distributed.

“Another reason for the lack of interest was probably because the preliminary financial statements had taken the sting out of this one.

“For the information to gain any attention at all we have to include some kind of consequential analysis, in other words explaining what this means in tangible terms for us here in Kristianstad. And that’s not something we can do on such short notice.

“We have an information target group of about 17 people at management level. They’ve got orders to pass on any information they feel is important throughout the organization. Everyone sent out the statement the day after they received it but by that time the news had already hit the papers and television. But the economy special which came out a few days later was really a pleasant surprise. All the summaries were written so you could understand them. And that’s what we need. Not confusing economists language that no one feels like reading.”

Hudiksvall

Information about own units most important

Ruth Bengtsson, winder:

“I read about Ericsson’s poor profits in the paper and I saw that Cable had done well. Otherwise it’s pretty obvious that the corporation as a whole has done badly. There’s no denying that getting this financial information is interesting but it’s difficult at times and Ericsson is so big. But reading that things are good in the area where you work is encouraging of course!”

Lennart Sundman, forklift driver:

“No, I haven’t seen anything in the papers or on the notice boards about Ericsson profits, but I did hear them talking about it during the group committee meeting, the fact that we at Cable had done well and that feels good of course. I don’t think too much about the company’s economy myself. The main thing is that we don’t lose money so that we can keep our jobs.”

Söderhamn

Economy issue widely read

In Söderhamn, Rune Kjellberg had the practical job of distributing the information. He walked around the plant, listening to people, asking questions and found out the following:

“There was no interest on the plant floor. There may have been some interest in the offices. But the preliminary financial reports contained so much information beforehand that the year-end reports did not present any surprises. The fact that the writing was difficult is something we are accustomed to. I’d say it’s even been worse other times.”

Too much information

“Although the writing was heavy going and there was very little interest because of the interim reports, I still think



Ruth Bengtsson

Göran Myrsten, mechanical engineering shop:

“I don’t know how things have gone for Ericsson, but then again I haven’t really looked into it either. Although I do think that management doesn’t tell us enough down here on the shop floor. We’d like to know a little more but it’s tough to find out on your own. You don’t know where or how to begin.”

Kenneth Ronnedal, service warehouse:

“I read about Ericsson’s profit situation in *Contact* although I’m not that interested I have to admit. But relating the financial reports to things on our level makes it a little more interesting. Ericsson is a big company and it’s obvious that some units are going to do well while others are “allowed” to lose money – that’s part of the calculation. And even if earnings in 1985 were cut in half, the entire corporation is still making a profit at least.”

that this is the right thing to do. We should provide too much information. That way whoever is interested has the chance of picking up information a little ahead of time. And whoever is not interested can just ignore it if they want. One way of making it all a little more down to earth would be to throw in summarizing headings. The way it is now the text is very dry.

“But I thought the economy special that came out a little afterwards was good. I read it from cover to cover and I think a lot of other people did too. The writing was simple and straightforward and interesting as compared to the text in the financial report.”

Mexico, six months after the earthquake

Ericsson back on firm ground

Six months after the earthquake in Mexico City, Ericsson's demolished telecommunication stations are again standing on firm ground. The company has enhanced its reputation immeasurably thanks to its fast and forceful response to the catastrophe.

The future is looking bright with orders mounting, market position good and an excellent reputation for high technology. The problems have to do with Mexico's economy.

“Will the country's economy survive? Will they tighten up? Do they have money available to pay for developments? These are questions that we ask ourselves,” says Raimo Lindgren, President of Teleindustria Ericsson in Mexico City.

“Today, it is impossible to generate enough dollars for the country to be able to both pay off their loans and pay back interest on foreign debt,” he continues. Since Mexico has relied far too heavily on its oil industry, there has been no chance for other forms of industry to develop. Now they have nothing else to fall back on. If severe austerity is called for, they will have to cut down on imports. This, in turn,

would be a blow to Ericsson because almost half of the company's products have to be imported.

“But we wouldn't be hurt during the first stage of an austerity program because imports are financed over the long term, seven years. But we could very well be hit in the second phase,” adds Raimo.

Top-priority sector

Mexico has a very low per capita number of telephones. There is an enormous need to expand the telephone

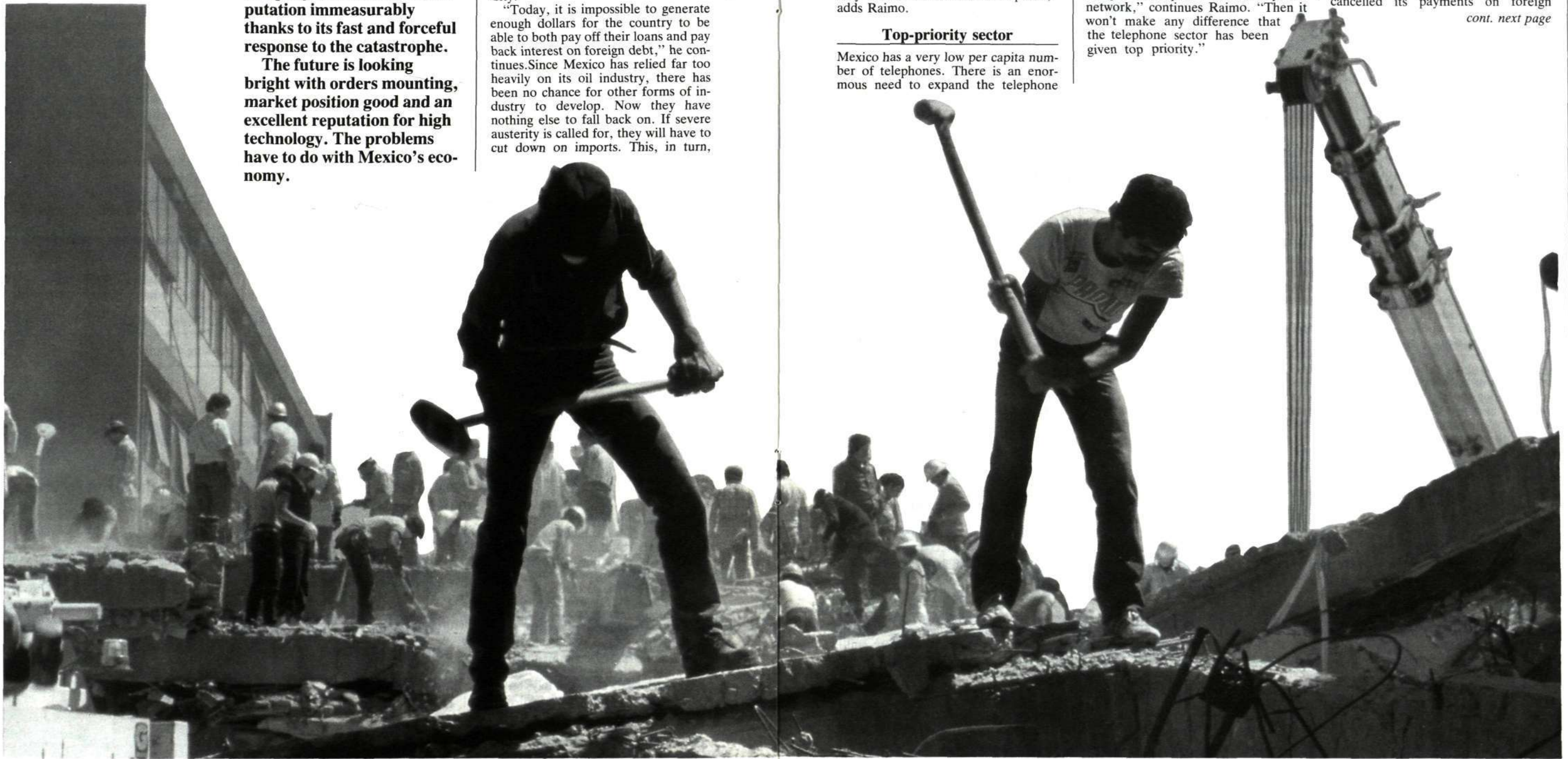
network, but with the country's economy as bleak as it is, expansion is difficult to finance.

“The telephone administration in Mexico is efficiently run and financially healthy but should the dollar-shortage situation become acute, it will hamper development of the telephone network,” continues Raimo. “Then it won't make any difference that the telephone sector has been given top priority.”

Bigger than ever

In the early 1980s, things were looking grim for Teleindustria Ericsson (TIM), our company in Mexico. It was at that time that the economic crisis was truly being felt throughout the country. The peso began sliding and the country cancelled its payments on foreign

cont. next page



Mexico

loans. The market situation deteriorated for Ericsson and volume growth was poor. As a result, the company was forced to lay off 1300 employees. But, assisted by the parent company and a Mexican investment plan, the company pulled through and today Ericsson is bigger than ever.

"The reason that we have grown is because we have stolen market shares from the competition here thanks mainly to our superior technology. Our biggest rival, ITT, also has a new telephone system, but it suffers from major defects. Basically, they launched their new product before it was ready," continues Raimo. "It still doesn't have a number of service and maintenance software programs, which makes it unmanageable and personnel-intensive.

With the increase in market shares, the company has also had to take on more staff. In the past two years 300 office workers and engineers as well as 400 plant staff have been employed and Ericsson today has regained its level of before the crisis.

Goodwill following earthquake

In order to present a full-rounded picture of Ericsson in Mexico today, we have to include the earthquake. A catastrophe that struck the city, the people and the telecommunications network. With telecommunications stations severely damaged and in some cases demolished entirely, the country was cut off from the rest of the world.

"It was a total disaster. Prices and contracts were put on hold. We put a short-term catastrophe plan into effect and launched a program of decentralization. This scheme was linked to our delivery capacity, so we could just go ahead with it," says Raimo Lindgren.

"Since 95% of the telephone stations in Mexico City were supplied by Ericsson, it was only natural that we lend a hand. We knew the network. At very least we had a moral responsibility to pitch in and help," he continues.

Of Ericsson's seven telecommunications centres, two were levelled to the ground. The other five were severely damaged but could be saved. Throughout the autumn, Ericsson was busy cleaning up. The work went on round the clock in three shifts which eventu-



"The goal of our operations in Mexico is for the products exported from here to attain the same high quality as the Ericsson products made in Sweden," says Raimo Lindgren, head of Ericsson in Mexico.

ally were cut down to two. Four times material had to be shipped over from Sweden by charter plane.

Three months after the catastrophe, two new AXE exchange centers were ready for operation.

Ericsson's fast response to the situation was praised by both politicians and the press alike. It has generated much goodwill for the company. And although it's tough to gauge the effect this has had, the fact of the matter is that Ericsson received 60% of the orders for the rescue plan and an amazing 70% of its switching orders for the 1987 delivery contract.

Exports from Mexico — Ericsson's future

From once having been a company that exported solely to Sweden, in future Ericsson in Mexico will be focusing on exporting to Central America and there is good reason to do so. The language is the same, deliveries would be fast and direct and it will be possible to offer service contracts too. But this is only one side of the export plans.

"The government has long harboured a wish to export products," says head of exporting for TIM, Luis Martínez Valencia. With the onset of the economic crisis and the fall in the price of oil, this desire intensified and there is now greater pressure on the company to balance its imports by exporting. And the admittance into GATT makes new demands on the company. Ericsson is already in the process of negotiating with a number of Central American countries including Guatemala, Ecuador, Panama and Costa Rica.

"Mexico is by tradition not an ex-

porting country, so we are low in experience in this area," says Luis Martínez Valencia. "But we are learning quickly thanks to assistance from the experienced staff from Sweden."

New technologies on the march

Ericsson in Mexico is in the throes of a major change. Conventional technology is giving way to digital electronics which means a cutback in the AXE sector to bring in the digital AXE system.

With the introduction of the new technology, Ericsson's training centre, CELE, has grown in importance. CELE, which stands for Centro de Entrenamiento Latinoamericano Ericsson, offers a wealth of courses and further training facilities. Fifteen teachers instruct not only Ericsson staff but also customers and staff from other Ericsson companies in Central and South America. In fact they have even had students enrolled from as far away as Pakistan and Korea. In order to face a future with an entirely new technology, you have to have qualified staff. For that reason CELE is unquestionably one of Ericsson's most important assets.

High quality with transfer of technology

Ericsson has been involved and working in Mexico for 80 years. In the beginning, we were one of two telephone operating companies. When these companies were amalgamated and nationalized in the 1950s, Ericsson switched over to become the country's main supplier of telecommunications components. Ericsson has supplied a sizeable portion of expertise and developed a transfer technology that has become a key to the Ericsson ideology in Mexico. An ideology based on regarding the company as an independent unit and helping it to develop and grow.

"We want Ericsson products in Mexico to be of the same high standard as their Swedish counterparts. So it is our responsibility to pass on our technological expertise and to boost quality throughout Mexico," says Raimo Lindgren.

Information systems on the rise

Information systems has concentrated a number of its operations over the past year. For instance they have become more market oriented, brought in a new range of products, eliminated some products, abandoned some markets and thoroughly restructured the organization.

Up until August of last year, all efforts were aimed at eliminating the problems they were having with product quality.

In future, all changes within Information Systems will be based on business principles and they are expecting to see a gradual rise in profitability.

In order to cure all the ills, they have introduced widespread changes in the following areas:

The products

Many of Information Systems products were of poor quality. The software programs suffered from myriad defects. This was also true of the hardware. Improvement of delivery times was given high priority, as late delivery was a common occurrence. All of this has now been rectified. But it cost a lot of money and all these measures led to the enormous losses for 1985.

Tied-up capital

Information System inventories were far too large and this of course caused high interest expenses. The reason for this was mainly poor administrative systems and inferior methods for doing forecasts. In addition, customers delayed payment because the goods they ordered arrived late or deliveries were incomplete.

The problems of a high level of tied-up capital have been corrected for the most part. Information Systems have placed top priority in 1986 on quality

1985 was a rough year for Information Systems. They suffered an enormous loss — SEK 800 million. And although this came as no surprise, it was still necessary to institute a number of measures to improve the situation. The basic scheme is now complete and earnings will now take an upturn.

and delivery precision. They now believe that the lofty goals they set for this year will be attained.

Quality control

Information Systems has improved quality control all the way down the line from arrival of the components until the finished products depart and are installed in customer facilities. Most employees are fully aware of how important high quality is. High quality of the products, deliveries and service will give us an edge over our competition.

The organization

There used to be an organization within Information Systems in which there was no clear responsibility for generating profits. Information Systems has for this reason been divided into three divisions, each division being a separate profit centre. Senior management in Information Systems are convinced that with this new organization they will be able to generate good earnings in 1986.

Personnel cutbacks

The staff at Information Systems will be reduced by 2 000 people by July 1 of this year. These cutbacks are necessary cost-saving measures. It will also be possible to expand the operations as planned with fewer staff members simply by working more efficiently.

Product range

Information Systems has come up with a new business concept which is based on simply concentrating on fewer products than before. As a result a number of "foreign" areas of operation have been let go, and these include:

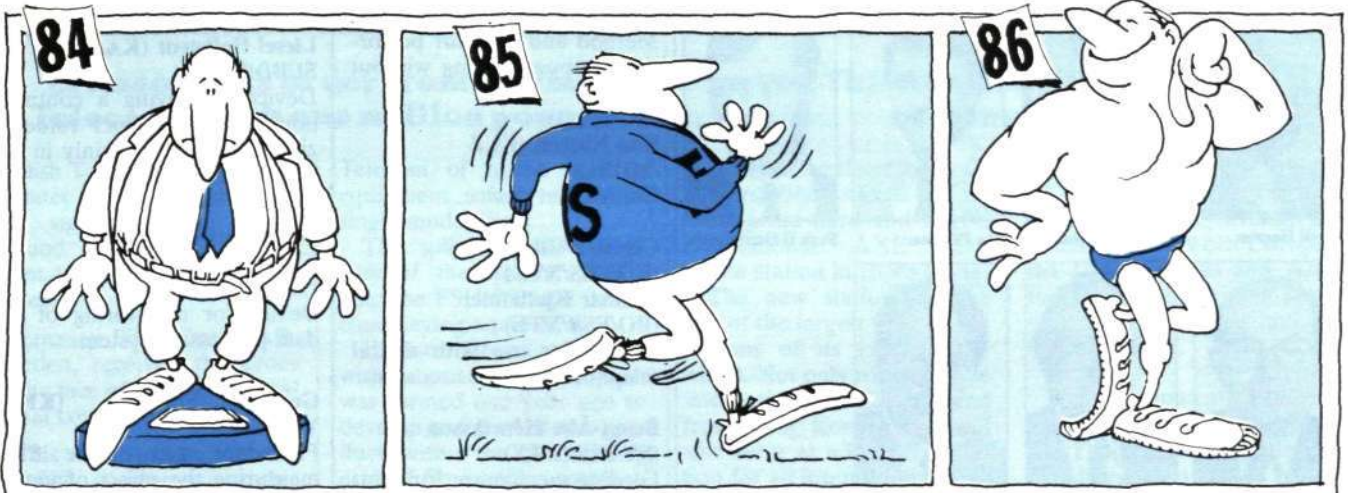
- Ericsson Security Systems
- Time systems
- Autotank
- ID cards
- The Sharp agencies in Sweden, Austria and Switzerland
- Furniture manufacturing

Cooperation

In the banking systems area, Information Systems has entered into negotiations with Digital Equipment for the purposes of working together on the product and development.

The markets

During the heavy loss years, Information Systems was involved on too many markets. This drove costs up too high and in the end led to an inefficient organization. In 1985 for example, Information Systems withdrew from a large number of markets for typewriters. In addition they halted the sale and marketing of personal computers in the United States and it was primarily this operation that was generating losses in 1985. In future, Information Systems will focus on large and medium-large customers, primarily in western Europe.



AXE station in China handles 800 000 calls an hour

In May, the AXE station in Guangzhou (previously known as Canton) will be equipped with the APZ 212 central processor. This will enable the station to handle an amazing 800 000 calls an hour. AXE sales in China are now approaching the 250 000

line level, most of them coming from Sweden. In addition to these computer-controlled digital telephone stations, we are also supplying the People's Republic of China with transmission and network equipment including fibreoptics systems. ■

Names in the news

- **Bert Jeppsson** is head of the development division of RIFA. This division has been recently formed for long-term development projects and is involved in process development, fundamental technology, CAD, design tools, opto-components and special projects as well as activities within the national microelectronics program.
- **Ronny Lejdemalm** is head of Rifa's new microelectronics division which is an amalgamation of the IC and the Hybrid divisions' business units.
- **Bertil Bogren** has been appointed president of Magnetic AB, a wholly-owned subsidiary of Ericsson Ra-

dio Systems (ERA) in Kista, Stockholm where Bertil worked as controller. Magnetic manufactures base stations for the Scandinavian mobile telephone network.

- **Per-Olof Nyberg**, who comes from IBM, has been named the new director of personnel at Ericsson Radio Systems. Åke Persson has been appointed director and Sven G Gustafsson chief engineer.

- **Jörgen Lind**, head of financial planning and control within BX, has been appointed a corporate director, as has Lars Wiklund, director of the personnel within Ericsson Telecom.

- A new chief engineer has been promoted: **Hans-Henrik Hamacher**, head of the electronics design department at Ericsson Telecom.



Bert Jeppsson



Ronny Lejdemalm



Bertil Bogren



Per-Olof Nyberg



Åke Persson



Sven G Gustafsson



Jörgen Lind



Lars Wiklund



Hans-Henrik Hamacher

Joint Swedish-American banking system venture

Ericsson has entered into negotiations with the Digital Equipment Corporation, the second largest maker of computer systems in the world, concerning a joint product and development venture in the banking system field. The deal would improve the market situation for both companies within the rapidly expanding banking system sector. Digital's special strength in the data processing, computer networking and office information systems area combined with Ericsson's vast experience and expertise in communications, workplace systems and bank applications will make a powerful combination.

"Our goal is to consolidate our position as a leading supplier of products, systems and services in the communications field. Working together with Digital will allow us to offer jointly developed banking systems on a larger geographical market," says Stig Larsson, President of Ericsson Information Systems.

Digital Equipment Corporation, headquartered in Maynard, Massachusetts, is the world's leading manufacturer of distributed computer systems, peripheral equipment and number one in systems integration with its systems and networking architecture. ■

New patents at Ericsson

This is a list of intrepid Ericsson inventors giving their names and places of work as well as a description of the invention. The list covers patents for this year up until March 7.

Ingemar Dahlqvist, (EUA/TLG)

Process for testing the function of a device for adaptive echo elimination.

Bengt Löfmark (XT/MKLC)

Capacitance filter of the second degree for development of a capacitance filter structure of a higher order.

Jerzy Skowronek (IK/VYC) Ola Persson (IK/VYLC)

Method and bath for performing copper plating without current.

Uno Nilsson (EUZ/MDBC)

Connection device.

Christer Gilén (BO/ESS/XTE) Gunnar Kjellander (BO/ESS/XTE)

Device for use with digital telephone systems.

Bengt-Åke Henriksson (SV/EIS/G/TX)

Feeding mechanism for printers

Ingvar Sundell (EUA/ZFL)

Device for achieving parallel synchronous operation of a first and a second my processor.

Leif Kron (KI/ERA/H/CLT)

Transient protection unit.

Gunnar Ederstål (KI/ERA/L/MTN)

Circuit device for frequency synthesis.

Gunnar Lindberg (MÖ/ERA)

Device for adjusting the angle and turning of the plane of an apparatus platform.

Liesel Hallstedt (KA/SI/BDP)

Device for laying a continuous sheet of paper folded zig zag in a pile mainly in a vertical direction.

Bengt Ossfeldt (TN/XT/TU) Ulf Palmgren (TN/XT/TFM)

Device for monitoring of a data processing system.

Gunnar Forsberg (KK/YOBC)

Procedure and device for measuring the effect of incident light.

Ericsson to provide down-the-hill radio for the US army's MSE program

Ericsson Radio Systems of Sweden has been selected as supplier of the down-the-hill microwave radio for the US Army's MSE program. GTE Tactical Systems Division, prime contractor for the GTE-RITA system, has in international competition chosen the Ericsson MF 15 microwave radio.

The MSE program will run in several steps and options. The total need is more than

2000 radios over a six years period to a value well over 100 million US dollars.

The Ericsson MF 15 is a 15 GHz digital microwave radio, primarily designed for mobile applications within the armed forces.

The MSE program will provide automated voice, data and facsimile communication to the US Army's mobile and stationary users at corps and division levels.

Largest US cellular market awarded to Ericsson

Los Angeles Cellular Telephone Company (LACTC) has chosen Ericsson as the systems supplier for the nation's largest cellular market. This contract, Ericsson's biggest single order in the US, is estimated to be worth more than USD 40 million and elevates Ericsson's domestic non-wireline cellular market share to more than 35%. The company holds a 50% market share in the nation's top ten markets.

Peter Thomas, President of Ericsson, Inc., responded to the news by saying "This contract with LACTC represents a major victory for us in the cellular arena. This is the sixteenth market in North America where the AXE will switch cellular traffic. Remember, this is the same digital switch that we are bringing to the central office market. So people can be sure that we are committed to the AXE. It's proving itself."

According to John Bourg,

President of LACTC, Ericsson was chosen "because they have a proven high quality, high capacity system which is required for the L.A. market and for their overall business proposal to LACTC".

At the core of the cellular system is Ericsson's high-capacity modular digital switch, the AXE. It is powered and controlled by the APZ 212, the world's most powerful telecommunications processor. The AXE will manage cellular telephone calls between dozens of radio base stations servicing tens of thousands of Los Angeles area cellular subscribers.

Ericsson cellular mobile telephone equipment has been contracted in 22 countries including the Nordic Mobile Telephone System, the world's largest cellular system which is already serving approximately 250 000 subscribers.

Ericsson gets order from British Telecom worth one million pounds

British Telecom has, through Comtec Cable Accessories Ltd, signed an order worth around 1 MGBP for equipment to fusion-splice optical fibres.

Ericsson Fiber Optics AB, Sweden, received the order in the face of intense international competition.

This order means that the Swedish company is today the sole supplier to British

Telecom of fusion splicing equipment for so-called single mode fibres.

The splicing system consists of the fusion splicing machine FSU 850 and its accompanying equipment.

Ericsson Fiber Optics AB, with about 50 employees, was formed one year ago to develop and market new products within the fast growing area of fibre optic communications.

MUSD 190 Telecommunication equipment orders from Mexico

Teleindustria Ericsson SA, Mexican subsidiary of the Swedish Ericsson group, has received a series of contracts worth MUSD 190 to supply digital AXE telephone exchanges and other telecommunications equipment to the Mexican telephone administration TELMEX (Teléfonos de México).

The orders are mainly for equipment needed as part of the country's telephone network development programme, but also include four digital AXE exchanges supplied as part of the emergency programme following last year's earthquake.

The largest of the orders is a turnkey contract for digital AXE local and transit exchanges, and a number of computerized AOM operation and maintenance centres. These AXE exchanges,

to be installed in 1987, will have a total of 230 000 equivalent lines.

Another order covers analogue switching equipment and digital and analogue transmission equipment also to be installed in 1987. Four digital AXE transit exchanges and transmission equipment were supplied to help restore telecommunications services following last year's earthquake disaster and are already in service. One of the four is for international satellite traffic.

Most of the equipment to be installed in 1987 will be manufactured in Mexico by Teleindustria Ericsson.

The four digital AXE transit exchanges for the emergency programme were supplied from Sweden and financed by a World Bank loan to TELMEX.

Our personal computer one of the "Picks of the year"!

The Stockholm City Planning Office's assessment of personal computers and printers, gave Ericsson, Stadab and Wang the "Pick of the year" award recommending them for the city administration. The Ericsson PC was given top marks and the following accolade:

"Ericsson's PC, including the software has been ranked among the best in virtually all areas. The equipment was given top marks in the ergonomic evaluation."

Gunnar Backlund, chief of information at EIS, comments:

"The results of the City Planning Office's assessment testify to the competitive strength of our PC. The Planning Office's report is gratifying to hear and the attention it has received in the trade press also indicates the weight that the city planning office carries. In fact it is often usually a guide for other buyers." ■

Third and largest AXE in Hong Kong

A SEK 50 million contract has just been signed for installing the third and largest international AXE telephone station in Hong Kong.

The new station will be one of the largest fully digital stations of its kind in the world. Not only will it handle international traffic to and from Hong Kong, but it will also serve as a key relay station for all international telephone traffic in the Far East.

Hong Kong is the hub of an extremely intense flow of telephone traffic virtually 24 hours a day between Europe, the United States and Asia thanks to its prominent position in the shipping and financial worlds.

The equipment will be supplied by Ericsson in Stockholm and installation is scheduled to start in Hong Kong, some time in 1987.

New research study:

Telephone getting tougher for tricksters

How much do we really know about how modern telecommunications technology has affected man and the development of society? It's only in terms of technology that 100 years is considered a long time. Culturally, 100 years ago was only yesterday. Have we even become adapted to the "telephone" yet? Is this only the beginning of a development leap that will eventually alter the very fundamental conditions of our society?

We do not have any definite answers to these questions. It's only been in the most recent decades that research in sociology and psychology has begun shedding some glimmers of light on these matters.

Important breakthroughs in technology can initially appear harmless and simple. As long as most people encounter microelectronics as pocket calculators, digital watches and computer games, they'll never consider it more than an unnecessary gimmick. In fact, 150 years ago, the telephone was a gadget that transmitted musical tones by means of wooden ribs.

Melville Bell, Alexander Graham's father, was an idealist, who spent his entire life trying to come up with an alphabet that was universal and available to all people, that would help the deaf and so on.

The son shared his father's ambitions. Together they studied various ways of going about it. Young Alexander read the writings of the famous Helmholtz and got the impression that Helmholtz had succeeded in transmitting vocal sounds by telegraph. In fact, because of his poor German, he had misunderstood what was written. But it was a mistake that was to have unfathomable consequences.

In the 1870s, many inventors were attempting to transmit a voice electri-

cally. Indeed, a few hours after Alexander Graham Bell handed in his application for a patent for his telephone, another application was submitted. Lawyers were making good money on the court cases that arose as a result of all these patent applications. Bell came out victorious in all of them and the names of his rivals have long since faded from memory. But this is a perfect example of the old saying that life is what goes on while you are busy doing other things.

"By telephone the only thing that works is authority based on knowledge and fact"

Worthless plaything

It took a long time for the telephone to shed its plaything status. The same situation as with the home computer today. But today the telephone is such an integral part of life that we never give a thought to how indispensable it has become. In times of emergency,

during negotiations for solving problems and even for socializing — for every facet of society today.

But there are still many people who are reluctant to take this "remote control ear" to their hearts. They think it cold and impersonal and they feel inhibited and hobbled because they can't see who they are talking to.

The question is, has the telephone found its proper place in our world? Maybe we have not discovered its true capabilities. Its role as a social-changing force may be far from spent.

An increasing number of research studies have shown that the telephone has certain clear "human" advantages over other means of communication. Thanks to its very impersonality.

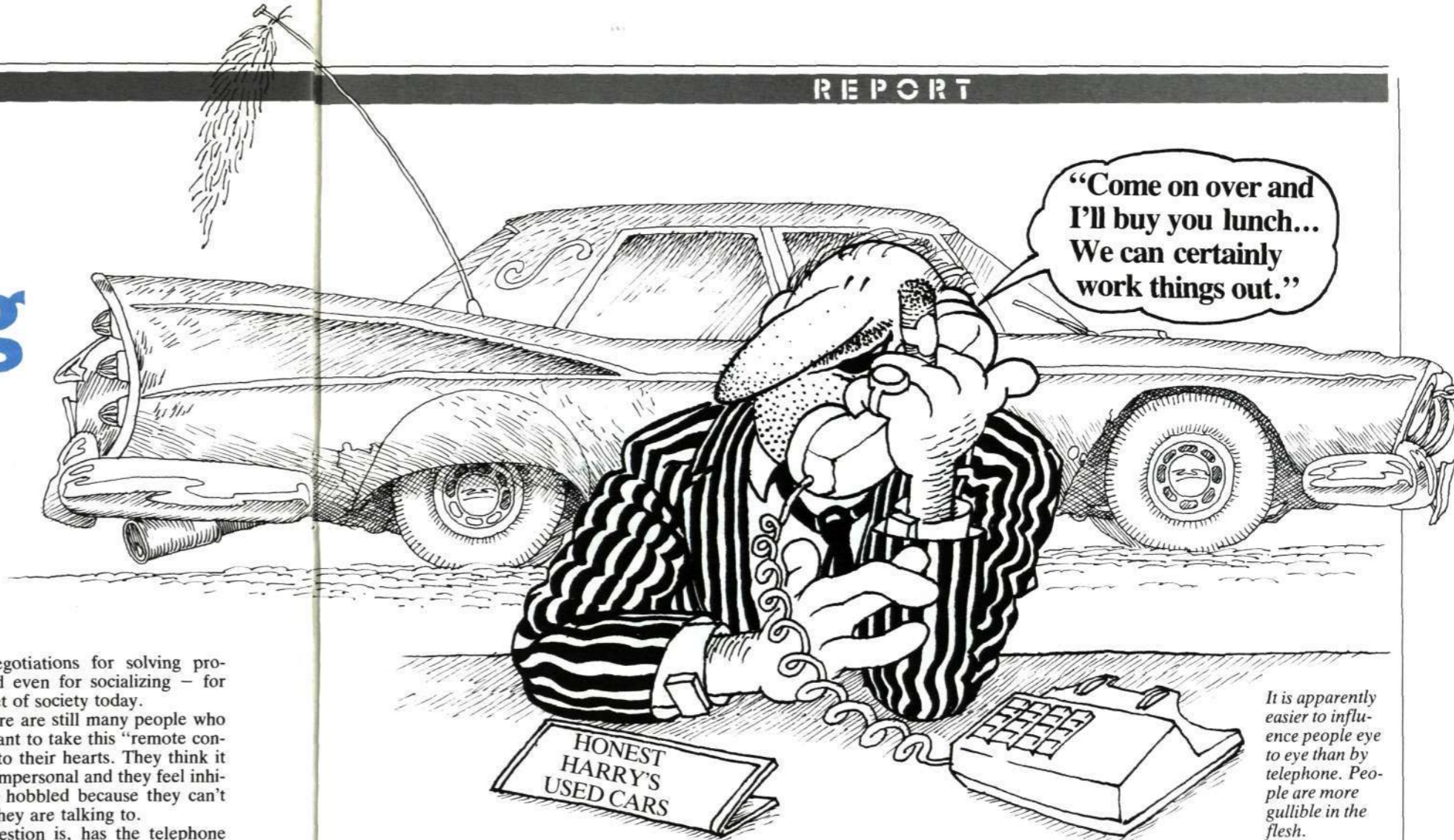
Eye to eye best way to lie

It would seem to be tougher to influence people eye to eye than over the telephone. But, surprisingly, we seem to have an easier time hoodwinking and manipulating each other in the flesh than over a phone line. If you have got the solid facts in your favour, then there is a greater chance that you will prevail if you dial the telephone instead of meeting your adversary and looking him in the eye.

"By telephone the only thing that works is authority based on knowledge and fact," wrote Marshall McLuhan in 1964. His ideas were met with scepticism because he didn't back them up with statistics and experiments. Today, research on the social psychology of communication is growing in strides. And it's proving him to be right.

The Nixon tapes

For instance, scientists have studied the tapes that Richard Nixon recorded while President (and which became his



downfall during the Watergate scandal). They revealed that he had more differences of opinion on the telephone than in person. On the telephone, people talk franker and more efficiently, their syntax is simpler and contributions more evenly distributed.

Why is this? It is a scientific mystery that it is even possible to carry on a logical exchange of ideas on the telephone. How can you steer a dialogue in a vacuum of visibility? Why is there not a chaos of pauses, interruptions and convoluted, simultaneous gabbing?

Strangely enough, it seems that people in fact articulate more smoothly on the telephone than in person. Gestures and expressions are supplanted by changes in tone, by ums and ahs. And this seems to make it easier to communicate.

Various tests have been carried out comparing methods of communicating technical instructions or the details of a complex business letter: Face to face, by text or by telephone. The results show there to be no significant difference between any of the methods. Regardless of the technique used, the message was understood roughly as fast and with the same accuracy.

It has been a generally held view that people with conflicting ideas have an easier time coming to agreement if they are face to face with one another.

However, many experiments are proving the opposite to be more likely.

Heated arguments

In arranging disputes, two parties were given lists of planned, heated topics for argument. It turns out that the most logical concrete arguments have had much greater effect via the telephone than face to face.

How can good arguments become even better by telephone? Well, it is reasonable to assume that the telephone eliminates any dubious psychological factors that otherwise colour and distort the message.

"Why is there not a chaos of pauses, interruption and convoluted, simultaneous gabbing?"

This could also explain why it is easier for people to change their opinions on the telephone. A number of experiments have involved having two people in deep disagreement carry on a discussion eye to eye, through a television link-up and over loudspeakers. As a rule, many more of them changed their opinions when they only heard their opponents. The television link-up

was not quite as effective, but at least eroded convictions to a greater degree than in the case of physical presence.

What's more, people only in voice contact described their opponents as being nicer, more honest, more reliable and more reasonable than in the other situations. In other words, in trying to reconcile strong differences and personal conflicts, telephone and radio communication would be more effective than more physical media.

Voice has greatest effect

At Bell's laboratories in the United States, Valerie Geller, a scientist there, put people in contact with one another via sound or video, in different rooms or in the same room and had them discuss controversial issues. She too discovered that voice-only communication had the greatest effect.

In order to find out whether this was due to social pressure, to the need to be accommodating, she asked her test subjects to write her a card two months after the test, telling her what they thought at that time on the same matters. As expected, some of them had retracted some of what they had said before. But the groups that had strictly been in telephone communication were the ones who had changed their minds the most.

cont. next page

Telephone getting tougher for tricksters

Bluffing

Geller tested another fascinating notion. That it is easier to bluff and put on an act when face to face with someone than talking to them on the telephone. And it appears that that is the case. When she told people to act either authoritatively or submissively, they found it easiest to do so when they stood face to face with someone.

And this was the case whether they were bluffing or whether they were assuming their true nature. The test leaders themselves had an easier time telling which was which when only listening to someone's voice as opposed to standing in front of the person.

"Telephone interviewers can ignore all their own emotional projections, distinguish between honesty and falsehood and form a truer picture of the interviewee," writes Geller.

Liers raise their voices

Other studies have revealed that people not telling the truth often raise their voices. This is something that is easier to pick up by concentrating solely on voice. This may explain why it is more difficult to lie and get away with it on the telephone.

You could sum up these studies as follows: (1) If you want to make an impression on someone, but you have things to hide then do not phone them. Arrange for a personal visit instead! (2) If you want to form a non-biased opinion of someone's intentions, phone them! If you meet together, it will not take long until you are on close terms. And thus, an easy mark.

Bad arguments, personal visits

People with the shakiest of arguments are thus the people who have the most to gain by meeting someone in person. So someone in a solid situation should make sure to keep contacts by tele-



phone. Especially if they are the generous type. Then there is less chance that they will give away the whole store

Do not forget though that the basic rules of thumb never apply to everyone. They are based on statistical averages and thus disregard the fact that all people are different. Behind every rule is hidden a host of exceptions.

“What’s more, people only in voice contact described their opponents as being nicer, more honest, more reliable and more reasonable than in the other situations. In other words, in trying to reconcile strong differences and personal conflicts, telephone and radio communication would be more effective than more physical media.”

Nevertheless, the results of this social psychological research is worthy of attention. Particularly in these days when technology is burgeoning and buzzing all around us. Our staid old telephone is assuming new guises and fantastic new forms. This is where science can heighten our awareness of the effects of various kinds of media.

And we will need it if we are going to be able to use them in the best way.

One reason people created civilization and cities was to be able to communicate better. Our physical and social environment today was shaped by a search for information that required people to be constantly on the move. This has given rise to hard-to-solve problems. We are now in dire need of a means of communication that does not require extensive movements of people and equipment.

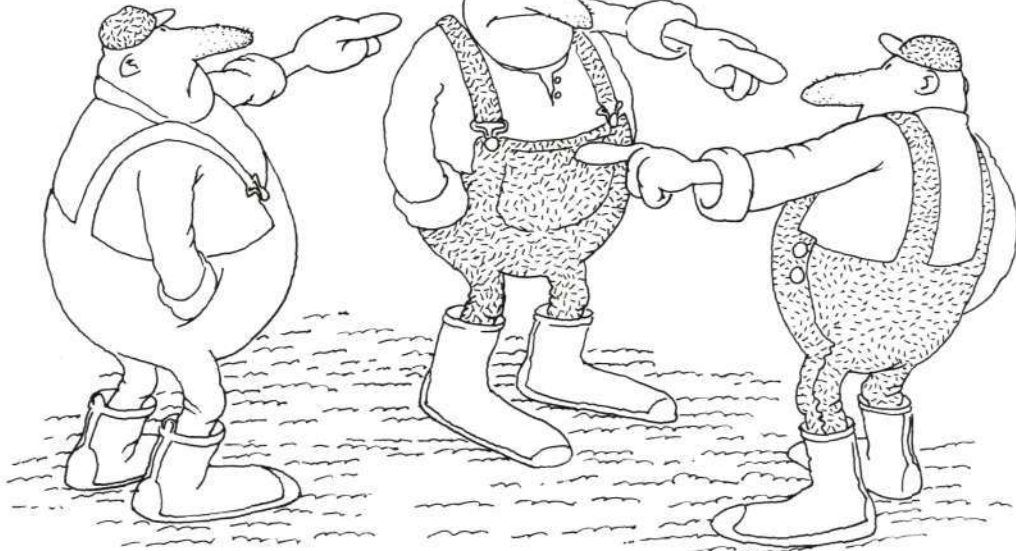
If we can educate ourselves, work and play no matter where we are geographically, without needing to crowd into overfilled, churning cities, then entirely new kinds of communities will be possible.

Telemarketing

Companies are constantly coming up with more and more refined kinds of telephone communications with their customers. For instance, telemarketing, which involves backing up telephone sales staff with databanks of statistics. Training courses are already underway teaching people how to attract attention, create trust and modulate their voice, so that they don't give the impression of zombie-like everyday routine.

These kinds of courses tend to be a little stiff and serve up formulae that are much too simple. Why don't we instead listen to what the new communications psychologists have to say? Why not phone up Valerie Geller?

The Ericsson brothers



The people in the village sometimes wonder whether the Ericssons are really brothers. They don't act like they are. They do not help each other any more than they have to in play and at work. If one of them falls down then the other will be the first to laugh. They talk behind one another's backs and they take on last names that make people in the village sometimes question whether they really do belong to the Ericsson family.

Last year was not that great a year for the Ericssons. If you ask why things went as badly as they did, then you'll get a different answer depending on who you ask.

Know why

One brother is adamant that things went poorly because he couldn't sell all the wheat he produced. Another brother is certain that he was not able to bake enough bread because there was a wheat shortage. But for the third brother who produces milk, things were rosy. This made his father proud and his father mentioned him as a shining example when neighbours asked why wheat and bread production had fallen off so badly.

The brothers taking care of the wheat field and the bakery were quick to explain why the milk operation did as well as it did.

"It's because the cows were able to eat tons of top quality wheat all year round," said the first brother.

"It's because I was able to make feeding more efficient," said the other brother.

We are doing well

The brother in charge of milk production is feeling proud. He pats his farmhand on the shoulder and gazes out over his fine-looking cows.

The Ericsson family has done very well for themselves. It is talented, it has grown considerably, it makes good money and it is known and respected throughout the village. The brothers in this family, like brothers in so many other families, can get into terrible battles with each other at times. Dragged in front of their father they will always blame one another. Like all brothers will do. But other brothers usually defend each other among other people. The Ericsson brothers usually go on fighting so that the entire village can see and hear it.

"We are doing well," he says contentedly. The farmhand is puzzled.

"Down in the village they are saying that Ericssons are doing poorly. But the Ericsson in the barn says we are doing well. How can that be?"

One of the brothers has come up with an ingenious wind generator. He convinces the other farmers in the village to buy one. And they do. But he is not very practical. So another one of the brothers has to take care of the manufacturing.

Always the same

When the brother who made the wind generator arrives to install it at one of the farms, then the location is not quite right and it is difficult to put the parts

together. The brother explains to the buyer.

"Well, you see, my brother Willy doesn't know how this works in practice. It is always the same when he tries to do anything. In the end, I always have to try and get things to work because he hasn't planned it right.

"The farmer phones the brother who has devised the wind generator. Then he is told:

"If my brother had just done what I had shown him, then that never would have happened. It is always the same when he is going to do anything.

"It's lucky there are so many brothers in the family. Because that way there is always someone else to lay the blame on. Or to put it another way, no one is responsible for anything and everyone can point to someone else as being responsible.

"I am the one who does things right. It's the other ones who are wrong.

"But despite all the problems the family and the brothers are doing well. Actually they're all skilled and energetic. But the people in the village think that they are a little strange at times. It's OK that they fight at home once in a while. But doing it at work on the farm and in front of everyone in the village is another thing altogether.

Imagination or reality

If they helped each other instead and accepted responsibility, not only for themselves but for the entire family, then perhaps they would do better.

Of course this is a village in our imagination. Because in reality people would never act like that, would they?

**Bengt Plomgren
Storyteller**

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Contact with the rest of the world ...

Ericsson has been working in Mexico for 80 years. We have grown from a tiny company running a single telephone network into the country's top supplier of telecommunications components. Ericsson was able to respond swiftly to the earthquake last year and this generated untold goodwill

throughout Mexico. Ericsson received an amazing 60% of all orders in the rescue scheme. For Ericsson it was only natural to provide assistance in Mexico - 95% of the telecommunications centres in Mexico City come from Ericsson.

