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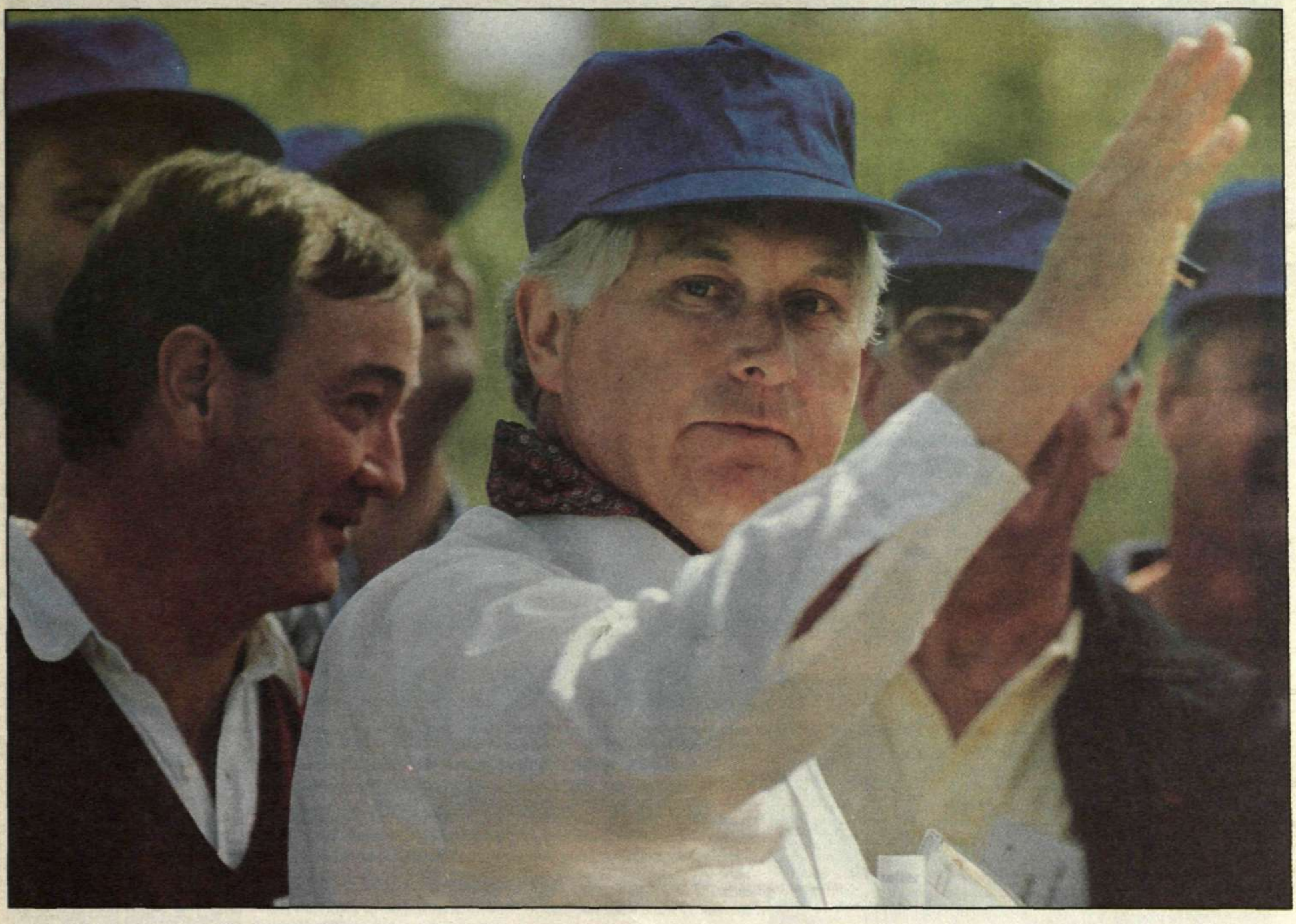
ERICSSON PUBLICATION FOR EMPLOYEES WORLDWIDE No. 5 1993



Winning the future with more teamwork

Report from the Ericsson Management Forum

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War in the tele world

The "Tele world of the Future" series concludes with a future scenario of a warlike nature.

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System on silicon

Specially designed silicon circuits lie behind Ericsson's technical leap on the mobile side.

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The German wonder

Mannesmann Mobilfunk operates the world's largest GSM network. Ericsson built most of it.

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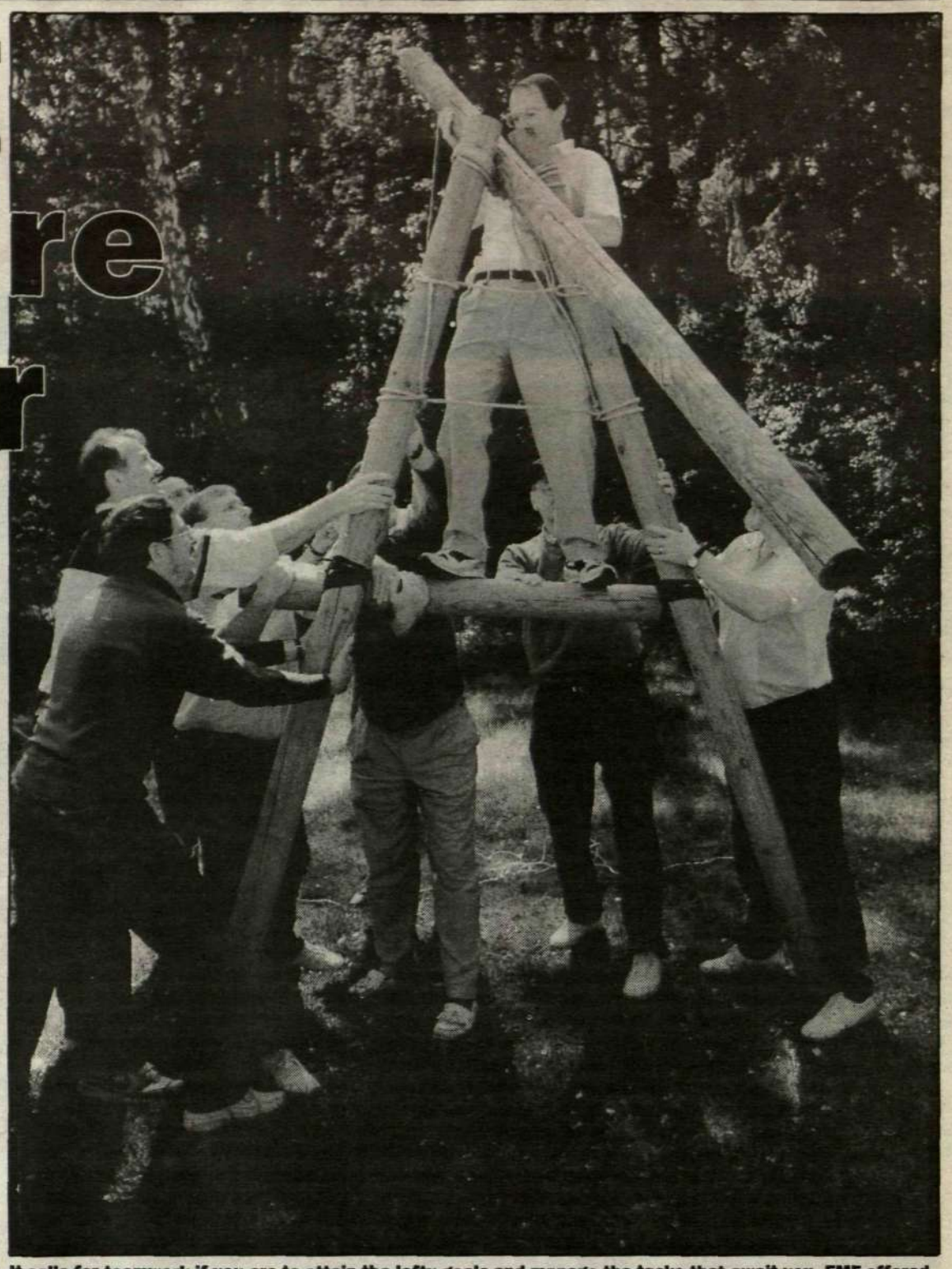
Winning the future together



It calls for teamwork if you are to attain the lofty goals and manage the tasks that await you. EMF offered several practical exercises toward that end.

Ericsson is heading for better times. Confirming this observation, Lars Ramqvist opened the huge management conference of Ericsson Management Forum.

Optimism on where our own company is headed is based on developments in earnings, sales and order bookings over the last two quarters.

The sun was hining over Ericsson when Lars Ramqvist opened Ericsson Management Forum, EMF, at Hasseludden, outside Stockholm. More than 200 of the group's top executives had gathered to be informed about company developments that have taken place since they last assembled at the large international management meeting in Sonthofen. And, not least, through teamwork and discussions to come up with ideas and views on a number of important company issues.

Lars Ramqvist opened the management meeting with a short review of the very positive economic developments for Ericsson in recent months. He emphasized special gains on the cellular side where order bookings for the first quarter grew an entire 88 percent, compared with the same period last year.

"But it is during the sunny days that you have to start worrying and planning for harder times", Lars Ramqvist very clearly emphasized.

"In other words, we must aways be alert, continously improving our competetiveness".

Right strategy

"We are heading for better times, while others are heading for worse, like we did in 1991 and 1992," said Ramqvist, indicating that large competitors had posted heavy drops in sales. "Competition in the tele market is tough and there is no doubt that Ericsson has chosen the right strategy for the nineties."

"Our hefty technology investments and our aggressive marketing have borne results. Together with the cost control achieved by TRIM, the company has avoided posting losses and is now showing a very positive earnings picture. As a fourth path in our strategy investment in TQM, Total Quality Management, has meant a lot for Ericsson's long-term relations with quality-conscious customers.

A changing world

Lars Ramqvist called on Jan Stenberg to talk about the dramatic changes that have occurred in the world of Ericsson over the three years that have elapsed since Sonthofen.

"Twenty new operators in ten different countries, have come about in these years," Jan Stenberg noted. "At the same time 15 tele operators were privatized and an additional 20 are slated to be privatized in the next four years. Some 40 executives in key positions – president, board chairman, and the like – have been changed in recent years.

"In countries where the tele market has been deregulated, operators have cut payrolls by 20 percent, while it has remain mostly unchanged in countries where you still have monopolies. Among suppliers, Ericsson, AT&T and Northern Telecom are companies that have corresponding reduced staff while other major suppliers are still to adapt to changing conditions on the market and new technology in production."

Carl Wilhelm Ros, responsible in the exceutive committee for economy, confirmed that thanks to TRIM Ericsson was able to come through the very tough situation of the past two years. The goal of TRIM in 1992 that company sales costs should be cut to 35 percent of invoicing at year's end was achieved.

"The company's effective finance administration has also helped boost profitability," said CW Ros. "In close collaboration, the Ericsson companies have avoided all the large currency fluctuations in recent years.

Not enough

"Even if we are happy over the lastest profit developments, we must remember the earnings result for 1992 is not enough to declare a dividend. Reckoned per share the results in Swedish kronor is 2.50, while the dividend still was 3.50.

The board's decision, despite this, not to reduce the dividend was based on the fact that there is a general improvement trend . Ericsson's technical investments are beginning to pay off and all the business areas are now talking about improvements in cash flow as well as yield.

Lars Ramqvist then explained the aim of EMF.

"We on the corporate side want to inform you about developments since Sonthofen and about our views on certain issues. We do that in order to commit you all to the task we now have ahead of us, so that you can share your experiences and views. This way together we shall strengthen Ericsson."

80 markets

"The selection of delegates was made from the departure point of the group's most important markets. Almost 80 countries are represented here and that is why we in the corporate leadership must have feedback from you who work in these markets," Ramqvist explained.

With a glance back at Sonthofen and the new matrix organization that he presented then, CEO confirmed that there is astill a lot to be done in the matter of "the one company approach" – the overriding concept in Ericsson's new organization, where the company approaches customers as a single unit.

"Matrix is an organization that demands collaboration."

The more than 200 delegates at Ericsson Management Forum split up into groups. During the entire meeting there was group work so that delegates could have a chance to give their views on current issues.

EMF Report: Lars-Göran Hedin
Photos: Lars Åström

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Distribution: Birgitta Michels, tel: 08-719 28 14.
Layout: Nymedia.
Print: Aftonbladet Civil, Göteborg, 1993.
Cover photo: Lars Åström
CONTACT is published by:
Telefonaktiebolaget LM Ericsson
HF/LME/DI
S-126 25 STOCKHOLM.

Ericsson must be known

To do business you have to be well known on the market. That's why Ericsson has a lot of work to do on many markets. The company quite simply is still far too little known in countries like Germany, U:S:A:, Japan and France.

Because of this a global advertising campaign has just been launched and that's why we need continued efforts on many fronts to raise Ericsson's profile out in the world.

Nils Ingvar Lundin, head of corporate function information, DI, talked about the link between being known and doing business. There is research done that clearly shows that a company that is well known in the market have greater chances and also succeed in its business.

"The better known a company is the greater the chance to attract customers to buy from it and, in the end, actually to do so," says Nils Ingvar Lundin. "The tool for getting better known is communication."

Utilize good news

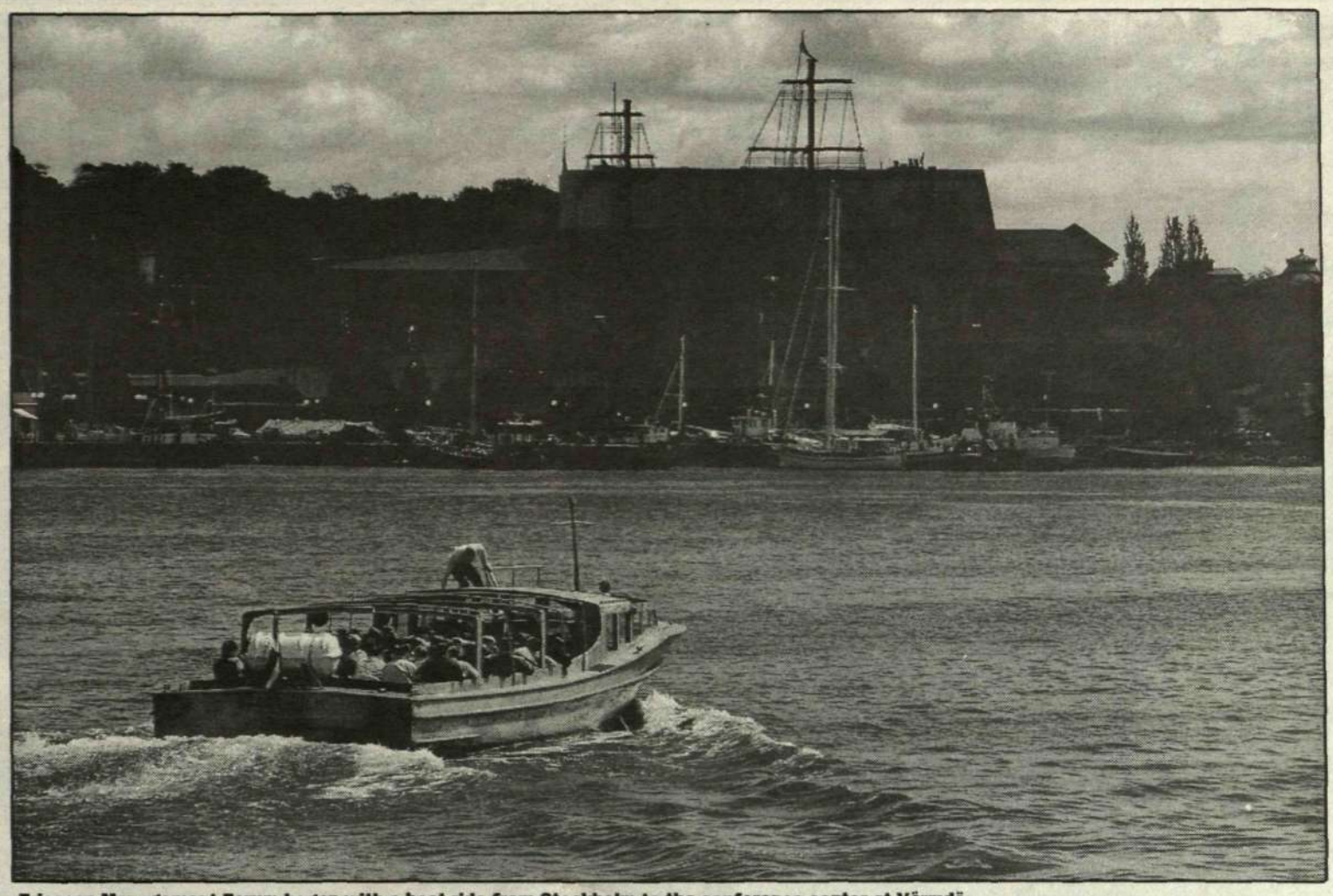
"First of all we must utilize all the good news that we have to share. We must maintain good relations with the media. Newspaper articles and TV and radio reports are ideal advertisements. That's why it's necessary to have press releases ready and approved by the customer before contracts are signed for big business deals, so that the news can be spread without delay.

"Such procedures also reduce the risk for leaks, a problem that has recently plagued Ericsson on big deals where they were concealed long before release publicly."

Nils Ingvar also spoke about the corporate profile ad campaigns that have just begun and the customer magazine Connexion.

These new investments are part of a communications program that was approved in the fall. Besides the ad campaign and the cutomer magazine there are alo exhibition activities that will be better coordinated, under the leadership of DI.

Bengt Halse, head of business area Defense, communicated with the help of an accordion.



Ericsson Management Forum began with a boat ride from Stockholm to the conference center at Värmdö.

BT sees Ericsson as a partner

In recent years Ericsson has had tremendous success in Britain. That depends a great deal on how relations between Ericsson and BT develop. Today BT sees Ericsson as a strategically important partner when it comes to safeguarding BT's competitive advantages in the world's perhaps most competition-laden tele markets.

"We now see Ericsson as an important partner in all aspects of the fixed tele network," explained Nicola Dick-Cleland, responsible for supplier relations in BT.

Change in tele markets, with increased competition and deregulation have come out in full swing in Britain. There BT – former British Telecom – is far and away the leading operator. BT became a company in 1981 and privatized three years later. In 1991 the company took its new name and entered into international investments. Today, BT has 20 million subscribers, 1.5 million business customers and more than 4,000 products and services in its program. It is the fourth-largest tele operator in size, after AT&T, Deutsche Bundespost Telekom and NTT in Japan.

One in the bunch

"In 1984 Ericsson was one of the suppliers among all the others in the bunch. Bad communications between the companies and cultural differences was a hindrance in relations. On the other hand BT was not particularly interested at the time in developing relations with its suppliers. They looked at quality but did nothing active to influence it," says Nicola Dick-Cleland.

Since BT was privatized it also began to change its views about suppliers. In 1985 Ericsson got its first order for AXE for local exchanges. By 1991 five million lines were installed, which indeed reflected enormous growth on the British market. Ericsson's market share had risen to 25 percent.

Deeper collaboration

"During the years the relationship between Ericsson and BT has developed quite well. BT found design faults in AXE 10 but Ericsson solved the problem.

Still, this affected the Swedish supplier's reputation negatively.

"In this situation I realized that Ericsson took its relation with us at BT seriously. Dialogue and collaboration intensified, and in the same time BT changed to be a more risk-taking and open company.

Veritable success

"Before the latest negotiations for modernization of the local exchanges, we at BT found that Ericsson could offer solutions that met all BT's own targets for projects.

Since its competitor is a domestic British company with long-time relations with us, our order to Ericsson is nothing short of a veritable success," Nicola Dick-Cleland pointed out.

Nils Grimsmo, head of the division Public Systems, ETL, was one of those praised by Nicola Dick-Cleland.

A succes that repeated itself a few months ago when BT decided to increase the number of transmission suppliers so as to get Ericsson on its side too.

Out in the world

BT is looking out to the world now, where it has several important projects on the way. Recently it bought into the American operator MCI, another traditional Ericsson customer.

Another important international project is cyclone, where BT offers business customers a global communications network.

"We have chosen Ericsson as a partner in the Cyclone project, where we will compete with quality and with speed in the matter of new services.

"Ericsson's success with us during the '80s was to a large extent based on quality and flexibility. During the '90s it was confidence in Ericsson as a partner that paved the way for collaboration between our companies. There are a lot of people in BT who feel very satisfied with Ericsson as a supplier.

Best supplier

"Ericsson does what it says it will do, and says so if it cannot. Quite simply, it is the best supplier we are working with right now," said Nicola Dick-Cleland. She directed her praise particularly to Anders Igel and Nils Grimsmo from ETL, both of whom played significant roles in in how relationships between Ericsson and BT have developed in recent years.

Lars Ramqvist thanked her on behalf of all of Ericsson for the praise.

"BT has really meant a lot for us at Ericsson – you are by far the most demanding customer we have," he noted.

A good leader gets all pulling in same direction

When managers gather for a management meeting *it is natural also for them to discuss how changes* in the tele world affect demands on the company's leadership. Britt Reigo, head of corporate function personnel and organization, with her staff prepared a paper on leadership. Among other things, she presented a new definition of the manager role in Ericsson.

CW Ros introduced the paper on the Ericsson manager by stressing the central significance of Ericsson's three shared values – professionalism, respect and perseverance.

"Along with that there is also a need from managers for integrity and visibility. These five concepts form the base for a new description of the Ericsson manager, which we would like to discuss with you delegates," said CW Ros.

While CW Ros elaborated on the preliminary description of the management role in Ericsson, the delegates were able to discuss through the distributed document in groups. Also since the results of discussions weighed on formulating and describing, there is now a document "The Ericsson Manager" that explains what an Ericsson manager should be:

Ericsson manager

The Ericsson manager should contribute to Ericsson's success by executing remarkable management work. He or she must act with authority, firm and decisive. The manager must be a model when it comes to the company's shared values – professionalism, respect and perseverance – and he must be reponsible for seeing to it that the group's policy and guiding principles are lived up to. An international attitude and a respect for cultural differences also characterize the Ericsson manager.

The Ericsson manager has many dimensions – business, competence and team work.

Business manager

To develop collaboration among Ericsson units to realize the goal that Ericsson will above all be seen as one industrial unit. To attain new business opportunities by acting flexibly and entrepreneurially.

Make Ericsson the company that the customer chooses as a trustworthy partner, by supplying quality products, systems and services in designated time.

To concentrate on living up to the customer's need to foster a long-term relationship to the customer. Make clear to all employees their responsibility and mission to satisfy the customer's needs. Treat internal as well as external customers with the same attention. To be responsible for profitability on both the short and long term.

Activity developer

Translate the company's vision, strategy and goals to the level of their own activities. Engage colleagues at all levels by allowing them to take an active part in setting goals, by reassuring a feeling of participation and commitment for Ericsson and its customers.

Give the employee feedback and follow up on their work.

Design processes for continous improvements, where all employees are concerned.

Competence developer

Plan for and develop the competence that is needed to reach short- and long-term goals. Develop organization and job assignments so that individuals have the satisfaction of a shared responsibility and in being trusted with a number of different assignments.

Challenge all employees to develop their competence. Promote job rotation.

Show yourself as a model performer and pathfinder for employees by giving and taking criticism and praise. Engaged in personal development by constantly developing your own competence.

Team builder

Promote Ericsson's activities by achieving and leading the team. Utilize the individual's entire potential by building a team with different personalities and complementary skills.

Stimulate creativity and open work atmosphere. Promote the concept "one industrial unit" by supporting building of networks and collaboration among different organizational units.

The TQM awards went to EXU and EME, accepted by Björn Hemstad and Eduardo Herranz. Lars Ramqvist offers congratulations.

Prize for best TQM project

TRIM and TQM are two Ericsson concerns that in the long run will merge into one.

Johan Siberg, head of TRIM, spoke about ongoing and future TRIM activities. Jan Stenberg, who in the executive committee is responsible for quality matters, spoke about TQM and its significance as the most important tool for boosting Ericsson to new heights as a quality company.

EMF had six different TQM projects nominated as the three best improvement projects in two classes – big projects and smaller ones. Delegates received information on the projects and voted on the best project in its respective class.

For the first time Ericsson's TQM award was given to two well-deserving companies in the group.

In the category for improvements in a smaller scale the winner was the project "38/19 reduced lead time" at Ericsson Network Systems, EXU, in Richardson, Texas. The project managed to halve lead time from order to finished delivery of AXE switches. President Björn Hemstad accepted the award, standing in for Frederik Winterlind, who led the project at EXU.

First prize for the best large improvement project went to Ericsson, S.A., EME, in Spain. The project, "Increased customer satisfaction," achieved improvements in a number of different areas that are important for the customer. The prize was accepted by Eduardo Herranz from EME, but the project leader was Miguel Arenas.

Company in change

A lot has happened during the three years that have passed since Lars Ramqvist first presented Ericsson's new organization at Sonthofen. New Major Local Companies have been achieved on the larger markets and in Sweden the business areas' organization has undergone major changes.

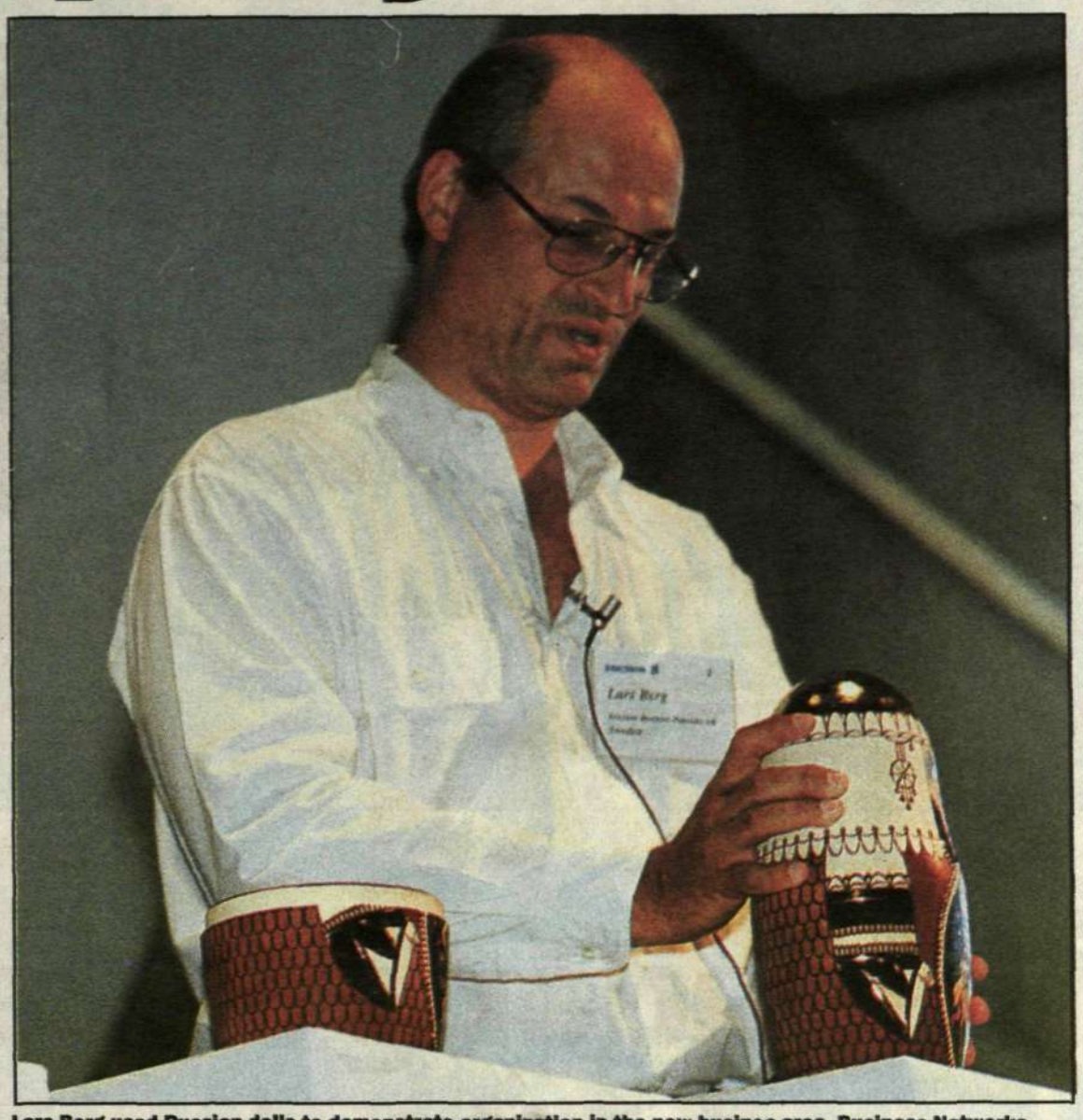
"The changes that have taken place show that there is dynamism in the matrix organization. But we are not yet finished. It will still take a few years more before all the pieces are in place," Lars Ramqvist said.

Ericsson's organization can best be described today as a matrix. The matrix is a vertical organization built up of 12 different Major Local Companies, MLC. They are the larger companies that on the most important markets represent all of Ericsson vis-à-vis the customers. These companies have greater significance than before in that they have the important key role of being the company's face to the market.

For markets that are still not large enough to merit an MLC, there is instead a Local Company, LC. MLCs report directly to the chief executive officer, while LCs may report to someone else appointed by the CEO.

Horizontally through the matrix runs the business areas' activities. The business areas are above all responsible for product development and strategies in the respective areas.

At the start of the year the number of business areas was reduced from six to five, with a new business area Business Network, BZ.



Lars Berg used Russian dolls to demonstrate organization in the new busines area, Business Networks.

Restructured

During the last two years the business areas were also reorganized internally. Two new concepts have been introduced – business units and core units. Business units are closely linked to different products and systems, while the task of core units is to administer and further develop the group's common technologies.

"There is little difference among business areas as to how one determines the business units, but eventually it really doesn't matter how one applies the business unit ideas," Lars Ramqvist explained. He reached out to the delegates with a challenge to become more actively engaged in matters of organization.

"We need a larger dose of positive and creative criticism about how Ericsson's organization functions and how it should appear."

Testimony

Lars Berg, head of the new business area BZ, was the first of three called upon to recount their experiences in the new organization.

"When we formed BZ we had to define the roles that managers in the business units and local companies would have. It is all quite clear. Business units answer for development and production, while MLC-s takes care of marketing".

What guides management is the overall common guidelines, recommendations and policies. If they do not agree one can seek unity higher up in the organization. As a rule business area managers and MLC managers work out the problems together, but in extreme cases one must go to the chief executive committee for resolution," says Lars Berg.

Nearer to customer

Anders Igel, head of Ericsson Ltd. in England emphasized the importance of putting the customer at the center.

"It is absolutely important to get close to the customer. That's why it's good for the matrix to begin on the customer side. But there is lot more to do to get closer to the customer. In ETL we have had solid proof of what open and honest dialogue with the customer means for business."

ETL's organization model, where divisions are formed according to what customer one is oriented to, functions very well, not least in areas where customers compete with each other. Every division can offer its customers Ericsson's entire product range and this prevents any leaks with customer information from one division's customers to the other's – which is vitally important, says Anders Igel.

Since product development is being done at the business units in Sweden, ETL is very dependent on how these unit manage their tasks.

"It is important for those responsible in our company to come in close relations to the management of the business units. This will also create better customer realations. Still there are businnes units that are to far away from the customers, wich is why colaboration between MLC-s and BU-s is something very important. Without very good such collaborations, ETL would never had been where it is today.

Communication

"It is important to Ericsson that the MLC-s understand local market conditions", Ronny Lejdemalm emphasized. Ronny is the head of the North American part of business area Radio communications. Being placed in the USA makes him very close to local market.

Ronny took the oportunity to take up a couple of rather controvers issues:

"We have to minimize business are and corporate bureaucracy, in order to get a better balance between local competence and Swedish expertise! Therefor it is of the utmost important to continously develop the competence of employees in local companies".

"It is also very important to more actively communicate Ericsson's common objectives and visions", Ronny Lejdemalm added.

Leadership and teamwork

Lars Ramqvist closed EMF by concluding that the meeting was a success. EMF gave an overview of where Ericsson stands today in important areas. But the meeting was also a gathering of forces before the coming years.

"Our investments in research and development has borne fruit and it continues on the same scale. The result is today Ericsson has the best product portfolio ever to offer the market".

"With TRIM and TQM we have established two important tools for keeping our costs under control and improving our quality. Both activities intertwine with each other and soon will be totally merged.

"Teamwork during EMF has provided valuable material for us in the executive committee to work with later on. It is an example of how we should work from here on.

"With strong leadership on all levels and broad teamwork we can all help in really making Ericsson one industrial unit."

Ericsson Events arranged

Ericsson Events arranged EMF, which called for large projects starting in the spring. The job was led by project manager Monica Nyström already starting back then. As usual with big events reinforcements had to be called in to meet the needs of hosts and assistants during the meeting itself. Ericsson Events has a standby force always ready to take on such assignments.

Arne Johnson at Ericsson Events here has gathered his forces. From left: Monica Nyström, Gunilla Lundqvist, Birgitta Steen, Britt Gunnarsson, Annika Dahlström, Anita Strandh, Gunvor Westerberg och Eva Olsson. Inger Stahre is missing on this photo.

"We want continued good collaboration with Ericsson," says Heikki Iivonen, department head, and Ilkka Veuro, operations manager, from Helsinki Telephone Association. In the center is Mikka Loppäkoelo, quality coordinator at LMF.

Satisfied customers want collaboration

Congratulations on a successful project, Hans Lindgren.

Finland's largest private tele operator prefers Ericsson

Finland's largest private tele operator, Helsinki Telephone Förening (Association), HTF, gives thumbs up to Ericsson.

ETX, in collaboration with Ericsson in Finland, LMF, has seen to it that Ericsson has a very pleased customer.

Over the course of a year they have worked at developing a new application system for HTF, AXE LOCAL 8.1

In May this year the new system was final tested and ready to be put into operation by HTF in Helsinki. Transition to the new system was smooth, and today, about one month later, all goes very well. The customer is satisfied and looks forward to continued collaboration.

It is always delightful to have satisfied customers. To meet a customer that is overjoyed, in addition to being competent and pleasant, is very stimulating. Helsinki Telefonförening, HTF, is indeed such a customer.

Department Head Heikki Iivonen and operations manager Ilkka Veuro at HTF in Helsinki give the new applications system AXE LOCAL 8.1 a very high rating. For those who worked on the project at LMF in Helsinki and at BU Local Switching Systems in Stockholm, it is heartening to receive such recognition from – as they themselves put it – an exigent and competent customer. Now they have started together a follow-up project, which is also a good recommendation.

Tough competition

Helsinki Telefonförening has its head office right in the center of Helsinki in a turn-of-the-century house. This house was built specifically for them in 1906.

HTF is the largest private telephone administration in Finland. Together with some 50 other private operators they have razor-sharp competition with the state-owned TELE in Finland. This means they have to have a reliable supplier with good products. Ericsson, in its turn, faces tough competition from Siemens and the domestic Nokia.

"Naturally, it is easier for us to choose Nokia as collaboration partner, since they are from Finland," says Heikki Iivonen.

Prefered supplier

HTF, however, sees collaboration with Ericsson now as being so good that they prefer to choose Ericsson as supplier.

"Above all it has been much smoother working with you since Ericsson restructured. It feels like LMF has greater freedom."

HTF also feels that collaboration between ETX in Stockholm and LMF is also very good. Ilkka Veuro adds:

"For us it is good to have a contact here in Finland and not to have contact people spread out all over the world. LMF should be at the helm. For us that means a good product.

"Ericsson is an international company with a good reputation. You are especially known for your huge investments in research and product development. You also have competent employees at LMF who work along these lines, which is immensely significant for us."

Something else that's nice to hear is that HTF feels that Ericsson puts the customer at the heart of business.

On the question of weaknesses in Ericsson, the two are united in their opinion:

"We are not entirely pleased with the manner in which Ericsson issues its function descriptions. They do not always add up from start to end."

Moreover, HTF looks for more flexibility both in Ericsson's methods of working and in the AXE system.

More test collaboration

HTF would like to have increased test work collaboration with Ericsson. They have been very impressed with Ericsson's test engineers during the year.

"Today our engineers control that there are no faults. If some fault is discovered Ericsson is notified, which works all night if necessary to eliminate the problem by morning."

HTF feels that Ericsson should test in a different way from what it now does.

"When you test you close down the whole system and test only one thing at a time. That's not the way a system works in reality. You do not allways test everything, which is sometimes necessary."

HTF tests everything in the system in its right milieu and thus finds eventual faults much more easily.

"I feel that if we work together with just these areas we can learn a lot from each other."

To the question of what they would like in the future, they reply:

Greater flexibility and continued test collaboration, even after installation."

Fewer interruptions

The new Finnish applications systems is built on BU Local's product line AXE LOCAL 8.1. This in turn is built on the principles for developing the applications system called GAS, Global Applications Systems, that was developed by Market Operations AAA.

"We have tried to capture the basic ideas around GAS and design an easily manageable system, which raises quality, lowers costs and cuts lead time to produce an applications system," says Hans Lindgren at ETX, chief product manager for AXE LOCAL 8.1

"Since we got the new system there have been far fewer interruptions," says Ilkka Veuro. The last three weeks it has been absolutely fault-free.

Finland is the first market to which Ericsson has supplied the AXE LOCAL 8.1. Next in line is Sweden, Greece, Ireland, Malaysia and Macau. In the fall, the bulk of these markets will be ready to go into operation.

One can only hope that these customers will be as pleased and satisfied as HTF in Finland.

Joséphine Edwall

Billion order from Dallas

Ericsson will upgrade and build a mobile network in Dallas for over 1 billion kronor. The purchaser is MetroCel, a company owned by McCaw Cellular Communications Inc. and LIN Broadcasting Corp.

Ericsson GE Mobile Communications in the U.S. will supply digital switching equipment for cellular systems in the Dallas area, that will replace the system used by MetroCel today.

The new system means that the moibile telephone system will be built with digital TDMA technology. This technology offers significantly higher talk quality, increased service and better secrecy.

The first part of the system will be ready during the first quarter of 1994. It will include AXE switches with functions for intelligent network services. The switches will serve both analog and digital radio base stations.

"better service"

"MetroCel is definitely decided on being the foremost mobile telephone operator in the Dallas/Fort Worth area," says David Nedham, president of MetroCel.

"Collaboration with Ericsson makes it possible for us to offer our subscribers better service".

"We are proud about working with MwtroCel, especially here in Dallas where we have our own base," says Thomas Isaksson. Thomas is president of Ericsson Radio Systems Inc., based in Richardson, Texas.

GSM order from Iceland

Iceland Post and Tele administration has ordered a digital GSM mobile telephone network from Ericsson in Denmark.

The first construction phase is worth 25 million Danish kronor and covers Reykjavik, Keflavik with the international airport and Akureyri in the north. In these areas live more than half of Iceland's population.

The system is expected to go into operation at the latest in the summer of 1994. Later it will be expanded to cover the entire country.

Price drops for GSM

Sales of digital mobile telephones for GSM are going very well right now. Thanks to a technological headstart Ericsson has taken the lead in sales. Already more than 100,000 GSM phones have been sold and the factory in Kumla is operating at full shift.

Thanks to the volume increase, development costs have already been recuperated. So now Ericsson can put further pressure on competitors by lowering prices by 25 percent.

GH 197, the smaller of Ericsson's two pocket phones for GSM, will cost 2,995 DM on the German market. It is a level that is new for the branch for small digital telephones.

Mobile boom in Hungary

Ericsson Radio Systems has signed a contract for equipment to the fast-growing mobile telephone system in Hungary. The new order covers larger parts of the equipment that is needed for doubling the network to a capacity of 40,000 subscribers at the end of the year.

In the contract is included build-up of switch capacity, radio base stations of the new model RS4000, increased functionality and software for NMT 450i.

The mobile telphone network in Hungary is the fastest growing in Eastern Europe. So far Ericsson has supplied all the vital equipment for the network.

With a weight of only 200 grams the EH 237 is the market's smallest pocket phone. The length is 130 millimeters.

New pocket phone approved

The next generation pocket phones from Ericsson are here. In England model EH 237, envisaged for the ETACS system, has been approved by the authorities.

It is so far the smallest pocket phone launched – 130 mm. high and only 200 grams in weight.

The new phone will initially be launched in a limited number of markets, but the intention is that by the fall subscribers in all countries with the ETACS system will be able to buy the new pocket phone.

EH 237 is a very small but powerful phone. Its size is 130-x49x22 mm., weight 200 grams. Talk time is 70 minutes on standard batteries. In development work user friendliness has been prioritized and a large accessory program has also been developed – for car installation, hands-free functions and charging.

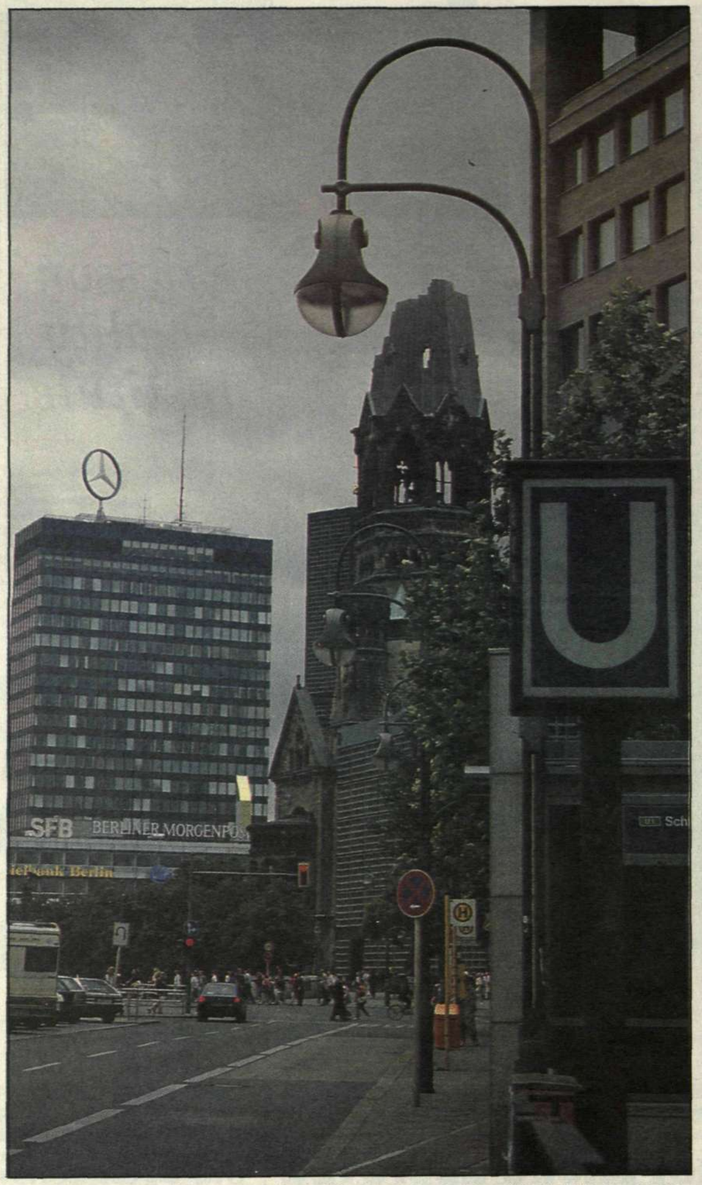
Norwegian personal phone deal

Ericsson A/S in Norway and Norwegian Televerket have signed a collaboration agreement in the area of personal telecommunications (Universal Personal Telecommunication, UPT).

UPT means an entirely new communications form where each person gets increased mobility with the help of a personal telephone number.

This is possible since the tele network automatically seeks out the subscriber, regardless of what telephone – fixed or mobile – he or she is using, and allows the call to be debited to his own subscription. Moreover, the subscriber gets access to a number of new services.

Both Ericsson and Televerket are already engaged for some time now in development in this area. The now signed collaboration agreement means that Norway will be a pacesetter country when it comes to UPT. Ericsson and Televerket will test services that Ericsson developed and together will drive a pilot project.



Berlin, capitol of the re-united Germany, is on of the strongest areas of growth in the field of mobile telecommunications in Germany. Photo: Thord Andersson

German GSM Network lures new customers

"Germany – a giant market just waiting." This was the headline here in Contact two years ago when Ericsson won the strategically important GSM order for Mannesmann Mobilfunk's D2 network. Today the D2 is the world's largest GSM system and a few weeks ago Ericsson won an addition to the contract.

The order, which covers infrastructure, services and mobile telephones, is worth about 3.5 billion kronor.

"We are happy and proud over having gained the confidence to continue expanding the D2 network. There were long and intensive negotiations, and now it feels good that everything is concluded," says Hans Uhlemann, president of Ericsson Mobilfunk.

The order is the largest single order for mobile telephone equipment that Ericsson has received up to now.

The extension stretches over two years. Besides heightened function level, it also involves an increase in the number of sites, as well as an expansion of existing sites. (A site is the place where radio base stations or exchanges with respective relevant equipment is located.)

"Enormous potential"

"The German market has enormous potential, and the D2 network will continue to grow throughout the '90s. So far growth has been greater than expected," says Tor Marklund, marketing manager at Ericsson Mobilfunk.

"How much and to what extent the system will expand is still a mystery," he adds.

Germany's two GSM systems, D1 with Deutsche Telekom as operator and D2, went into operation at the same time last summer. Today D2 is larger and it has 70 percent of the GSM subscribers in the country.

In telecom circles the D2 network arouses considerable interest, and not a week goes by without study tours from near and far.

For Ericsson the D2 network is the most important GSM reference. Regarding the company's huge commitments in Japan, the Mannesmann assignment has also been a reference.

Kumla factory

A problem that both the D1 and D2 networks have had is with terminals, mobile telephones. Until now it has been difficult to obtain GSM pocket phones in Germany.

The huge order from Mannesmann Mobilfunk also includes a large number of pocket phones. For Ericsson Mobile Communications factory in Kumla this means their largest single order so far. Huge investments in new machines and training of personnel are taking place at the moment.

Already well before, the factory has had delivery commitments to Mannesmann Mobilfunk and now it is continuing to increase volumes.

Competition grows

Since in Germany there are competing mobile operators, different types of subscriber services will become important tools for competition.

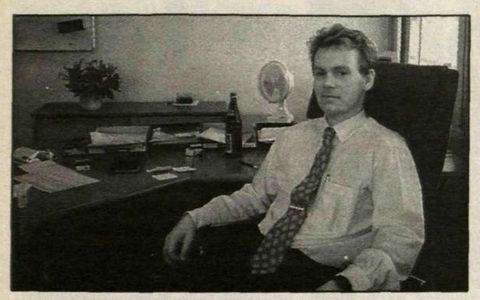
"Operators themselves will adapt systems to customers, that is tailormaking them for different subscribers. For us it is a challenge to introduce attractive functions as tools for operators," says Tor.

Today Ericsson is sole supplier of base stations for Mannesmann Mobilfunk.When there are small and easily installed base stations for small-cell applications available, competition will increase.

For Ericsson it is important to come up with mini base stations at the right time so as not to lose markets. Should it manage to do so, then there should be continued success on the German mobile telephony market.

Gunilla Tamm

Hans Uhleman, president at Ericsson Mobilfunk, is proud that Ericsson got the confidence to expand the D2-network.



Tor Marklund, marceting director at Ericsson Mobilfunk sees a great challenge in the task to develop new services for the GSM-network.

RFD in Düsseldorf

Ericsson Mobilfunk, RFD, with head offices in Düsseldorf, began operations in the fall of 1990. In less than five months a complete organization with regional offices, was built up.

Today the company has 328 employees.

"We have been installation-heavy but we are broadening out now and are strengthening our support and post-marketing functions," says Hans Uhlemann, president of RFD.

No personnel increase will be needed for the huge Mannesmann assignment. However, some restructuring in the organization will take place.

At RFD they have driven a very successful pilot project within the change work in Business Area Radio Communications. This has led to significantly shorter lead times and more effective work.

"With our improved working mewthods it is easier for us to live up to the high demands Mannesmann places on us as supplier," says Hans.

EMX executives and PageNet VP signs contract. Standing from left to righ: EMPX Radio Products Division, Rusty Lavelle, Director, Paul McGahen, Product Marketing Manager, Paul Pryibil, U.S. Sales Manager. Sitting from left to right: Ron Turner, PageNets VP, Systems and Technologi and Leif Holm, EMX president.

PageNet buys new paging transmitters

The new Compact 925, a 900 MHz digital paging transmitter, developed by Ericsson Magnetic, is finding success in the USA. Ericsson Messaging Systems Inc, MXEMX, is responsible for marketing this product in North and South America, and has recently sold large orders to three leading USA paging carriers; PageNet, McCaw Paging and Mobile Comm.

PageNet has resently purchased a large number of Compact 925 transmitters.

The contract is valued at approximately 4 million US dollars. PageNet is the largest paging carrier in the USA, providing paging service in 67 US markets in 22 states and Washington DC.

PageNet is one of the few paging carriers that uses the same frequency in each of its markets, thus affording it the capability to build regional networks fairly easily; PageNet currently runs five regional networks.

The new transmitters were purchased for expansion of PageNet's operations.

"Our decision was based on the technology, efficiencies, and maintenance advantages provided", stated Ronald J Turner, PageNets's VP, Systems and Technology.

"In addition, the compact size will reduce operating costs, such as site fees, installation expenses and maintenance overhead."

In addition, Ericsson Messaging Systems Inc. has received contracts from McCaw (the largest cellular carrier in the U.S.) and from MobileComm, another leading US paging carrier.

The new compact transmitters are manufactured by Ericsson Magnetic in Sweden and are available in two versions. The 900 Series is for 900 MHz applications and is marketed by EMX. The 9000 Series is marketed by Ericsson Magnetic and serves ERMES and POSCAG VHF applications.

Ericsson introduced the Compact 925 (900 Series) in 1992. The unit is highly efficient (1.100 Watt input for 250 Watt RF output) and offers a compact size of just 10,4 inches high by 19 inces wide, and weighs just 56 pounds. Other features include 120 dynamically selectable channels control network interface and itnernal AO power supply.

EMX designs, develops and manufactures MXE, the new multimedia messaging platform.

Laying the Cornerstone (left to right): Hans Kolbe, President of FUBA Hans Kolbe & Co.; Jan Stenberg, Dr Peter Fischer, Minister for economic affairs on the state of Lower Saxony; Kurt Machens, Mayor of the City of Hildesheim and Günther Begemann, Managing Director of Ericsson FUBA Telecom GmbH.

Cornerstone Ceremony at Ericsson FUBA Telecom

On May 6, Ericsson FUBA Telecom GmbH (FTD) laid the foundation stone for their new premises in Hildesheim. In the first phase FTD will create office space for 250 employees.

Ericsson FUBA Telecom GmbH is a German joint venture company founded early in 1992 by Ericsson Telecom AB and FUBA Hans Kolbe & Co. The buildings now being built, will accomodate the company's marketing, design and production departments. Total floor space is 5,000 sqm. Construction work was started in spring.

The completion of the buildings is scheduled for November 1993. All employees will have moved to the new premises by the end of this year. At present, FTD has 175 employees working at four different locations. Concentrating the activities will considerably contribute to improving FTD's effectivity.

Consolidating presence

On the occasion of the corner stone ceremony, Jan Stenberg of the corporate executive committee pointed out a new strategic goal: Consolidating Ericsson's presence on the German market consistently and on a broad basis. Ericsson's subsidiaries in Germany managed to stabilize and improve their position in mobile and private communications, network engineering and several other areas. The development of the business operations was very encouraging.

FUBA Hans Kolbe & Co. is a renowned German manufacturer of telecommunications equipment and printed circuit boards. The company turned out to be an ideal partner for Ericsson. The joint venture company is now able to develop on the basis of a unique know-how: more than 100 years experience from global activities and over 40 years especially on the German market.

Transmission products

The solutions offered by FTD are based on a wide range of digital transmission products and systems. Particular emphasis is placed on PDH and SDH systems, digital cross-connect equipment and access products. FTD can already present a successful cooperation with Deutsche Bundespost Telekom – one of the most important and innovative networks operators in the world – within the Flexnode project, wich covers the delivery of digital cross-connect systems. At present, FTD's design work focusses on systems of the ETNA family.

The buildings now under construction will have a total floor space of 5,000 sqm. 250 employees will work here.

The factory in Emmen was opened three years ago. More than 400 employees here manufacture paging systems.

One of the latest products "Diricall." A security system for personnel working on their own or in health care.

All goods handling is done automatically. To gather up material for an order bar code handling is used, which registers and later follows the entire process through to manufacturing. Above, Trea Kuipers-Heving gathers up material for an order.

Emmen aims for the top

For many years now Ericsson has been market leader for paging systems. Ericsson Radio Systems BV, ERH, has its head office and factory in Emmen, Holland. Here they manufacture pagers for export throughout the world.

Soon it will have been three years since the Emmen factory was opened. More than 400 people work there with research, development and manufacture of local paging systems.

Business Unit Paging, RPAG, has a total of about 1,000 employees. This includes marketing staff in ERH's subsidiaries in Belgium, Holland, France and Germany, as well as personnel who in other Ericsson companies market and handle paging products, as for example Ericsson Paging in Sweden. A large part of ERH's success lies precisely in the broad and international distribution network. There are also a number of independent agents that sell ERH's products.

Ninety percent of all manufacture in Emmen goes to export. ERH's largest export market is France. Some 24 percent of all manufacture went there during 1991. After that came Switzerland (the world's most paging-density country) and Germany. Holland ranks fourth.

Specific demands

The factory is equipped with modern technology in all aspects of manufacture. Directly after arrival control the goods is warehoused with the help of automatic computer-direction.

All manufacture follows directly from order. There is no warehouse of finished products, since every order has specific demands and frequency bands can vary between 800 different wave lengths.

Flexitime

For the local paging systems ERH is responsible for everything from resaerch, system design, software, customer integrated circuits, mechanics for manufacture of operator panels and receivers.

Moreover, RPAG markets its own pager for nationwide paging. This is now being manufactured by Seiko, but will eventually be manufactured in Emmen.

Since 1992 they have also been manufacturing the new security system for personnel, Diricall. The manufacture of cordless telephones, Freeset, that they have previously been responsible for, will be moved to the Kumla factory in Sweden.

Investment in personnel is large. Flexi time and job rotation are applied. In direct connection with the factory there are opportunities for a number of recreational activities. There is the factory's own internal newspaper, and besides there are wall screens that indicate week by week quality charts, sickness absenteeism and how different departments are doing in ISO-9000 work.

In November it will be time for the factory in Emmen to get ISO certification.

Helena Andersson

"We offer customers complete systems"

Elevators at Gatwick Airport in England are guided by this system. More and more industries are choosing it for monitoring robots and assembly lines. This refers to paging systems, developed, manufactured and marketed by Ericsson Radio Systems BV in Holland.

Local paging systems (on-site paging) has had over several decades a strong position in the health-care sectors. In hospitals, nursing homes for the aged, psychiatric institutions and other places paging systems today very often serve a clear and sometimes life-saving function. But the leading market sector for local paging systems now is industry.

"With today's access to tailor-made systems, coupling possibilites have become almost unending," says Geritt Koning, head of business unit RPAG (Radio Paging) at Emmen, northeast Holland.

Three million subscribers

Today's local paging systems give rise to a host of other electronic and mechanical equipment. Paging systems are installed often coupled to for example alarm systems or directional systems for elevators or robots in industry.

When an alarm goes off or a machine stops an enquiry message is directly sent on to a pager with for example a guard or a supervisor.

Switzerland is the country with the most users of local pagers, 75 per 1,000 employees. Then come the Scandinavian countries. The world total is more than three million subscribers for local paging systems.

The three main differences between a local paging system and a nationwide system are coverage, price and coupling time.

In a local paging system a subscription is signed for and you pay for every time the pager is used. In a nationwide system it also takes a longer time to connect the message.

Market swings

Over the years message forms in local paging have developed from tone signals to numerics for cipher messaging and alpha numeric for letter messaging on receiver displays.

"The next step has been one-way communication where you can send spoken messages to a receiver and with the latest technology there is also the possibility for two-way communication," says Gerrit.

The market for local paging systems has, just like the economic situation in many countries, worsened in recent years.

"Companies are hesitant today with large investments in communications equipment. Another problem is that more and more products are overlapping in the area of use. It makes it difficult for the customer to choose, and more and more product areas are competing for the same customer.

That also applies to finding new areas of utilization and tailor-made solutions. What ERH is mostly putting large investments in today are Diricall and PABX products.

For collaboration

Diricall is a security system for personnel that was introduced in 1992 and that has become a tremendous success. The system can very simply be integrated with another paging equipment from ERH and has a unique system for localizing alarms.

"We directed ourselves to industry, security agencies and other areas where security is important. However, interest from the health-care sector has been greater than expected. We thought that Diricall would be seen as clumsy in comparison with other pagers. It is mainly the localizing function that explains why the pager is a bit larger and why it has to have an antenna.

Geritt Koning is head of Ericsson Radio Systems BV in Emmen, Holland.

A majority of local paging systems that were sold in 1992 were coupled to a PABX (business switch).

"We collaborate with Ericsson Business Network, which developed the business switch, on integrating paging functions from the start. This way we have a complete system to offer the customer, which is easy to propose. Installations are also simple."

Helena Andersson

Mobile telephony – an eldorado in Latin America

Helene Ujueta, marketing manager for Latin America at business unit RMOA, ERA.

The rapid expansion of mobile telephony continues in Latin America.

In Mexico alone extension of the existing AMPS system will provide capacity for more than 300,000 subscribers at the end of 1993 – the region's largest mobile telephone network.

Ericsson's success in mobile telephony in Latin America continues. Despite tough competition from several American and Canadian suppliers Ericsson has improved its market share, which today is around 45 percent.

Of the region's 700,000 mobile telephone subscribers, some 315,000 are connected to Ericsson's system.

Mexico is the Latin American country that has come furthest in the buildup of nationwide mobile telephone networks. The system, which like other systems in Latin America is of the American AMPS standard, will after the latest signed order in May double in size before the end of the year. Coverage is for Mexico's 60 largest cities. Installation is being handled by the local Teleindustria Ericsson, TIM, in Mexico.

Success in Argentina

On March 9 Argentina put its first Ericsson system into operation. It was a finished system, which was handed over to the Argentine customer, operator consortium Movistar.

"This system has had tremendous success and has clearly surpassed expectations. Since the start of March an average of 1,000 new subscribers a week have been linked to the system, says Helene Ujueta, responsible for marketing for AMPS in Latin America, ERA, Kista.

Bearing in mind that the network has a capacity for only 12,500 subscribers, it will be fully utilized soon.

A contract for expanding the system to about 30,000 subscribers is already drawn up and there are plans for later in the year to increase that further.

The network covers the capital Buenos Aires, where there are two operators today. Licenses for other parts of the country will initially be shared by two operators, one for the south and one for the north. They have a headstart of two years before state-owned companies come in and compete.

"Argentina will definitely become one of the five most important markets for mobile telephony in Latin America," Helene predicts.

Mexico is one of the countries that have come furthest with nationwide mobile telephone system. It covers no fewer than 60 cities and by year's end had a capacity for 300,000 subscribers.

In Brazil the first contract was signed in May last year with some of the country's state-owned tele administrations. In all Ericsson has contracts for nine smaller systems in different regions of the country and has offers pending for a further ten.

Installations interrupted

"Dispute over the Sao Paolo contract still goes on. NEC has been forced to interrupt installations and we are waiting for a court ruling."

In Ecuador license apportioning is on the way and here we reckon to have a system in operation by the fall of 1993.

Colombia is also getting ready for mobile telephony. The country will be divided into three regions: east, west and the north coast, each with two operators. Licenses are expected to be handed out in February 1994, and if everything goes well the first system will be in operation by the first half of 1994.

Digital in Puerto Rico

Venezuela already had its first mobile telephone system in operation back in 1987, in its capital, Caracas. Growth was very minor but now, thanks to the new owner Movilnet, it has taken off again.

During 1992 order bookings amounted to about 290,000 kronor (including local services) consisting of expansion of the Caracas system as well as smaller systems in Valencia, Maracaibo, Barquisemeto and Puerto la Cruz.

For 1993 Movilnet reckons with continued large investments in mobile telephone equipment for expanding the existing system and in this way catch up with the one-year headstart that the competing private Telcel has.

A few years ago most people were already convinced that Mexico would be the first out with a digital system. Now instead Puerto Rico is expected to be the first Latin American territory to order a digital AMPS system. The offer is out and response is expected any time now.

"Plans call for Puerto Rico to have a digital system in operation by the end of the year," says Helene Ujueta.

Text: Helena Andersson
Photos: Björn Seger

AMPS – not only in America

The original American AMPS standard for analog and digital mobile telephone systems is not only applicable to the North and South American continents.

Ericsson has sold mobile telephone networks of the AMPS standard throughout the world. The following countries have mobile telephone networks of the AMPS standard:

Argentina, Australia, Brazil, Curacao, Hongkong, Canada, Mexico, Myanmar, New Zealand, Pakistan, Puerto Rico, Sri Lanka, Taiwan, Venezuela, Vietnam as well as 21 U.S. states.

In certain countries, like the U.S., Canada and New Zealand for example, they have the analog system complemented with the digital AMPS standard. In Hongkong the entire system was digital as of October 1992.

Worldwide litterature service

Are you in search of a special doctoral paper from an American university or some other report from a Japanese institute? Do you want to have a subscription or an issue that you want to monitor yourself? Then contact Literature Service.

Literature Service is affiliated organizationally with Ericsson Telecom but renders service in the form of loans, purchases and subscriptions for the group worldwide as far as trade publications are concerned. A team of purchasers consisting of five persons work in the unit.

At The Ericsson Corporation in New York, moreover, the team has a colleague that works as agent for purchases of American publications and journals. Every year the unit purchases some 3,000 publications. Hundreds of copies of articles are distributed and a total of 1,600 different publication titles are ordered and dealt with.

"We negotiate our own discount agreements and in addition we use Ericsson's general membership discounts. We make sure that we receive collective invoices rather than costly individual ones, that deleivery times are ample and that handling time with us is as short as possible," says Christina Falcon of the unit. She adds:

"Thanks to our colleague in New York we can buy American publications at domestic prices and, when necessary, get the publications in 48 hours via Federal Express. It is our major contacts and purchasing network around the world that gives us the conditions for good supply service and right price. All literature that is purchased automatically becomes available in a database.

"Our large contact network means that a journal subscription from other suppliers abroad does not pose a problem," says Helena Subasi.

"Moreover, we offer services with reference works of various types, for example encyclopedias, statistica, CCITT recommendations and many frequent trade publications," adds Birgit Gustafsson in the lending sector.

For more information, contact Literature Service, HF/ETX/TK/I, at the head office in Stockholm.

Tel: +46 8 719 3431, memoid ETXBIBL, fax +46 9 719 4610.

Entire systems in small silicon chips

Every time Ericsson develops "the world's smallest mobile telephone" they work within the small confines of what is technologically possible. A key concept is ASICs, specially designed circuits. With ASIC technology an entire system can now be housed in millimeter-sized silicon chips, and the long-term goal is that by the year 2000 everything that is needed for a mobile phone will be concentrated on a single chip. The aim is naturally to reduce the size and cost of phones and radio base stations, but also to drastically cut the time taken to design a new product.

ASIC stands for Application Specific Integrated Circuit, that is to say circuits tailor-made for specific purposes. In effect there are hundreds of thousands of components built into a small silicon chip, which goes into a mobile phone, a radio base station or a terminal for transfer of mobile data.

At Business Area Radio Communications, ASICs is a necessity. You can never purchase finished components or standard blocks and build with the same compressed effectiveness and low current consumption. In order to increase the performance of mobile phones, while at the same time reducing them in size, you need to have tailor-made ASICs.

Competition is extremely sharp in mobile communications. Telephones have to be easy to use, they have to be cheaper and batteries have to last long. Base stations have to take up less space, which means low rent, and they must have low operating costs.

New work methods

A new approach to design is growing with the presence of ASICs. There is a need for people with broad experience and an overview of the entire construction chain, from the total system to jobs on the component level.

These experts, unfortunately, are not easy to come by. That's why it is necessary to utilize to the maximum both designs and designers, that is to say people who know the technology and the solutions that result from it. Moreover, there is a need for more intimate collaboration among all of those working with design at various levels.

At the development unit Core Unit Radio Systems and Technology (RCUR) there is collective competence of some 20 persons, who support the various business units with ASIC work. Advanced ASIC knowledge will be found and is already found out in the business units. RCUR "looks over the shoulders," take part in the design follow-through and can make recommendations on applicable tools or new methods.

Directly on chip

The technical solution, which permits the miniaturizing contraction of components, is that you "build" directly onto a chip instead of a printed circuit board. Incredibly enough, several thousand components can be made to fit on a single chip, which is no larger than about one by one millimeter.

That an ASIC can contain millions of transistors (or hundreds of thousands of gates) is, of course, inconceivable if one does not know that transistors are parts of the very silicon disk. With refined methods one can treat the chips – perhaps not quite as precisely as on the atom level but far down into the structure of the material – so that they acquire conductive properties, form gates that can be added to or subtracted from, which later on with films of metal can be linked together according to the desired pattern.

Design of ASIC is achieved with a computer screen, where components on a large scale – fully visible to the naked eye – can be inserted. In general, this can be done manually, detail for detail, and automatically, with the help of a computer program that provides solutions for the desired functions. Later when the design is "proven" and approved in a simulation program, it is transferred with the help of advanced optical means into reality on the tiny chip.

ASIC technology and the CAD tool that are used in the design have undergone enormous development in the last 10-12 years. More and more is being integrated onto the tiny silicon chip, about a thousand times more today than ten years ago, or to put it in figures, a million components compared with about a thousand. An entire system can now be put on a chip.

In line with the fact that technology is being developed and that this makes it possible to sink costs, it is gradually taking over more and more the traditionally built printed circuit board.

Since ERA began using ASICs in its produts at the end of the '70s, they have built more than 200 in BR. The complexity for pure digital circuits was initially 200-500 gates (a gate consists of four transistors) per chip, which were 25-50 square millimeters large. Today, the complexity is 50,000-100,000 gates per chip, with a chip size of 25-150 square millimeters.

In later years BR also began to design its own analog HF circuits. Complexity for these is about 200-2,000 components per chip, on a size of 2-10 square millimeters. This is very advanced.

Primitive beginning

The earliest design methods were quite primitive and designers' productivity was low compared with today's. For example, they lacked an effective method for developing test patterns so that

Base stations, which today are large cabinets, could in future be as small asa pocket phone.

they could sort out bad circuits among semiconductor suppliers.

Developing such a test pattern could take just as long as building the circuit itself, and it was done by test engineers who had little knowledge of how the circuit functioned.

Now the development of test patterns is part of the design work itself and is supported by automatic accessories.

In the old construction methods they used time-consuming manual schematic drawings for circuit design instead of simulating verified construction in general through breadboarding, that is to say they built up designs with the help of standard components.

For digital circuit construction today, to a large extent they use automatic generating of circuits from clearly descriptive high-level language such as VHDL (VHSIC Hardware Description Language). Such automation for analog circuits is still far into the future.

In the past ten years at ERA they have built about 15 ASICs a year, but performance and complexity per ASIC has increased tremendously.

Higher goal

BR now has passed "integration thinking on the component level," that is to say they are using ASIC technology to put together existing standard components on one and the same chip with the aim of reducing the size of the sets and sinking manufacturing costs of products.

The goal now is to use the technology's other advantages when it comes to developing better products in shorter time.

Nevertheless, this places heavy demand on methods, tools and productivity. Designers must also be aware of as many of the design disciplines as possible that will allow them to make correct variations.

The ideal is that at least one member of the construction team should have knowledge that stretches from the highest ASIC specifications or system level right down to complete layout

Shorter times

The demand for shorter times for developing products also means that construction productivity among ASIC designers must increase drastically.

This could be achieved with, among other things, improved methods and tools for construction as well as with automating as many time-consuming tasks as possible. Increased complexity and automating means, however, increased need for training and support concerning methods and tools used.

Hence it is necessary to utilize the already trained and experienced ASIC designers. An experienced designer is reckoned to be three times more effective in productivity than a beginner. Beginners' first ASIC rarely is successful.

When it comes to digital signal handling BR has developed strength in being able to "pin down algorithms" (mathematical formulas that describe how the job will be done) and choosing radical architectures so that the result is more competitive.

Habitual experts test various algorithms in order to maximally utilize the minimum chip space or to develop, for example, the best possible sound in a mobile phone. (However, to determine which sound is best you have to go by the human ear.

Pinning down algorithms is also an area that calls for engineers with specific knowledge in all the design disciplines down to the finished ASIC.

Antenna on one leg

The future is marked by visions, dream wishes. To be able to mix different technologies on a single chip. RF (Radio Frequency), analog as well as digital. Something that is not easy to solve and yet at the same time a challenge for those who really want to work with complex problems and state-of-the-art technology.

A chip with an antenna on one leg is one of the ideas for a fully accomplished solution. Both for mobile phones and radio base stations, which are both expected to be about equally small in due course.

Nevertheless, it's till some time away. When more and more functions are on the same chip, the demand for collective simulation of functions will increase. When everything is truly placed on the chip, then it is too late to test and see whether it functions. You have to verify design and construction in advance with a computer.

Prioritizing

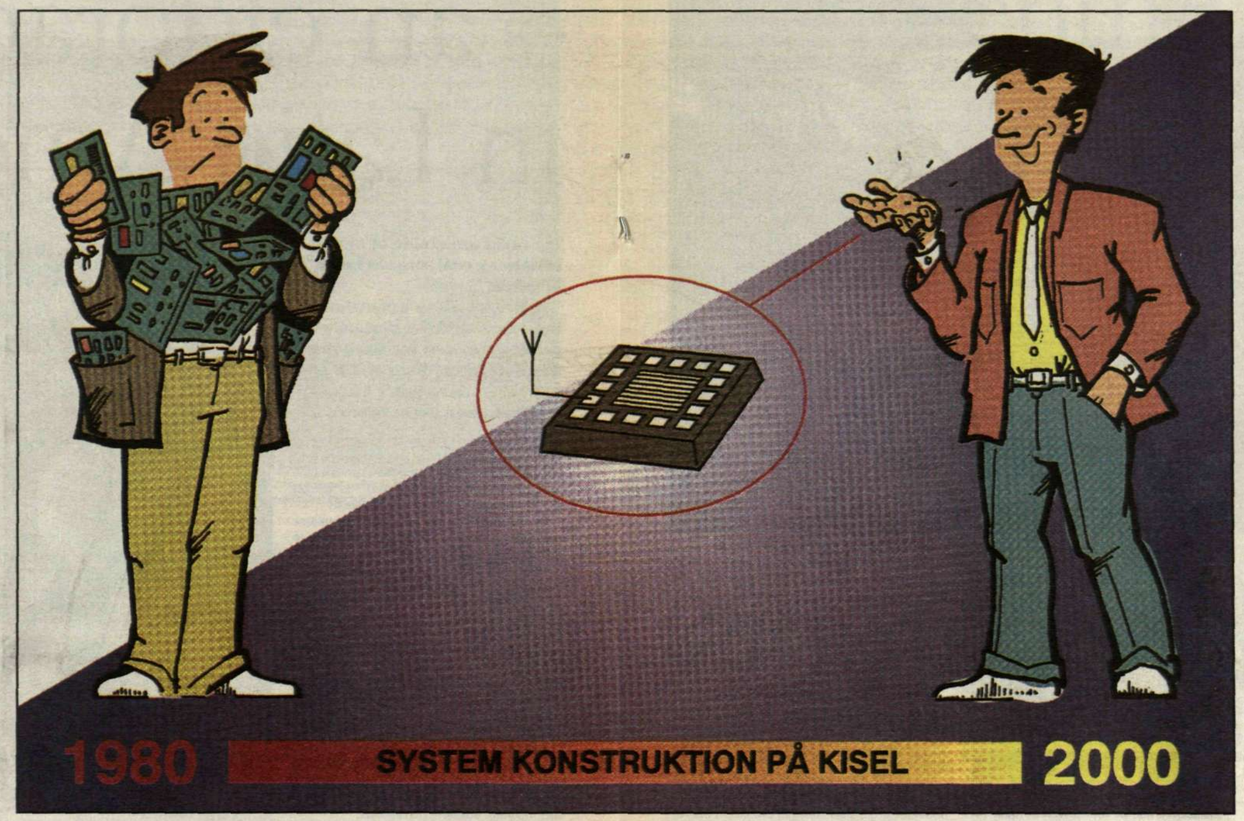
An obvious question at the end of it all is how long is it meaningful to integrate? To what extent should the level of modularizing be to warrant integrating?

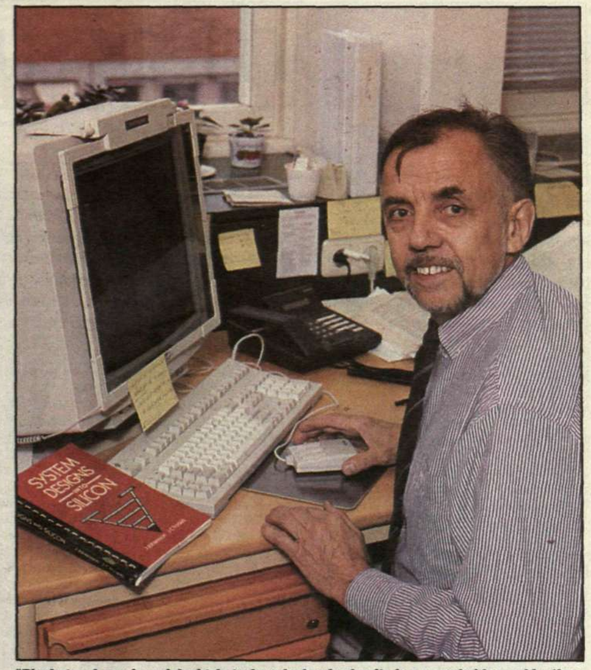
With modularizing you can get larger units, modules, which can easily be reused and as such can save time. Reuse of finished units, which can be picked up from the library, permits advantages such as more flexibility when it comes to tailor-made systems for different customers. On the other hand, integrating is determined by factors such as low cost, small dimensions, low effect utilization, high performance and availability.

As a system house BR must invest its limited engineer resources in systems work at the highest levels, since that is where it has the best apportioning.

An engineer who sits down for a month pinning down algorithms may succeed in halving a chip area or effect utilization while just as much work on layout or cell level is hardly noted in the system. This is not to say that work on the lower levels can be diminished.

Text written with BR unit RCUR





"Playing rock music and designing microelectronic circuits is a remarkable combination for me," says Jan Johansson, a well-known profile at ERA and perhaps Sweden's best ASIC designer.

ASIC book for all

After designing more than 200 circuits in ten years, Jan Johansson thought it was about time to gather up his experiences and put the subject into literary form. Together with JC Forskitt from Plessey, he wrote "Systems Design Into Silicon."

The book, which is in English, is now in its first printing. It will be used in the entire group and has been distributed to all those concerned, as well as to subsidiaries abroad.

It is written in a general tone, should be valid for some years and a new chapter, "Systems," is ready to be included in the next edition.

"I have tried to spread the word on ASICs for years, but now for the first time, with the book out, the ideas are beginning to take root, even outside BR," says Jan Johansson.

"We complement each other, Forskitt and I. He has more of the pedagogical touch and I have a more technical side."

Anyone can read it

Just about anybody can read the book. Every chapter begins simple and then progressively goes into more detail. The focus is on today's methods, but future trends are also analyzed.

Per Bengtsson, now information director for BR but with experience from Ericsson's transmission division and at one time head of the development department at SRA, has read the book:

"Writing a review of a book that deals with designing of systems with silicon - one of the most complex substances around - written by one of the most experienced designers in the field, Jan Johansson at ERA, cannot realistically be done from the outside by someone who does not have the same level of knowledge as the book portrays.

The book was written for a number of categories that are engaged in or that have to make decisions on designing with silicon, namely:

- Managers, decision-makers who have to understand the different stages of the process and which decisons have to be made at different points in the decison-making process.
- Project leaders, as a support in leading such development projects that involve "Systems on silicon."
- New employees, who have to learn what has to be done.

The book is pedagogically drawn up. In the first part there is historical background, development trends and results. This part also includes terms and concepts.

For those who do not require detailed knowledge, the chapters that follow describe design processes and their decision stages. Here there is also a great deal about interfacing with silicon suppliers, a valuable section for decision makers who have to decide on suppliers.

The other sections describe the demands of designers and such things as necessary for judgement of project risk, something that is somewhat unusual in designer handbooks, which usually confine themselves to the technical processes.

Finally, there is the more detailed description of design processes, methods and tools. The descriptions are very apt, concerning existing tools of specific make.

A lot of information

A lot of the information that is laid out is very extensive. In order to fit all in a manageable book the authors have in many cases chosen to formulate it with lists and points.

It makes it easy for confirming checklists – good for project leaders and managers – but of course this does not imply any quick reading.

The book has the nature of a handbook, a reference work and is thorough as such.

Jan Johansson himself advises that it is best to read the book once in order to know where to locate subject matter and then use it as a reference work.

This book took a couple of years to write, parallel with regular work. But that should not be alarming. A sequel is perhaps on the way. A book about how you work on a higher level.

"I have learned a lot about how one writes a book, and if I write another one it will go a lot faster," says Jan Johansson. "Then I would concentrate on writing and not divide my time doing too many other things."

Lars Cederquist

Core Unit Radio Systems and Technology is a core unit in ERA, which develops future base technology in cordless communications for Ericsson.

RCUR also provides expertise in areas such as digital radio, microelectronic design and construction and international standardization.

Developing future technology

The unit also works with patent activities and maintains a scientific reference library and information center in Kista.

In the area of customer-specific circuits RCUR's role is to support with ASIC competence and methods in order to design and construct competitive products.

This it does by:

- Training designers in ASIC design so that they can deal with problems that arise in design of complex circuits.
- Supporting ASIC designers during the design work itself.
- Design reviews for ASIC.
- Being leading experts in processes, suppliers, methods and tools for ASIC. This is accomplished through technology monitoring such as visits to suppliers and research institutes in relevant areas as well as participating in business projects.
- Driving its own research and development in design methods.

The advantages of ASICs are above all:

- Increased performance
- Increased accessibilitiy
- Reduced set size
- Reduced effect utilization
- Reduced costs
- Increased control over design
- Reduced risc of plagiation
- Increased testability

All the advantages of ASICs

The last point of increased testability can be explained, somewhat paradoxically:

Since it is not possible to test a finished ASIC, which must be perfect the first time, it has to be tested instead in advance in a simulator.

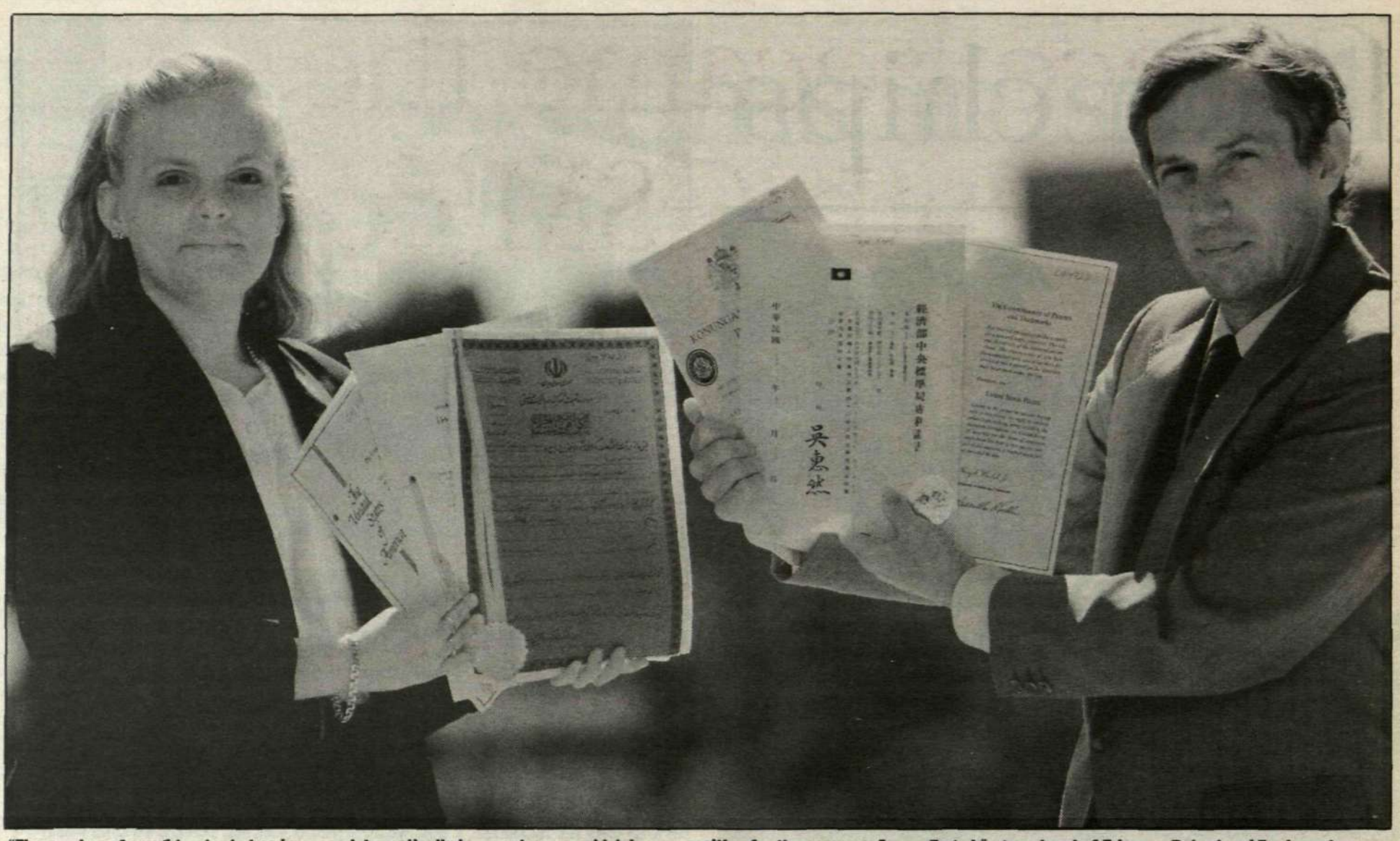
The simulation must be introduced at the highest possible system level and then used at all subsequent hierarchical levels in the design work.

This way verification goes much faster, you save time and you get right the first time.

But of course this calls for very solid and stringent design methods.

The point that it is difficult for competitors to plagiarize the circuits is proved:

Consider that millions of transistors are linked together according to a schema that is so good that it is totally impossible to copy.



"The number of sought patents has increased dramatically in recent years, which is very positive for the company," says Tage Lövgren, head of Ericsson Patent and Trademark Department. Here together with Carina Malm, secretary of the department.

New ideas for patents

"The more good patents Ericsson has, the better the company can compete. That's why indifference and other hindrances among colleagues must cease, so that we can share in all the inventions that deserve to be patented."

So says Tage Lövgren, head of Ericsson Patent and Trademark Department.

Having a lot of good patents means tremendous advantages for a company, both from the point of view of technological design work and economic gains.

"Patents are an important means of competition. Hence it is important that Ericsson be able to seek patents for the inventions that are achieved throughout the company," says Tage Lövgren.

Using other people's patents can be very costly. In order to do so a little less expensively there is lively trade exchange in patents among companies throughout the world. So the more good patents you have, the easier it is for you to negotiate access to others' patents.

Few patents in Ericsson

There is a total of about 7,000 patents in Ericsson, which is relatively few in comparison with many other large telecom companies. No company is willing to grant patent rights for free. If you do not have enough good patents to trade, very often it can be very costly to obtain use of patents that Ericsson products demand. It can be even more expensive if you are obliged to redesign simply because someone else's patent cannot be utilized.

"The number of patents applied for has increased dramatically in recent years, which is very positive for the company," says Tage .

Public Telecommunications is the largest business area in the group. That's why most of Ericsson's patents come from that area. But most of the patents that have been applied for in recent years are in radio communications.

Protect technology

"We also protect technology development itself through patents," says Carina Malm, secretary at the department.

Today designers are the professional group that submits the most registrations for inventions to the unit. However, other groups should be better represented.

"We are seeing more patent applications from the marketing side. It is they who know early on what the customer wants," says Tage .

"You do not have to be a technology specialist or an invention wizard to come up with ideas for new services and functions that can be of use to customers in the future. Such patents can be very valuable for Ericsson in the future," Carina Malm adds.

Indifference reigns

There are several reasons to explain why Ericsson has relatively few patents:

"A major hindrance to Ericsson obtaining more patents is that patent work is not planned as a natural part of development and design work," says Tage. Another problem is the existing indifference.

"People dismiss their ideas and inventions and feel that 'this is certainly nothing worth seeking a patent for."

"Because of this we do not hear of many inventions in time and Ericsson misses out on many good patents. In order to avoid this, application after inventing and registration of it should be an obvious process in every project plan," Carina Malm adds.

But what can I do to help Ericsson apply for more patents?

"When you hit upon something new just fill out an application form for registration, which is found in your workplace or with the business area's patent contact person," says Tage.

"But include also a description, preferably in English, with simple diagrams or flow schemes, so that it will be easier to comprehend. The form as well as the description should then be forwarded to us or the patent contact person.

Contents studied

When an application comes in to the Patent and Trademark Department it is thoroughly studied. Among other things the invention must contain something new and should not have appeared in, for example, any publication, exhibition display or via information to a customer without binding secrecy.

Moreover, the invention should in some way distinguish itself considerably from everything that was previously known outside of Ericsson. If these criteria are met then you can proceed with getting a patent.

If a patent for an invention is judged worthy for Ericsson a patent application is written up by a patent engineer at Ericsson or by an outside patent office.

After that the application is submitted, in most cases to the patent and registration office in Sweden, but sometimes to the patent office in the U.S. The patent office studies the application and controls, among other things, that no similar discovery has been patented anywhere in the world.

This process takes time. The patent and registration office's study and subsequent work with an application takes on average some three years. Only then is the patent ready. When you do get your patent it is valid for 20 years from the date of registration. The life of the patent varies in different countries.

Money to gain

Those who submit an application do not go unrewarded.

"If you succed in getting a patent for your invention and it is used by Ericsson or deemed useful at some point for the company, you get 5,000 kronor," says Tage Lövgren.

This sum is awarded even if no patent is sought. When and if a patent is awarded, an additional 10,000 kronor is granted. If thereafter a new patent for the same invention is sought in other countries, you get 600 kronor per country.

"So get out there and send in your application to us. This way both you and the company can benefit," Tage Lövgren exhorts.

Text: Anette Johansson
Photo: Magnus Torle

Patent-seeker André

Tore André works as a specialist in business unit Local Switching Systems at Ericsson Telecom. In his daily work he has found many new solutions for a number of problems. Solutions that he has registered as inventions.

"I work mainly with signal handling and it is chiefly in this area that there has been a lot of discoveries.

"I submitted my first registration in 1988 and I am now up to eight. Most of these are now approved patents or are awaiting approval at the Patent and Registration Office.

The latest patent that Ericsson received through Tore André is for a device for adaption in a calculation unit. This is an invention that Tore André, together with Per-Olof Sjöberg at business unit Transport Network Systems at Ericsson Telecom, developed a couple of years ago.

Other patents, associated with Tore André, are, among others, parts of signal processors and digital filters.

Tore André

Greece became the eighteenth GSM country

Plaka, Syntagma and Glifada... Names that many of us link to vacations in Athens. For the GSM team in Greece these are no vacation spots but rather places where Ericsson is currently installing radio base stations for the GSM network that should be ready for handing over to the customer, Panafon, in the summer.

In the old Plaka quarter of Athens, radio base stations were installed for the GSM system. There are no analog mobile telephone systems in Greece.

First system will be digital

"At the beginning of March we started with switch installations and by April 1 we were installing base stations," says Thomas Uhlander. He is the local project manager and he came to Athens in March, planning to stay until the fall.

There is no analog mobile phone network in Greece, which means that Ericsson's digital GSM network is a breakthrough for mobile telephony in the country. It was in the fall that two operators got a license to drive the GSM network in the country. (See box below.)

"The fact that there was no previous mobile phone system made it a bit difficult for our customer Panafon," says Thomas, and he explains:

"Our task is to install and set the system in operation. We do not have a turnkey assignment, that is to deliver a finished system. The customer itself will be responsible for so-called civil work outdoors. This means that Panafon, for example, will take care of the sites where the base stations are being installed and will obtain the building permits for setting up masts and antennas. To set up ordinary antennas there is a general building permit, but there is still no such situation for antennas for mobile telephony. It makes the job more difficult for Panafon.

Young team

The project office is at Ericsson Hellas Telecommunications Equipment (ETG) in Athens.

"We are a team of 12 persons, of which six are locally employed," says Thomas. "We are all young and we are working in a new organization where we have a chance to test new ideas.

"During June, July and August we will most likely need reinforcements for installations," says Alf Bergenstråle, responsible for installation and operation of the radio base stations.

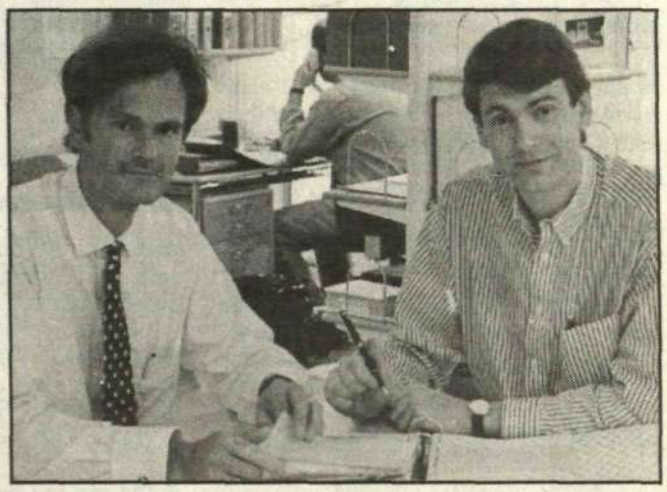
The GSM network will cover Athens and its surroundings. This means there will be radio base stations in the core city, for example in the old quarter Plaka, in Syntagma, the large square around the parliament and in Glifada, Greece's Riviera. Some of the larger islands outside of Athens will also be covered by the network.

At the right time

Alf has worked as operations expert in, among other places, Taiwan and Portugal.

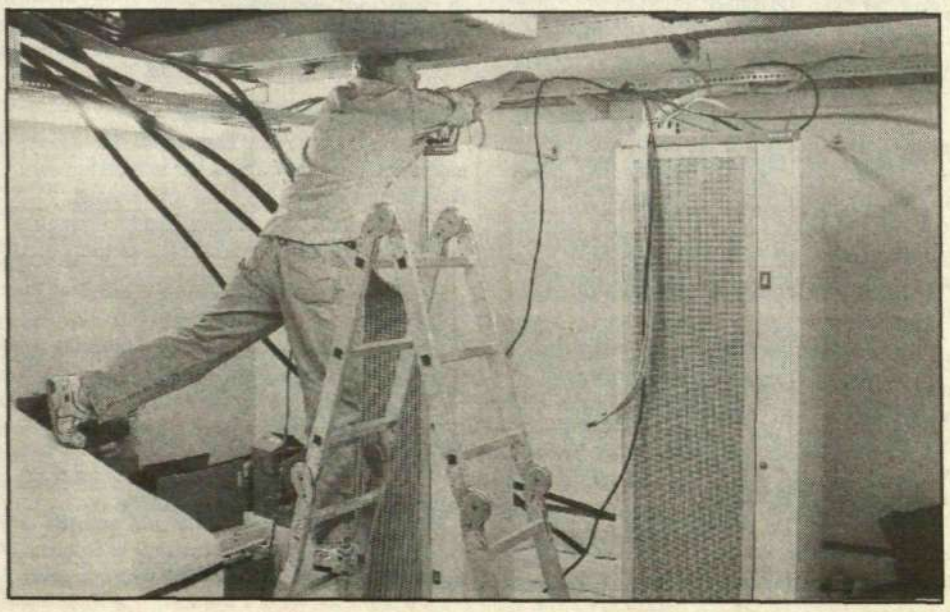
"There has always been problems, with materials arriving late and having to wait," he says. "But this is definitely not the case here. Everything is in place and it arrived in good time. And that feels good. The folks back in Sweden deserve some praise for that."

Text: Gunilla Tamm
Photos: Taina Bergenstråle



Thomas Uhlander, local project manager, together with Mikael Steijer, who is project manager for the Panafon project.

Sometimes it is difficult with space and that means having to be compact. Here Christian Laveryd works with installation.



Two operators in Greece

There are two mobile telephone operators in Greece today. Both will drive the GSNM system and both have chosen Ericsson as supplier.

One of the operators is Stet-Hellas, which is owned by Stet International. Stet Hellas has ordered a finished GSM network from Ericsson Fatme and Italtel.

The installation can be seen as a continuation of the successful collaboration that Ericsson Fatme and Italtel had with the setting up of the analog 900MHz system and digital GSM network in Italy.

Greece's other mobile telephone operator is Panafon. This is a consortium that consists of the Vodafone Group PLC, France Telecom and local telecom manufacturers Intracom and Databank SA in Greece.

Panafon ordered its GSM system from Ericsson Radio Systems.

Telecom in the Future

In this the fifth and final article of our series "Teleworld of the future" we shall present some of the battles that are to be expected in the telecom market. This article sums up the reasoning that lie behind the earlier issues.

As usual, the material was assembled by the unit for strategic network studies, VEKTOR, in Lund, led by Berth Eklund.

Illustration: Kim Gutekunst

Teleworld of the future

In a market with tough competition there is always an appearance of war. This means you have always to be on the alert, to be equipped with all the means that will allow you to conquer terrain from your opponents.

In war there are no moral or ethical principles, sporting chances or thoughts of losing with honor. Here, the name of the game is "victor or vanquished."

He who wants to plan his "battle" well needs strategically to study his opponents and their weaknesses. Through alliances, one can increase one's chances of winning the "war." Hence, successful companies have secured their positions in alliances both horizontally, with complementary players, and vertically, with various suppliers.

In principle, everything goes in war, so long as no one discovers it. Obviously, with this we do not mean to challenge one to illegalities, but it is important to bear in mind that there is no real *omnipotent and objective referee* that sees everything and meters out just punishment to the perpetrators.

Law of the jungle

Competition implies that it is the law of the jungle that rules. The referees, that is the authorities and the courts, rarely come into play.

There are many reasons for this. The foremost explanation is that the authorities do not have access to every bit of information. Hence they cannot discover all the wrongdoings before it is far too late. It is only the most flagrant infractions that are punished, especially those that set the competition mechanisms out of kilter.

Since market economies imply eternal war, there will never be a final winner. Therefore, every "battle" is of utmost significance for those who strive to dominate the market. This striving for dominance is what drives all companies and in principle the most successful strategy is the same for all:

Divide the market into segments – adapt different parts of the company to the various segments – geared to the customer. Or in nicer words: Market segmentation – differentiation – customer adaptation. This tripod is the prerequirement for collective company success.

players	domestic	small and medium-sized companies	large or multinat. companies	intelligence	cordless markets
national pto	X	X	X		X
other pto		X	X		
colonizers	X	X		X	
new players		X		X	X

The market consists of many players and interesting parties that find a common playing field. In previous articles we have pointed out the various forces that move the telemarket.

The most pronounced players on this market are:

- **Old and new operators**
- **Users and consumers**
- **Administrations**
- ***Suppliers and various others***

Economic backbone

In the accompanying diagram we have given a schematic picture of how the market appears, from the traditional operator's viewpoint.

It is the small and medium-sized companies that constitute the backbone of a nation's economy. In most countries this sector of the economy has very high margins. It therefore represents huge gains for tele operators.

In the wake of deregulation there will be opportunities for new operators to acquire specially adapted solutions for their companies. The appearance of new players means a definite threat to traditional operators' previously secure and profitable customer segment.

More and more companies will sell off or merge their activities in the matter of information technology (IT). There is a strong tendency to concentrate on the company's core activities, a trend that is seen as one of the most important recipes for increased competitivity.

This strategy opens up the possibility for operators who invest in better understanding the customer's milieu and adapts their solutions to customers needs of telecommunications. Nevertheless, many companies in this situation confront a new problem – a certain conservatism among traditional tele operators when it comes to dealing with the company's needs in a rational and effective manner.

Colonizers

In this situation the customer instead seeks out new, alternative operators. Some of these will come from totally different branches, for example computer communications. By offering to take care of a company's other needs for information technology, these operators will have established themse'ves in the tele branch.

These colonizers can offer tele users new types of solutions and new views. But then competition will still force all the players to adapt to the rules of the game that apply. This will trigger a very tough competitive situation where many players will either be bought up or forced out.

Service brokers

Many smaller customers do not have the capacity for individual special solutions. They will establish a new niche in the branch, for special service brokers. By selecting and combining services from different players, the brokers will come up with a solution that best applies to the company and simplifies its tele routines.

It is difficult for smaller companies to have an overview of the market. Therefore there will be an immense need for these service brokers.

There are about 2,500 multinational companies in the world. Their customers make very high demands on their communications solutions. Since competition will increase, "time to market" will be the key to success. In this situation an effective and operation-secure communication system is a competitive advantage.

In most cases the multinational company will have already differentiated its IT operations from its core activities. Many companies have, for strategic reasons, chosen to retain activities in the company, but as a separate company with its own profit center. In most cases, however, corporate leadership has chosen to buy communications services from an outside company.

Giants equip

BT in Britain is equipping itself for the future by building up its Cyclone service. With this, BT will be able effectively to offer the business world custom-made global tele-solutions.

Another of the teleworld's giants, the American AT&T, is introducing its new concept Worldsource at the same time, in alliance with operators KDD in Japan and Singapore Telecom.

To be able to offer its services around the world, however, is no prequirement for an operator to be an attractive tele partner. Effective handling of tele services in a region can also be a competitive business idea. A good example of this is Unisource, an alliance between Swedish Televerket, PTT Holland and PTT Suisse. The company offers computer communications services to businesses.

Long experience as a network operator is a prerequirement in this context. Most of those involved in this domain, therefore, have their origin in national tele monopolies.

The Mobile market

This battle has already begun, but it is far from over. Today, there is most often two contestants in the arena: The traditional operator (PTT) and the new license holder. The market is chiefly national.

The new operators have strong alliances, both financially and technologically, and also have the advantage of an organization that is flexible and market oriented. Still, there is often much that speaks for the traditional operator: "The customer know what one has but not what one will get." That's why the established operator is a very strong opponent.

On the other hand in Germany it is Mannesmann that is the established mobile operator and it is Deutsche Bundespost Telekom that must compete with Mannesmann. In this case the traditional operator misjudged the significance of a well-defined market message and "timing," as we indicated in a previous article. Today, the German example is undoubtedly unique, but we will see a lot more in the future.

Mobile in various ways

In principle there are three kinds of "mobility." Around the ground, around the base stations and complete mobility. Various technical solutions – NMT, GSM, CT2, cordless home phones etc. – have had a tendency to specialize in one of these types.

We can confirm historically that the first attack had as its target to reach big business customers. However, the mobile phone became more than a work tool; it became a necessity and a status object which promised a large number of users. Thanks to this very large and in many cases unexpected demand, the network was expanded, which became necessary to take in other customer segments.

Today competition is growing significantly in the cellular market. It is not unusual with at least three different players on one national market. The direct face-to-face in the mobile market prompts another battle: the cordless home phone. Today's cordless home phone offers the user mobility in a 500-meter radius around the base unit, a distance steadily growing.

PCN/PCS operators like Mercury in Britain and E+ in Germany are turning chiefly to markets for local mobility. At the same time it is clear that they can also offer total mobility.

In Europe the question is whether there is any technological solution as competitive as GSM. This new digital mobile telephone system will attain gigantic volumes on the terminal market, with low prices as a result. That's why it is doubtful whether PCN/PCS can achieve sufficient offer competitivity in time to compete with GSM, so long as no technical drawbacks hinder expansion of the GSM network. On the other hand PCN/PCS will press prices further for the already established analog network operator.

Battle of the homes

In the first instance the home subscriber market can be seen as difficult terrain to conquer for a new operator. However, there are players in other branches who, alongside the traditional tele operator, can reckon with home subscribers in their customer circle, for example electricity and cable TV companies.

These colonizers see telecommunications as a branch to expand in, so as to strengthen their core activities or with a view to changing branches. In England there are several well-known examples of how cable TV companies also offer telephony to their customers.

In the tele branch there are also other players who further down the road will cast their gaze toward the home subscriber. When the current of new business customers eases, mobile telephone operators will be forced to seek new sources of revenues.

Many futurist researchers believe that the home market will be dominated by the operators that can offer the best terminals and services. User-friendliness is the key to increased utilization of telecommunications in the home.

Battle on intelligence

Decntralized or centralized intelligence? Yes, that is the question.

The large network operators see themselves sliding down into the computer transport market's dark depths where low margins and high prices rule. The large national tele networks will in future be only transparent transport networks where one service can not be distinguished from another.

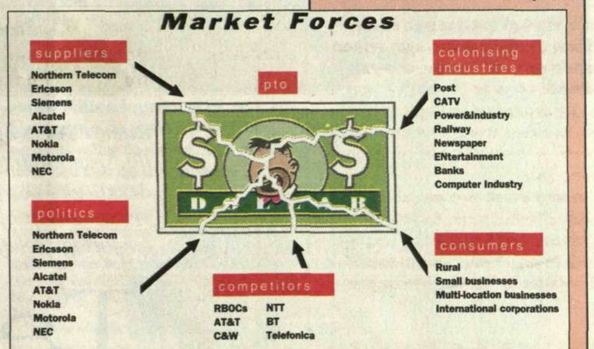
At the same time terminal suppliers are putting more and more functionality in their phones, computer terminals, etc. Already today's normal mobile phones have powerful processors, and in the future most services will be handled directly in the set.

In this situation the large network operators will be thrown back to introducing the intelligent network concept. Their weapon is, among others, services that are based on the player's possibility for number analysis and traffic steering. This calls for a step toward more rational and more effective network managing.

The services that can be produced today do not fully come up to the quality level that end users will demand. Today's services of the 800-type in the U.S. and the 020-type in Sweden are very revenue-producing precisely because number analysis and traffic steering are the network operator's most powerful competitive tools.

Many network operators plan to invest in increased services in the network. Secretarial services, telephone onpass, information services and other services that are based on personal service. This is one way to more effectively utilize the telphonist corps, a professional group that to a great extent has lost its original significance, since the user calls directly.

Authors: Anders Ericsson
Eva Lindqvist
Editor: Lars-Göran Hedin



Standards - for better or worse

The need for standards in telecomunications has for a long time been an indisputable demand. It has called for immense and comprehensive standardization work.

Today, the old conviction that standards are a must is being re-evaluated.

Standards are far more than just detailed descriptions. Detail standards have been helped along by the natural striving among operators to become independent of suppliers. Today there is a definitely pronounced need for operators to distinguish themselves from their competitors. In this situation, too detailed standardizing can be a hindrance. It has to a large extent led to a shrinking of offers on the market.

In a previous article we described how operators will be active in two different domains: Adding value (the value-adding parts) and Bridging Distance (the distance-bridging parts). Like the traditional Chinese concept of Yin and Yang, the standards have light and dark sides. In order to explain it in its entirety, we have chosen to compare Bridging Distance with Yin and Adding Value with Yang. When Yin is the earth, near, ordered, cold and dark then Yang is the heavens, distant, creative, warm and glittering.

In order to achieve the best possible solutions you must very often pull away from detail-direction. Instead, it becomes a question of getting space for creativity and innovations. Players in the Adding Value domain come with their orientation toward consumers and demand "time to market" to be extremely dependent on being able to vary its offer for services. Such an operator does not have time to wait for standards to be fixed. Instead, de facto standards will be created.

On the other hand, players active in the Bridging Distance domain will be extremely dependent on institutional standards in order to be able to guarantee that different types of networks function together.

Meeting standards in Bridging Distance will be a basic demand for being able to compete. Standards can also be seen as a means or tool for the connecting of networks, while in many instances it can be a hinder for those who want new services.

According to the Chinese philosophy both Yin and Yang have a bit of each other in itself, so it is ridiculous to totally deny that a certain order is needed overall, or equally that a certain dose of chaos is needed.

Bridging Distance brings order to the telemarket and provides a base for all communications, while Adding Value answers for adaptability to market and customers. However, it demands that Bridging Distance not be too ordered or structured if it is to retain its opportunities for development.

The opposite applies for Adding Value, where where far too much chaos can cause market upheaval, which reduces interest among customers.

Buenos Aires has been known for far too long as being "incommunicado." Not having a phone has been the common reason for many Argentines not being in touch. But now changes are on the way. Overall privatization of state-owned companies in Argentina have set the stage for for foreign telephone companies -not least Ericsson.

Teleboom in Argentina

Ericsson has been in Argentina since the 1920-s, but it is only now that the individual Argentine can seriously begin to hope for his own, functioning phone. During the next five years the number of telephone lines will be more than doubled. Today there are 11 phones per 100 inhabitants. In 1998 the number is expected to be 25.

It was in Argentina that Ericsson recently sold its last operating company, CAT, as it was known. It had ten percent of the country's telecommunications when it was sold in April 1992. French-Italian Telecom and the Spanish Telefonica divided up the company, and with that Ericsson fulfilled a ten-year-old decision to do away with owning operating companies.

It was the Argentine government's privatization policy that made the sale of CAT possible. It also gave Ericsson quite other possibilities to seriously throw itself into the dynamic Argentine market.

The difficult economic crisis of the '80s is over in large areas of Latin America. The debt crisis and capital flight have been replaced by growth and an inflow of foreign capital.

For Argentina's part the big change began when the Peronist Carlos Menem was elected President in 1989. Together with the Harvard-educated economy minister, Domingo Cavallo, he launched a far-reaching privatization wave, which began with the sale of the telephone company NTL. A consortium of French and Italian interests, Telecom, took care of the country's northern area, and Spain's Telefonica went to the south.

A host of economic reforms followed, and today Argentina has an impressive economic growth of 10 percent – something that brought back self-confidence and buying power.

Overheating

But it is an overheated development that has also brought problems. Two years ago the Argentine peso was on a par with the U.S. dollar. And during these two years the country has seen 46 percent inflation without devaluing. The peso is obviously overvalued, with all that this means for foreign trade.

"Undeniably, a lot has happened in recent years," says Eduardo Restuccia, director of Compania Ericsson. "We find ourselves in an incredibly dynamic situation, and there are high expectations of us."

"Ericsson has a good name and reputation in Argentina," says Eduardo Restuccia, president of the group's main Argentine company.

During CAT's almost 70-year activities in Argentina, a total of some 100,000 lines were installed. During the next five years Ericsson alone will install 600,000 local lines plus 100,000 transit lines.

"Moreover, if you bear in mind that we do not have any domestic manufacturing, like competitors NEC and Siemens, the figures are still remarkable," says Eduardo Restuccia.

Own resources

Compania Ericsson works entirely with its own resources. We have not undertaken any joint ventures nor do we work with any local companies.

"This makes us unique here in the country," says Eduardo Restuccia. "But Ericsson has a good name and reputation in Argentina and that helps a lot."

The biggest customer is Telefonica and it is Buenos Aires with its close to 12 million inhabitants that will first note the changes from Ericsson's powerful undertaking in the next few years.

Changing life

"Unfortunately we cannot build up an entirely new telephone network in two, three days, even if a lot of people think so".

"Privatization of the telephone network is good for the country, and it will mean tremendous change in the lives of most Argentines. But telecommunications have stood still for so many years that people's patience is running out."

Privatization has radically changed the conditions for a rapid improvement in telecommunications. Bureaucracy has been cut down considerably. The money that comes in from subscribers can be used for trading and investments. Besides, the government has been tough when it lays down conditions for concessions, among other things setting high demands for quality.

"The main aim of course is that as many Argentines as possible will be able to call. I see no reason why those now operating in the market should fail. All the players are being directed by very competent people, and this country has a very huge need for tele services."

"We are now in a dynamic situation. Expectations are very high."

New offices

Developments have moved fast for Ericsson in Argentina. Even though it is just a little over a year that CAT was sold, Compania Ericsson is very steady on its own feet.

It has located and trained good installers. The number of employees has grown to 190 and the company has recently moved into new offices with a view of Rio de la Plata.

However, Compania Ericsson has no plans for own manufacture in Argentina. All equipment comes from Brazil, as well as from France and Spain.

"It gives us a better chance to concentrate on installation of telephone lines, private exchanges and building a mobile telephone network," says Eduardo Restuccia

Lars Magnus Jansson

In the fashionable shopping quarter of Buenos Aires one hardly notices that the country has recently been in a severe economic crisis.

Although the country has a strong economy now, telecommunications still lag. The need for expansion is immense. Photos: Lars Åström

Lars Edvardsson, president of Ericsson Toshiba Taushin Systems K.K., and Gunnar M.

Export prize for Japan business

At a ceremony in Tokyo in mid-May, Ericsson Radio was given an Export Council "Trade Award" for its strong entry with mobile telephony into Japan. To date ERA has won Japanese orders for digital mobile telephony worth about three billion kronor. Like all successes, it appears all too natural after the fact. But that was not the case a couple of years ago.

During the second half of the eighties there was to a large extent only one person at Ericsson, Morgan Bengtsson, president of Nippon Ericsson, who was on site and who single-handedly and indefatigably worked the large, complex tele world in that closed country of Japan.

His first mission was to map out the market and to establish contacts with key people. Important enough, but still no real concrete success could be had before the Japanese telecommunications monopoly began to be broken up and new players come into the arena. Among other things, after trade pressure from the U.S.

Many chances

A complex game of many chances began. The first tangible success came in 1990 when Ericsson was chosen to join a group of 10 suppliers, who would develop a digital mobile telephone system for NTT, the Japanese tele administration, which was finding its analog network burdensome.

At the beginning of 1991 ERA was chosen to join the standardiztion committee, something that proved to be very valuable. In part ERA was able to influence the Japanese standard PDC (that is Pacific Digital Cellular) that was being worked on, and also the task gave a lot of good will and respect from the Japanese tele companies.

Ericsson got – together with NEC and Mitsubishi – the task of supplying modulator-demodulator equipment for base stations for NTT's network in Tokyo.

Ericsson has now completed first deliveries of 37 base stations in the northern part of Tokyo and the network, with the country's first digital system, has gone into operation. Certainly on a smaller scale, but in the fall it will go into full commercial operation.

The building up of the network, which will be nationwide, continues and in the next stage the densely populated Nagoya and Osaka will be covered.

Ericsson Radio's remarkable economic success in Japan is nevertheless tied to the Digital Phone Group, one of the four other operators.

Five operators

The picture is such that alongside NTT there are four other operators who got licenses to drive mobile telephony networks in Japan.

There is TU-KA Cellular Tokyo, which will construct a nationwide system on 1500 MHz. They have chosen NEC and Motorola as suppliers. There are IDO and DDI, which will complement each other in a nationwide network on an 800MHz frequency, built by NEC in collaboration with Motorola and Fujitsu.

Finally, there is the Digital Phone Group, which today includes three regional operators that eventually will build a nationwide network on 1500MHz. Tokyo Digital Phone, Kansai D.P. and Tokai D.P. have all chosen Ericsson as sole supplier of the system. Their network will go into operation next spring and cover about 60 percent of Japan's population.

Billions

This is the digital phone history to date:

The first order came from Tokyo Digital Phone in May 1992, for development, delivery and installation of a network in Tokyo with capacity for 150,000 subscribers. Value, 700 million kronor. In July Kansai D.P. ordered for 600 million kronor a network in the region Osaka, Kobe and Kyoto. In October Central Japan D.P. ordered a network in the Toaki and Nagoya region, for 50,000 subscribers. In February this year Kansai came with an added order worth 500 million kronor and later Tokyo came in with one worth 300 million.

Japan has grown to become one of Ericsson's most important markets. It is also to date already the world's second-largest market for mobile telephony.

In August 1992 Ericsson and Toshiba formed a joint-venture company to handle installation and setting into operation the systems in Japan.

Mountainous

Japan can be compared with Norway. The country is almost as large and as mountainous and the population is concentrated in a relatively small area. But Japan has 125 million, compared with Norway's four.

The pocket phone is attractive in the built-up areas since heavy traffic forces many people to travel by subway, for example.

In Tokyo, NTT is planning to build another network, a so-called personal telephone network, on 1500MHz to come into operation in March next year.

Ericsson is also participating here, working now on developing a mini base station.

Lars Cederquist

Transport of products from the West in traffic-clogged Beijing.

China deal result of good collaboration

The head of the BusinessPhone division, Lennart Detlefsen, sales manager Ulf Jervinge and product manager Stefan Lindwall together negotiated the 650-million deal with the customer. It is the largest individual order that Ericsson has ever hadin the area of BusinessPhone. Delivery begins immediately.

Already in 1988, Lennart Detlefsen signed the first contract with BWCP in China. Then it concerned manufacture of MD110 for large and medium-sized companies. The new deal with BusinessPhone, in segments of up to 200 extensions, means yet another breakthrough on the large Chinese market.

The existing offer of business switches for small and medium-sized companies in China consists mainly of analog systems. With BusinessPhone new digital technology and functionality are being introduced. Increased collaboration reinforces Ericsson's position in China in the area of business switches.

Rapid growth

There is enormous potential on the Chinese market, which is now undergoing rapid growth. China's economic strength is increasing and demand for telecommunications is great. Just the market for business with a need for fewer than 200 extensions, is reckoned to reach 200 million lines a year, with an annual growth of 20 to 30 percent.

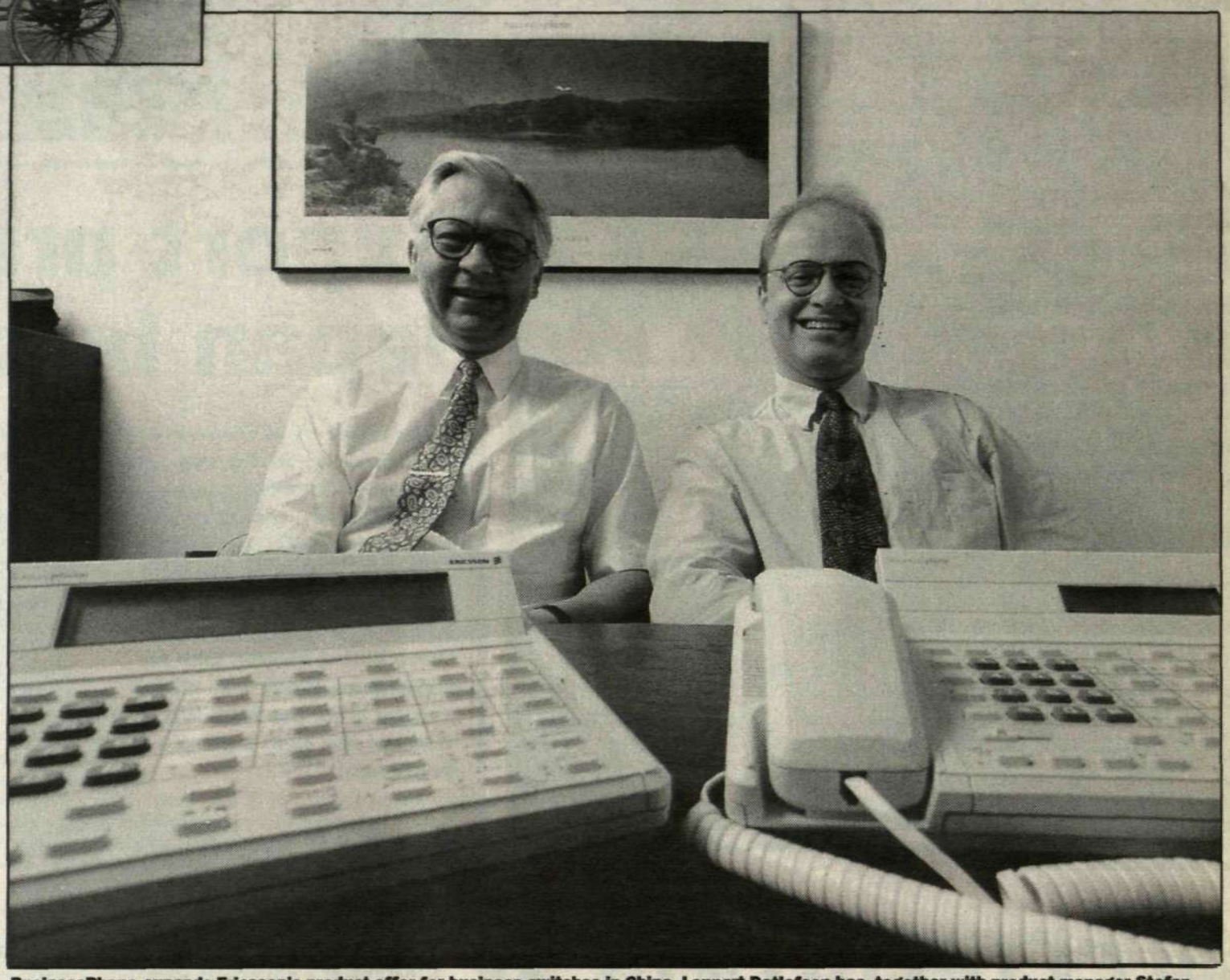
The rapid growth stems from conscious efforts in China in establishing small and medium-sized companies.

GNP growth (total value of the country's output, services and investments) rose more than 12 percent last year. China is also a market with good business conditions. But, nevertheless, it must be beware of risks for some overheating in the economy as well as rising inflation.

Bright future

"In the future we can count on even greater volumes for BusinessPhone," says Lennart Detlefsen.

The total potential for BusinessPhone in China is, looking at five years hence, three times as large as the size of the current contract. With favorable developments, that means sales can be significantly larger than what is envisioned in the contract. In order to accomplish this, however, it calls for products to be further developed and for continuous expansion of sales and service organizations in China.



BusinessPhone expands Ericsson's product offer for business switches in China. Lennart Detlefsen has, together with product manager Stefan Lindwall...

Photo:Karl-Evert Eklund

...and sales manager Ulf Jervinge made up the winning team that brought home the deal.

Market leader

Successful collaboration with BWCP over the last five years has led to BWCP becoming a market leader in business switches for large and medium-sized companies. For its marketing, BWCP has built up a modern sales organization with 25 affiliates throughout the country.

The current deal covers segments for small and medium-sized companies, that is from 20 to 200 extensions, where BusinessPhone 150 fits in perfectly.

In 1993 they will buy totally completed systems and sets from Sweden, then comes gradual integration of systems manufacturing on site in China.

However, the sets themselves will continue to be had as finished products from Ericsson. This year that amounts to 50,000 BusinessPhone lines to be delivered to China. For Karlskrona that means continued good prospects.

"Ericsson's good name has naturally been a strong point in negotiations"

Technology transfer

"The products that we offer have very high performance and functionality levels, which makes it possible to successfully compete with other players on the Chinese market," says Lennart Detlefsen.

To succeed in this market one has to have, moreover, a solid local anchor in the form of marketing organization and manufacturing as well. That's why it is crucial that the necessary technology can be transferred and commonly implemented in local production.

What is it then that you must have in order to succeed in China, besides good products and technology?

"The good reputation that Ericsson has regarding technological know-how, top quality and long-term commitment has naturally been a strong point in our negotiations," says Lennart. "Cultural differences must also be respected," he adds. "The negotiating climate is different. Chinese negotiating tactics and traditions are built a lot on very consensus thinking, with many people involved. Everyone must be in agreement and must arrive at a joint decision. You must have a lot of time and patience in order to bring a deal to a successful close here."

Honor in focus

"Ericsson's three values — professionalism, respect and perseverance — are well-suited for doing business in China," Lennart Detlefsen emphasizes.

"The next step is to expand our collaboration with BWCP. My personal feeling is that computer network products, like ERIPAX, would come into the picture. There is surely also very huge potential for network projects and perhaps even sensor products.

There is a lot of building going on all over the country."

Thord Andersson

In February 1972 Ellemtel got the assignment from Ericsson and Swedish Televerket to develop the telephone system AXE. More than six years later, in May 1978, the world's first digital exchange was in operation. Some fifteen years later, in January 1993, a total of 4,665 AXE switches have been installed around the world.

The road to this enormous marketing success has been marked by hard work from a large number of people.

In a previous issue of Ericsson's Contact we told the story of the technical developments of AXE. This issue deals with the even so important job of marketing and work with two very significant orders.

AXE CONQUERS THE WORLD

"When five million lines were installed we thought of putting a large ad in the Financial Times," says Kjell Sandberg, responsible for central marketing communications during the late '70s. "But we didn't do that. Instead we decided that we would put the ad when we had 10 million lines. But we didn't do that either. Therefater it just rolled in, and we still have not taken the ad."

With more than 55.6 million lines installed and a further 10.4 million on order there are many who think it was an easy job to sell AXE. But that is a myth.

"It is incredibly difficult to win an order," says Kjell Sandberg. "Some orders are certainly easier to get than others, but many cost sweat and tears. Moreover, some business is lost to competitors."

Kjell Sandberg knows what he is talking about. He was responsible for central marketing communications for AXE at the end of the '70s and beginning of the '80s. This department coordinated development of all sales material. Together with information director Nils Tengborg and advertising manager G.O. Douglas they came up with, among other things, lectures and films for internal and external presentations, exhibitions and the trade press.

"Before the time of personal computers we bought microprocess kits and I put them together at home on the kitchen table at night," Kjell Sandberg recalls. "Without these machines we would hardly have managed to produce all the material and price lists in the rushing flow of orders."

Those who traveled most to present AXE were mainly Kjell Sandberg, John Meurling and Bernt Ericson. For Kjell Sandberg it meant about 180 travel days per year at the beginning of the '80s.

"I have been in a total of 55 countries to market AXE. It was unbelievable trying, with airline delays and time zone differences. Moreover, very often baggage ended up in some country other than where I was myself. That's why I always had the necessaries in my hand baggage."

Kjell Sandberg, together with other presenters, did a great deal of marketing work, but that was just a little cog in the entire wheel.

"As marketeer you do a presentation in a couple of hours, while Ericsson's local office may have done several years of preparation work. That's why teamwork is of such importance," Kjell Sandberg stresses.

Presentation in Helsinki

Marketing a new product is not easy. Moreover, when it is not completely developed and is still on the drawing board, it is even more difficult.

Two years after Ellemtel got the assignment to develop the AXE system it was felt that it was sufficiently developed to be presented for an external operator. The first presentation was made for the Finnish Televerket in Helsinki. Then followed Oslo and Mexico.

Before personal computers came about we bought microprocess kits which I put together at night on the kitchen table," recalls Kjell Sandberg. "So that we could produce material and price lists in time."

"You yourselves do not know how superior AXE is, but we do. We have had the chance to compare."

Australian PTT

The following year twenty presentations of AXE were made, but only for a selected group and in the form of oral presentations. Only once was AXE presented on a large scale. It was at the International Switching Symposium, ISS, in Munich 1974. But even then it was in a low-key manner.

First AXE exchange

After having been on the drawing boards for some years, AXE was ready to be tested in its right milieu. The first analog pilot exchange went into use in Södertälje in March 1977.

In September of the same year Australia announced that it had chosen AXE as its new tele system.

Kjell Sandberg recalls:

"After Australia's public announcement that it had chosen the AXE system for its local exchanges, they recounted for us how they had sat through a large number of presentations and lectures from both Ericsson and its competitor, ITT."

"You yourselves do not know how superior AXE is, but we do," they said. "We have had the chance to directly compare AXE with ITT's system Metaconta in all respects."

On January 25 "the deal of the century" was signed between Saudi Arabia and Ericsson/Philips/Bell Canada. **Photo:Karl-Evert Eklund**

But, Ericsson came close to losing the order. What you think of as small details can mean a new order. But the order can just as easily go to a competitor. It was the latter that could have happened with the Australian order.

Few days notice

Bertil Bjurel, then general director for the tele administration, said:

"A few days before the Australian PTT was to announce which system it would choose, the then president of Ericsson, Björn Lundvall, came rushing up to me. "The Australian PTT chairman was going to recommend its board to buy the ITT system. He does not want to advise them to buy a Swedish system, which the country's own Televerket had not bought as yet, even though it was half owner in the development company that developed the system."

With a few days notice, Bertil Bjurel got the Televerket board together, which resulted in them ordering a number of AXE exchanges.

"With this news in hand I called up the Australian chairman," continued Bertil Bjurel.

Some days later the news burst. Australia had chosen the AXE system.

At the same time that the deal with Australia was in full swing, several other deals with offers, negotiations and presentations were taking place. One was with Saudi Arabia.

"Deal of the century"

In June 1977 an inquiry came from Saudi Arabia, about whether Ericsson was possibly interested in submitting an offer for a tele system. The offer should be handed in three months later.

Of course, Ericsson was interested. It meant a very huge order. Newspapers all around the world had dubbed it all as "the deal of the century."

Ericsson had built the already existing tele network in Saudi Arabia. But Philips had reached a preliminary agreement to build the new network. However, there was some criticism that there was no competitor in the large order. That's why Saudi Arabia went out with a public request for offers.

Ericsson realized that the only way was to write a joint offer with Philips. Moreover, the offer should be in accord with another offer – for operation of the network – which should come from Bell Canada.

During the holiday months, when Sweden normally grinds to a halt, work was in full swing to get the offer ready.Within three months it was ready to be submitted on the table in Saudi Arabia. The offer took up 42 binders with 6,000 pages – a stack of 2.7 meters.

Saudi Arabia choose AXE

On December 13 Saudi Arabia announced that it had chosen AXE, and on January 25 the contract was signed between Ericsson, Philips and Bell Canada. A great victory was won.

In the time space of three monts both Australia and Saudi Arabia had chosen the AXE system, two huge and prestigious orders.

There were not very many in 1977 who expected the success to continue. But thanks to incredibly broad teamwork in Ericsson, Televerket and Ellemtel, as well as energetic co-workers, AXE has become the enormous sales success that it is today.

Anette Johansson

Sources: "A Switch in Time," by John Meurling, as well as "Technical Revolt," by Bengt-Arne Vedin.

Laying underwater cable. Photo: Thord Andersson

BUSINESS IDEA:
- To produce and distribute cable and thereby related products for telecommunications and power networks.

OVERALL GOAL:
- To assure that Ericsson cables are used to the maximum in Ericsson's total needs.

STRATEGY:
- To assure growth over the next few years.
- To be seen as a quality supplier of cable.
- To increase our international marketing for telecom and power cable.
- To attain maximum profitability in high-volume production.
- To gradually rationalize our activities, manufacturing processes etc.,
- To gain competitive strength.

Ericsson's Cable business includes:
- Power cable division in Falun.
- Tele cable division in Hudiksvall.
- Power and tele cable manufacture in Latincasa, Mexico City.
- New factory for manufacture of fiber optocable in India opens at the end of 1993.

Distribution companies:
- Forslid & Co. AB in Sweden, Norway and Denmark.
- SELGA with subsidiaries.
- Vikinkikaspel Oy in Finland.

Cable operations tie Ericsson together

"The thrust of our business idea lies in opto and tele cable, with leanings to tele networks and exchange cables," says Janne Sjöden, head of the Business Unit Cable and president of Ericsson Cables AB.

"Our aim is to be seen as a quality supplier of cable. There is a very active TQM input integrated into our operations."

One goal is to bring market and technology nearer to each other and to achieve close collaboration between the two. This means huge demands on people in the operations and an ever greater need for competency development. Cable operations invested early in competency development. Janne has seen close up since then how people have grown in their jobs.

Huge successes

Ericsson Cables has achieved huge successes in power cable and tele cable. Export activities have doubled in the last 2-3 years. Turnover in 1993 is estimated at about 1 billion kronor.

"Power cable gives us the strength to determine the market. It is important that we are active in both power and tele cable. Both product types balance each other in recessionary swings and on the whole we are stronger in the cable market.

When it comes to purchasing of raw material it is also important to have sufficient volume to get the right purchasing prices.

Internally, work in Business Unit Cable is driven in planned management group meetings. In this type of activity the different parts are very dependent on each other. Coordination between divisions and distribution companies for power cable are very important for synergy effects to be felt at their maximum. Market issues are especially important to discuss and follow up.

Janne Sjöden has most recently been manager for the tele cable division and vice president since January 1, 1992. He was previously manager of the power cable division in Falun and also head of the special cable division in Kungsbacka. Since September 1, 1992, Janne hasbeen president of Ericsson Cables AB and since January 1 head of Business Unit Cable in Business Area Components.

"We are also expanding our activities beyond Sweden. For power cable, investments are in the Nordic area, but for tele cable we are in the rest of the world, not least Southeast Asia," says Janne.

Product portfolio must be constantly monitored so that it is as current as possible. That applies to everything, from ocean-laying cables to high-voltage cables.

The distribution company SELGA is an important marketing channel, as is the Forslid Group, which is chiefly a channel for the power cable division. To a large extent tele cable is sold via the Ericsson group as part of equipment or different projects.

SELGA is two-thirds owned by Ericsson and the rest by ABB. SELGA is Sweden's second-largest power cable wholesaler.

The group

As for the Ericsson group, there is continuous collaboration with a number of business units, the bulk of it being with network construction activities. Ericsson Cables is a large supplier of cable for AXE exchanges and also for defense and mobile telephone systems.

"Cables link up the Ericsson system. The more mobility, the more cable. That's our role in the group," says Janne.

The tele cable division participates in a large number of projects all over the world. This applies to huge projects where cable most often accounts for a very large share of the total project costs.

"Televerket has traditionally been our largest customer. By opening up to competition it also means for cable that other suppliers have come in instead. Moreover, the need for copper cable on Televerket's side has diminished. The railroads are also building a lot of tele networks and there we are the largest suppliers, with close to 100 percent."

Many customers

Other deliveries are done in collaboration with Ericsson's various companies in different types of projects. But there are also deliveries to other end users, tele administrations and tele operators in different parts of the world. Power cable end users are often power stations, power installers and industry, who buy through wholesalers or other distribution channels.

Ericsson Cable also has a factory, Latincasa, in Mexico City. Latincasa has been manufacturing cable since 1949 and today does both power and cable manufacturing. Customers include, among others, Telmex and Teleindustria Ericsson. The number of employees is about 1,500.

Future and vision

By tradition it has always been important to have manufacturing cable activities in practically every country. This has been a matter of "local business," says Janne.

In line with privatization and deregulation in various countries and within the EC the ongoing trend and the future judgement is that resources must be concentrated.

Ready solutions

Especially in opto technology, we must concentrate resources for this high-technology and investment-laden activity. Affiliation with a system house will be necessary, and system houses are few. Alcatel, Siemens and Ericsson are some of them.

"When the monopoly crumbles and 'the many players' take over the market, it will be more and more a question of selling finished solutions - a finished network. We shall be part of that future trend."

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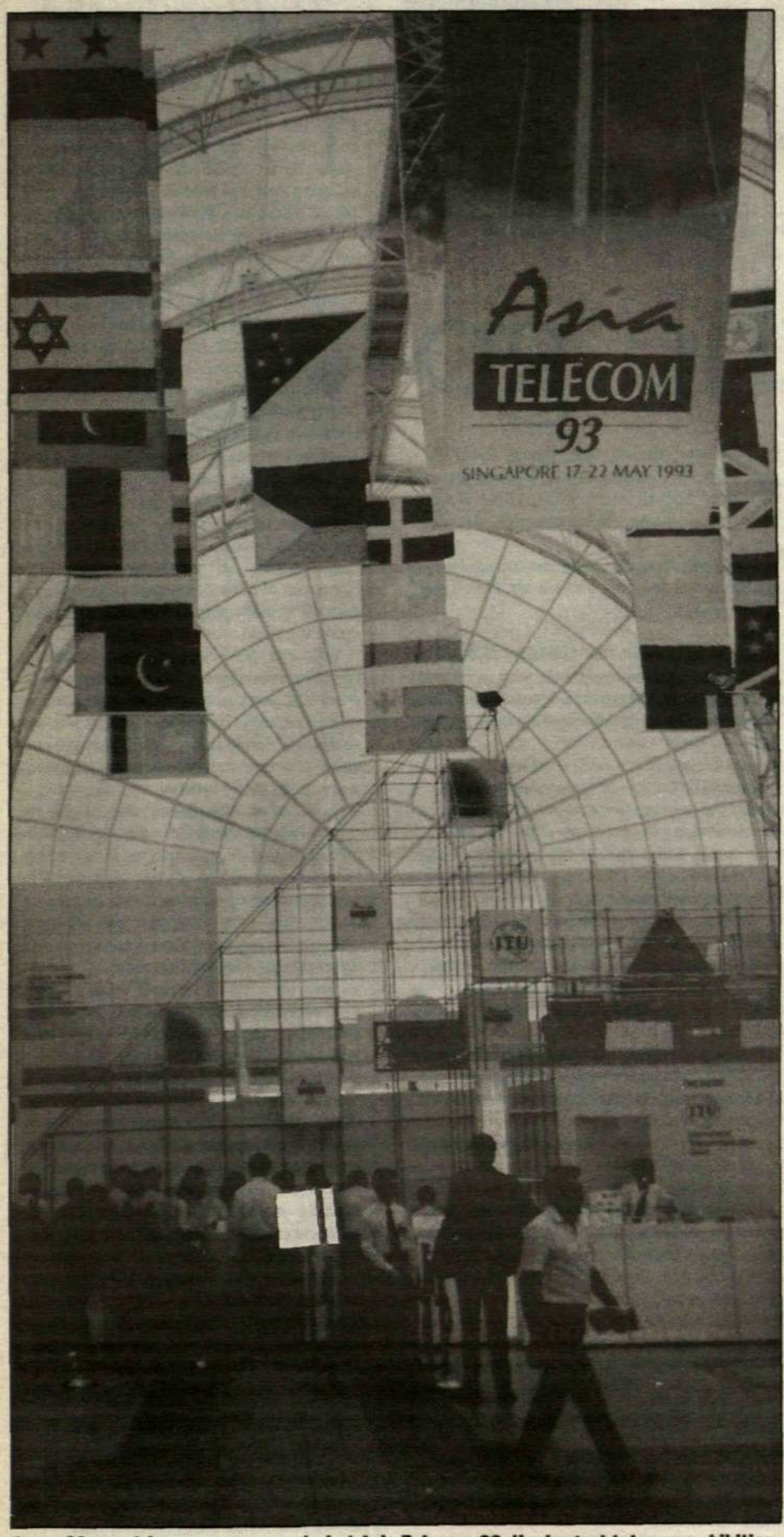
"When the monopoly crumbles and 'the many players' take over the market, it will be more and more a question of selling finished solutions – a finished network. We shall be part of that future trend."

Inger Bengtsson

This number of Contact was printed on june 20. If You receive your copy more than one week after that date – please let us know! Contact Pia Rehnberg at LME/DI, Stockholm, memo LMEPRG, phone +46 8 7197869.

The exhibition was a meeting place for suppliers and 32,000 visitors.

32,000 attended Asia telecom



Some 90 countries were represented at Asia Telecom 93, the largest telecom exhibition to date in Asia.

Greatest interest in Mobile telephony

Ericsson presented the latest in switching, transport networks, mobile telephony and radio, as well as business communications.

This year's Asia Telecom exhibition in Singapore attracted 32,000 visitors from 90 countries. It was the perfect – and to date the largest – meeting place for the telecom branch in the region.

The organizer was the International Telecommunications Union, ITU, and the occasion was seen as one of the year's most important events.

For Ericsson's part, Asia Telecom 93 was a successful effort, where the company's collective competence and product range was presented. In a 200 square-meter stand Ericsson presented its latest technology in switching and transport networks, mobile telephony and radio, as well as business communications.

The stand was designed according to the new display concept that was used back in the fall of '92. Asia Telecom 93 can be seen as a path in the development toward a new Ericsson profile and a more cost effective way to work.

Hot subjects

It was clearly shown that mobile telephony is a hot subject today by the huge number of visitors that wanted to know more about systems for mobile telephony and mobile phones.

Another very jammed demo area was RAS 1000, "radio in the local loop." RAS 1000 makes it possible to connect new subscribers to the public network fast and cost-effectively by using radio all the way from local network to subscriber.

Ericsson's new transport network products were shown for the first time at an expo in the region. Interest in the traßnsport networks is quite large in Asia, which could easily be seen with the huge interest for ETNA, the Ericsson Transport Network Architecture. Network management with TMOS was also a well-visited presentation area.

Also on display were the cordless telephone system Freeset, MXE – a platform for multimedia, the business switch MD110 Callcenter, DRX1 – a rural exchange based on MD110, Mobitex for mobile data communications, the mobile radio system EDACS, wide-area paging with the new base station Compact 9000, pagers, fiber welders, the crypto telephone Codeline, MiniLink as well as power and cooling equipment.

Parallel with the exhibition symposiums were held throughout the week. The events attracted 1,238 delegates from 80 countries and presentations and symposiums were held in the four main divisions – policy, regulatory, technology and economy. One of the 168 speakers was Lars Ramqvist, who presented new applications for mobile radio communications at the policy symposium.

Journalists a target group

Taking care of journalists attending an exhibition is important. Close to 200 journalists covered Asia Telecom 93. Ericsson held two events for the press in Singapore. One group of international journalists took part in a breakfast meeting with Lars Ramqvist and Kurt Hellström, where among other things the quarterly earnings report and our developments in the region were discussed.

Lars Ramqvist announced new contracts in mobile telephony and paging in the region. Ulf H. Johansson, head of the Ericsson company in Singapore, spoke about its activities and the latest business deals in the region, and Leif Holn, president for Ericsson Messaging Systems Inc. in the U.S., launched MXE – a platform for multimedia – in the region.

Largest telecom event

In conection with Asia Telecom 93, Ericsson also launched the corporate advertising campaign with the first ads being placed in among others the Asian Wall Street Journal and the International Herald Tribune.

Visitors to the Ericsson stand were met by Lars Ramqvist, who via posters looked out from the stand with the greeting "It's about communication between people. The rest is technology."

Asia Telecom was held May 17-23. The 371 exhibitors from close to 30 countries were spread out in five exhibition halls on a total area of 23,700 square meters in Singapore's World Trade Centre. Together it amounted to the largest telecom event to be ever organized in the region. It remains only to be seen if Asia Telecom 97 would beat the record.

Lena Hyttsten

CONTACT

Ericsson, HF/LME/A, Room 4313, S-126 25 Stockholm

Gunilla Arhén, president of Ruter Dam, was impressed with Ericsson's cordless business phones, which she tried out with Eva Westberg, one of Ericsson's two Ruter Damer this year.

Women on the go

"Sweden needs more women managers at a higher level. There are many competent women leaders," says Gunilla Arhén, one of the founders and current president of Ruter Dam.

The development program for women managers, Ruter Dam, visited Ericsson on April 19. Some 54 women managers from the Swedish business sector listened intently and posed interesting and penetrating questions to chief executive Lars Ramqvist, personnel director Britt Reigo and president of Ericsson Radio Systems, Kurt Hellström.

Chief executive Lars Ramqvist led off by explaining all about Ericsson's activities, problems, successes and the future.

"I am ashamed that we have so few women managers at Ericsson. That's something we have to change. All doors must be open for competent women managers," the chief executive said at the end of his speech.

Britt Reigo spoke about management development in Ericsson, and Kurt Hellström described mobile telephony for today and tomorrow. During the break the exhibition hall was displayed and Gösta Lindström recounted Ericsson's history.

Gunilla Arhén, president of Ruter Dam, was very pleased with the visit and she conveyed her thanks and appreciation:

"It is always interesting to pay a visit to Ericsson. Even more so this year, when we are just in bad humor reading all about business in the newspapers, it is especially pleasant to take with you impressions of a company that is actually doing well in spite of the recession. Sweden needs companies like Ericsson.

"We at Ruter Dam think highly of Ericsson. You have been with us ever since we started and have always been active, when it comes to naming participants and to inviting us to interesting company visits. I hope we will continue our collaboration for many years to come."

What is Ruter Dam?

Ruter Dam is a leadership program for women managers.

"To work professionally is the A to Z. The aim is that Ruter Dam will help more women managers to higher levels and that the program will result in more women managers, who work well with both women and men," says Gunilla Arhén.

The program was started in 1987. Participants are selected and nominated by their employers, must be between 30-45 years and must have an operative management position. The program runs for a year, where participants are offered a mentor, various seminars and meetings as well as company visits.

"These company visits are very popular. When we began in 1987 we had to go through a lot of trouble to get into some companies. Now we don't even have to contact the company, they contact us."

This year, among other places Ruter Dam has visited Celsius/Bofors, Televerket and Ericsson. Still to go are IBM, FOA, Bonnier publishing house, Securitas and Handelsbanken.

"The president or one of the top executives usually hosts the visit and we are always well taken crae of."

Ericsson's Ruter Damer 1993

This year Ericsson nominated two employees to the program, Margareta Josefsson and Eva Westberg, who will now develop their leadership with Ruter Dam.

Eva Westberg has been working at Ericsson since 1984. Today she is manager of a unit at Basic Technology which is responsible for basic technology for machinery for Ellemtel.

"I must admit that I did not know about Ruter Dam before I was nominated," says Eva Westberg, with a shy smile.

"It was my boss, Christer Jungsand, who asked if I was interested in having him nominate me. I am not too fond of some women's movements, but when I learned about what Ruter Dam represented I became very interested."

"I must say that I have learned a lot about myself and my qualities as a manager, both positive and negative, thanks to the program."

Joséphine Edwall

Footnote:
If you want more information about Ruter Dam contact Gunilla Arhén, telephone +46 8 7230930.

Ruter Dam's five-step program

1. Organize a mentor – outside mentors.
Each participant gets an outside mentor, who is an executive in a big company.

All mentors are chosen depending on their interest in sharing their experiences.

2. Organized mentors – internal mentors.
Every Ruter Dam also has an internal mentor in her own company. They should be at least two levels higher.

3. Ruter Dam Salon.
One evening a month all the participants meet at the Strand Hotel in Stockholm. Every meeting starts with group work using leadership literature. Then comes a speech from a business leader, followed by discussions.

4. Seminars over 11 days in five sessions.
This deals with both internal and external mentoring, leadership, organizational work, strategic decision-making, female and male leadership as well as personal development.

5. Company visit.

END LINE

LARS-GÖRAN HEDIN

Pulling in the same direction

This issue is marked to a very large extent by Ericsson Management Forum, EMF, the huge management meeting that was held in Stockholm a couple of weeks ago. EMF remains a memorable exercise for delegates and others present. Not merely because the meeting was an assessment of where the group stands today and of what has happened since the last large meeting in Sonthofen/Linköping, but also because EMF offered a whole range of more hands-on encounters,

When a group faces difficult situations of a type that no one in the group is accustomed to tackling, then all of the group's members are really being tested. It is a test of capacity for team work collaboration and the capacity to solve problems. The extreme aim of such an exercise is to get all the participants to pull in the same direction. Which is precisely what Lars Ramqvist and his colleagues in Ericsson's executive leadership would like the entire company to do.

One can draw interesting conclusions from the execrcises at EMF. First and foremost that you can actually get everyone to pull in the same direction. And that it is not really difficult to achieve that. The will and commitment to resolve common problems were never really lacking.

Another conclusion that could be drawn about Ericsson managers is that they appeared to be quite authority-bound. When a team leader had to be appointed for a group it was invariably the one highest in rank that was selected, although it may have been someone totally different that took the initiative.

Such behavior is in itself quite natural, but surely there must be better criteria for choosing a leader when one is confronted with new and unusual tasks.

Ericsson is an international corporation, but it is mostly Swedes at the top of the various companies. Still, there were a lot of non-Swedes participating at EMF, and the entire conference was held in the company language – English. But when it came to drawing up various teams for the more practical exercises, then it often was the case of Swedish taking over.

Again a natural behavior, but surely something that many of us that work at Ericsson should be better at: to play down "the Swedish" in us when we are with colleagues from other countries.

Finally, a last observation, which also cropped up in discussions at EMF. Of the more than 200 participants there were only three women. So indeed there is room for more women managers at Ericsson. And in capacities other than those that have to do with gentle issues like personnel and communications.